



National Water and
Sewerage Authority



Strategic Plan 2025-2029

Executive Summary

The 2025-2029 Strategic Plan sets out the strategic direction for NAWASA over the next 5 years. It acknowledges the challenges and opportunities that the organization and the country face and lays out the key priority areas of focus for action. The Plan builds on the utility's strengths, while addressing major weaknesses, and promotes the overall improvement of NAWASA's water utility by ensuring the reliable delivery of good quality water to its customers and contributing to the development of the Tri-Island State.

In the development of this Plan, a situational analysis was undertaken to identify past and current issues throughout NAWASA's water utility. Stakeholder input from thirty-nine responses to a questionnaire, six focus groups, discussion with NAWASA employees, a strategic retreat with stakeholders, and discussion with NAWASA's Board of Directors and senior management provided important information on the current state of the water utility in Grenada, and what areas should be prioritized for the 2025-2029 planning period. The following six areas are identified as the key priority areas (KPA's) for the 2025-2029 period:

1. Water Security Sustainability and Environmental Stewardship
2. Innovation, Infrastructure and Asset Management
3. Operational Effectiveness and Efficiency
4. Excellence in Customer Service and Community Engagement
5. Workforce Development and Safety
6. Governance and Leadership

During the next five years, NAWASA should strive towards achieving the following nineteen goals:

Goal 1: Water Quantity and Quality – Ensure an adequate supply of good quality water for distribution.

Goal 2: Service Reliability – Ensure a reliable water delivery service.

Goal 3: Water Conservation – Promote efficient use of water and implement conservation programs.

Goal 4: Sewage Management – Enhance sewage collection and treatment processes to protect water quality and support ecosystem health.

Goal 5: Financial Sustainability and Climate Change Adaptation – Plan for the impacts of climate change.

Goal 6: Maintenance and Upgrades – Develop plans for the regular maintenance, upgrades, and replacement of aging infrastructure.

Goal 7: Innovative Technologies – Invest in smart technologies and modern systems for monitoring and managing water and sewage systems.

Goal 8: Resilience – Enhance the resilience of infrastructure to withstand natural disasters and other emergencies.

Goal 9: Technology Research, Development, and Implementation – Encourage innovation and the adoption of new technologies to improve resilience and service delivery.

Goal 10: Water Stewardship (Quality) – Ensure a consistent supply of good quality water for distribution through monitoring and additional programs.

Goal 11: Water Stewardship (Quantity) – Ensure an adequate supply of water for the anticipated demand through exploration and the enhancement of existing conditions.

Goal 12: Effectiveness and Efficiency – Maintain an effective and efficient utility.

Goal 13: Public Education – Educate the community about water conservation, sewage treatment, and the importance of sustainable practices.

Goal 14: Customer Service – Enhance customer service operations to improve responsiveness and satisfaction.

Goal 15: Service Excellence – Ensure customer satisfaction by providing a reliable and efficient service.

Goal 16: Training and Development – Invest in the ongoing training and professional development of employees.

Goal 17: Safety Programs – Ensure a safe working environment with robust health and safety protocols.

Goal 18: Employee Recognition and Succession Planning – Develop a succession plan to address future workforce needs and leadership transitions.

Goal 19: Strategic Leadership – Foster a culture of strategic thinking and proactive leadership within the organization.

In order to achieve the above listed goals, strategic actions are identified with respect to each goal. A total of seventy-five strategic actions are identified.

The successful implementation of the 2025-2029 Strategic Plan will result in:

- Timely and consistent delivery of good quality potable water to the public.
- Resilient, robust, and stable water collection and distribution infrastructure, capable of responding to the challenges posed by the effects of climate change, natural disasters, and customer needs.
- The adaption and response to emerging challenges such as climate change, natural disasters, and employee turnover.
- A restructured Customer-Centric Organization, focused on the implementation of human resource systems and management strategies, policies and procedures that address the needs of staff, customers, and other stakeholders.
- A financially viable organization that continues to improve its present financial position, to finance its capital investment program and meet its operational expenses, and financial responsibility to the Government of Grenada.

Table of Contents

EXECUTIVE SUMMARY1

ABOUT NAWASA..... 1

BACKGROUND..... 1

Purpose and Methodology1

Objectives of the Strategic Plan2

CRITICAL ASSUMPTIONS.....2

STRATEGIC DIRECTION3

Vision Statement3

Mission Statement3

Core Organizational Values.....3

Value Proposition3

KEY PRIORITY AREAS.....5

Key Priority Area 1: Water Security Sustainability and Environmental Stewardship6

Key Priority Area 2: Innovation, Infrastructure and Asset Management.....8

Key Priority Area 3: Operational Effectiveness and Efficiency 10

Key Priority Area 4: Excellence in Customer Service and Community Engagement 11

Key Priority Area 5: Workforce Development and Safety 13

Key Priority Area 6: Governance and Leadership 14

IMPLEMENTING THE PLAN..... 15

MONITORING/EVALUATION 15

PERFORMANCE REPORTING 15

REFERENCES 16

BIBLIOGRAPHY..... 17

ANNEXES 18

Annex 1.0 – SWOT Analysis 19

Annex 2.0 - PESTEL Analysis 22

Annex 3.0 - Probability, Impact & Possible Actions 24

Annex 4.0 – Strategic Planning Participants 25

Acronyms

NAWASA – National Water and Sewerage Authority

SWOT – Strengths, Weaknesses, Opportunities, Threats

PESTEL – Political, Economic, Social, Technological, Environmental, Legislative

BMP – Best Management Practices

SOP – Standard Operating Procedures

KPA – Key Priority Area

WHO – World Health Organization

WRMU – Water Resource Management Unit

G-CREWS – Climate Resilient Water Sector in Grenada

KPI – Key Performance Indicator



About NAWASA

Background

Purpose and Methodology

The purpose of the Strategic Plan is to provide clear direction on the future development of the National Water and Sewerage Authority (NAWASA) over the next five years. The Strategic Plan was developed in three phases. During the first phase, a situational analysis was conducted to identify the utility's strengths, weaknesses, opportunities, and threats within and outside the operating environment. This involved reviewing NAWASA's documents, such as annual reports and governmental documents, and discussion with NAWASA's Board, senior management, staff, and stakeholders.

The second phase involved compiling a questionnaire to be distributed to stakeholders and consumers for their feedback and suggestions. A retreat was hosted for stakeholders on October 17th, 2024, in St. George's, where a discussion paper on the Strategic Plan was presented.

The results of the retreat, questionnaire, focus group sessions, and discussion with NAWASA's Board of Directors, senior management, and staff were used to develop the final Strategic Plan, which focuses on six key priority areas (KPA) that management must address to ensure the long-term economic sustainability of NAWASA.

Objectives of the Strategic Plan

The objectives of the Strategic Plan are to:

1. Identify the business factors (strengths, weaknesses, opportunities, and threats) that will affect the utility (NAWASA) over the next five years.
2. Articulate the vision, mission, and core values to guide the Board of Directors and senior management.
3. Identify and develop various Key Priority Areas and Goals for the planning period 2025-2029.
4. Provide clear policy direction for the organization.

Critical Assumptions

The successful implementation of the Strategic Plan will depend on the following assumptions:

1. NAWASA will continue to exist as a statutory body and there will be no Water Sector Reform during this planning period.
2. Government will favorably consider any reasonable request for increase in tariffs.
3. Government will approve the request for a review of existing legislation necessary to improve the company's operating parameters to ensure more flexibility and efficiency.
4. The availability of concessionary financing to support major Capital Investment projects.

Strategic Direction



Vision Statement

To be a premier water utility, providing excellent service to all customers, fostering a healthy and productive nation.



Mission Statement

To provide clean, safe, and reliable drinking water and efficient sewage services in a sustainable manner that exceeds customer's expectations.



Core Organizational Values

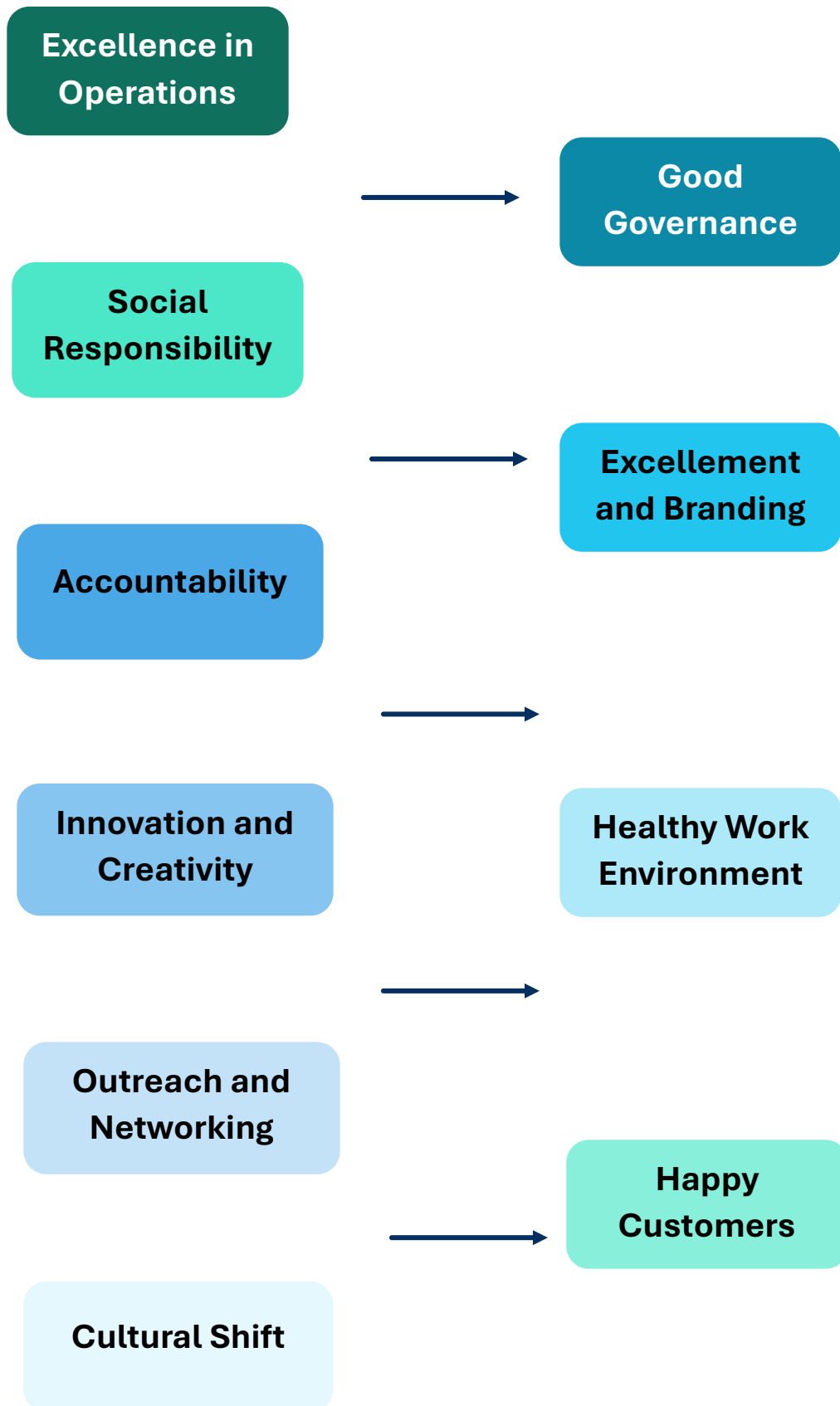
- Excellence in operations, and service delivery.
- Social responsibility at the community and national levels.
- Accountability at all levels to all stakeholders.
- Innovation and creativity in operations and service delivery.
- Outreach and networking with stakeholders.
- A culture of continuous improvement and healthy working environment.

Value Proposition

NAWASA is a customer-focused organization, providing convenient access to water and sewage services, and contributing to public health and environmental benefits for the sustainable social and economic development of the Tri-Island State.



Core Organizational Values Flowchart





Key Priority Areas

Both a SWOT, and a PESTEL analysis was undertaken, which allowed for the Key Priority Areas (KPAs) of the Strategic Plan to be identified. The SWOT and PESTEL analyses can be found in Annex 1.0 and 2.0. The KPAs are critical business issues that the utility will address over the next five years for the improvement of the water utility and the organization's financial viability in the future. The KPAs will measure:

- Efficiency – Ratio of inputs to outputs for a given process or activity.
- Quality Standards – the extent or degree to which the process or activity's output meets the stated standards.
- Effectiveness – the extent or degree to which the process or activity meets the needs of customers or accomplishes its purpose, outcomes, or results.

The KPAs identified for this planning period are:

1. Water Security Sustainability and Environmental Stewardship
2. Innovation, Infrastructure and Asset Management
3. Operational Effectiveness and Efficiency
4. Excellence in Customer Service and Community Engagement
5. Workforce Development and Safety
6. Governance and Leadership



Key Priority Area 1: Water Security Sustainability and Environmental Stewardship

The first KPA focuses on water security for the water utility's operation, as well as the reliability of the water utility. It also prioritizes and promotes the sustainability of water resources while considering the effects of climate change.

Goal 1: Water quantity and quality – Ensure an adequate supply of good quality water for distribution.

Strategic actions to achieve Goal 1:

1. Implement a source water protection program (watershed management plan).
2. Mainstreaming of rainwater harvesting.
3. Identify and develop new water sources (integrated water resources management).
4. Implement a real-time monitoring program for water level and water quality.

Goal 2: Service Reliability – Ensure a reliable water delivery service.

Strategic actions to achieve Goal 2:

1. Replace or upgrade all aging infrastructure as per an asset management plan.
2. Enhance the existing leak detection program to minimize lost water, as well as improve the response period time (non-revenue water).
3. Introduce BMPs and SOPs throughout the utility's operation and maintenance.
4. Develop an operational monitoring program.

Goal 3: Water Conservation – Promote efficient use of water and implement conservation programs.

Strategic actions to achieve Goal 3:

1. Continue to promote water conservation techniques on the NAWASA website and social medias.
2. Implement water conservation techniques throughout the operation of the utility.
3. Develop and implement a financial sustainability plan

Goal 4: Sewage Management – Enhance sewage collection and treatment processes to protect water quality and support ecosystem health.

Strategic actions to achieve Goal 4:

1. Improve sewage collection and treatment of generated sewage prior to discharge.
2. Assess and implement decentralized sewage collection and treatment.

Goal 5: Financial Sustainability and Climate Change Adaptation – Plan for the impacts of climate change.

Strategic actions to achieve Goal 5:

1. Ensure financial sustainability of NAWASA through reliable revenue base. Consider establishing a water bottling plant to increase revenue base.
2. Develop and implement a water sector climate change adaptation plan.
3. Invest in climate resilient infrastructure.
4. Invest in additional rainwater collection systems.
5. Conduct awareness campaigns to inform the public and stakeholders of issues relating to climate change and the water utility





Key Priority Area 2: Innovation, Infrastructure and Asset Management

This KPA focuses on IT assisted infrastructure sustainability, resiliency, and asset management. It emphasizes the need to replace and upgrade existing infrastructure within the organization based on priority.

Goal 6: Maintenance and Upgrades – Develop plans for the regular maintenance, upgrades, and replacement of aging infrastructure.

Strategic actions to achieve Goal 6:

1. Establish a maintenance program for the regular maintenance, upgrades, and replacement of aging infrastructure.
2. Secure funding for the regular maintenance, replacement, or upgrade of aging infrastructure.
3. Compile a complete digital inventory of all infrastructure and assets.
4. Develop and implement an asset management plan.
5. Develop and implement a non-revenue water management plan.

Goal 7: Innovative Technologies – Invest in smart technologies and modern systems for monitoring and managing water and sewage systems.

Strategic actions to achieve Goal 7:

1. Transform analog data into a digital format.
2. Implement smart meters.
3. Upgrade infrastructure for the treatment of sewage and salt water.
4. Optimize the treatment process.
5. Introduce renewable energy options for treatment and monitoring techniques.

Goal 8: Resilience – Enhance the resilience of infrastructure to withstand natural disasters and other emergencies.

Strategic actions to achieve Goal 8:

1. Invest in climate resilient infrastructure.
2. Ensure compliance with standards and guidelines for the design, construction and operation of water and sewage infrastructure.

Goal 9: Technology Research, Development, and Implementation – Encourage innovation and the adoption of new technologies to improve resilience and service delivery.

Strategic actions to achieve Goal 9:

1. Adopt new technological advancements, and their use throughout a water utility.
2. Stay informed on the evolving new technology (drones, artificial intelligence, etc.) for future implementation throughout the utility.
3. Digitize all aspects of the collection, storage, treatment, distribution, and maintenance processes where applicable.
4. Develop an implementation plan to digitalize all aspects of the water utility based on a cost-benefit analysis.

Key Priority Area 3: Operational Effectiveness and Efficiency

This KPA promotes an effective and efficient water utility, with an emphasis on improving water quality consistency, ensuring adequate water supply, and efficiency and effectiveness throughout the operation and maintenance of the utility.

Goal 10: Water Stewardship (Quality) – Ensure a consistent supply of good quality water for distribution through monitoring and additional programs.

Strategic actions to achieve Goal 10:

1. Implement a water quality monitoring (bacteriological, chemical and radiological) program.
2. Replace/upgrade parts of the treatment process to allow for the effective treatment of turbid water.
3. Introduce SOPs and BMPs in the treatment and water distribution system.
4. Implement a watermain flushing program.

Goal 11: Water Stewardship (Quantity) – Ensure an adequate supply of water for the anticipated demand through the enhancement of existing conditions and exploration of other options.

Strategic actions to achieve Goal 11:

1. Enhance the existing leak detection program to minimize the non-revenue water.
2. Implement water conservation techniques.
3. Increase raw water storage through additional rainwater collection systems and watershed management planning.
4. Consider the use of alternative water sources such as desalinated ocean water.
5. Identify and develop new water sources.
6. Explore new groundwater sources.

Goal 12: Effectiveness and Efficiency – Maintain an effective and efficient utility.

Strategic actions to achieve Goal 12:

1. Introduce a real-time monitoring (SCADA) system to monitor trends or changes in the utility's operation.
2. Existing and additional treatment facilities be equipped with the proper equipment to treat turbid water.
3. Replace or upgrade all aging infrastructure to be climate resilient.

Key Priority Area 4: Excellence in Customer Service and Community Engagement

The fourth KPA emphasizes customer and community engagement. With the focus on customer and community engagement, the organization can prioritize customer satisfaction and further promote the utility within the community.

Goal 13: Public Education – Educate the community about water conservation, sewage treatment, and the importance of sustainable practices.

Strategic actions to achieve Goal 13:

1. Increase social media presence.
2. Ensure to post major alerts on social media in a timely manner and provide updates through social media and a quarterly newsletter.
3. Conduct awareness campaigns to inform the public and stakeholders of issues relating to climate change and the water utility.

Goal 14: Customer Service – Enhance customer service operations to improve responsiveness and satisfaction.

Strategic actions to achieve Goal 14:

1. Introduce a comment response operation so that comments made on social media posts deserving of a response are responded to in a timely manner.
2. Develop an annual questionnaire to distribute to customers and stakeholders for input on the utility's governance, operation, and services.
3. Create a customer complaint and response unit and develop an effective public complaint and response system accompanied by a centralized digital registry of complaints and corrective measures.
4. Introduce an annual customer appreciation day.
5. Develop and implement a communication plan.



Goal 15: Service Excellence – Ensure customer satisfaction by providing a reliable and efficient service.

Strategic actions to achieve Goal 15:

1. Improve the response time for public complaints.
2. Maintain a consistent effort to recruit additional employees to ensure an adequate workforce throughout the utility.
3. Introduce SOPs and BMPs for different employee roles.
4. Optimize all processes throughout the utility.

Key Priority Area 5: Workforce Development and Safety

This KPA focuses on workforce enhancement and professional development within the organization. It emphasizes the need for a more extensive workforce and prioritizes employee training, performance, and recognition.

Goal 16: Training and Development – Invest in the ongoing training and professional development of employees.

Strategic actions to achieve Goal 16:

1. Maintain a consistent effort to recruit additional employees and continue to invest in training.
2. Enhance existing employee's skills through targeted training and provide additional tools to improve the utility's management.
3. Develop a professional development program.
4. Continue to implement Occupational Health and Safety Program.
5. Strive for a healthy work environment and investigate and resolve employee's complaint on a timely basis.

Goal 17: Safety Programs – Ensure a safe working environment with robust health and safety protocols.

Strategic actions to achieve Goal 17:

1. Ensure that employee's privacy is respected.
2. Ensure gender balance in the work force and protect the rights of marginalized groups such as LGBT.

Goal 18: Employee Recognition and Succession Planning – Develop a succession plan to address future workforce needs and leadership transitions.

Strategic actions to achieve Goal 18:

1. Introduce an annual employee recognition program (Excellence Service Award and Key Milestone Service Award – 10, 15-, 20-, 25-, and 30-years' service awards)
2. Continue to keep pension liability a priority of the Board and Management.
3. Promote NAWASA as a gender inclusive employer through social media or traditional methods.
4. Develop and implement a human resources management plan.

Key Priority Area 6: Governance and Leadership

The last KPA focuses on a strong visionary leadership for policy direction and decision making, and effective management to ensure resource availability for the implementation of strategic actions and operational success.

Goal 19: Strategic Leadership – Foster a culture of strategic thinking and proactive leadership within the organization.

Strategic actions to achieve Goal 19:

1. Public Utilities Regulatory Commission provide policy-level and administrative oversight for the proposed Water Resources Management Unit (WRMU), water and wastewater services regulation.
2. Creation of a separate entity to carry out the day-to-day management of Grenada's water resources.
3. Strive for innovation and adaptability for continuous improvement through paradigm and cultural shift as appropriate.
4. Promote collaboration and relationship.
5. Adapt to changes and lead through action.

Implementing the Plan

To successfully implement the Strategic Plan, all employees, and relevant stakeholders, including the Government of Grenada, should be made aware of the vision, mission, core values, objectives, and goals. The plan's success will depend on the degree to which all employees are involved and committed to its implementation. Therefore, it is recommended that the plan be launched formally to all employees and key stakeholders. It is also recommended that the vision and mission statements be displayed at all NAWASA locations and should form the basis for evaluating performance at the departmental and corporate levels.

The implementation of key findings and recommendations of NAWASA's IT review and organizational review should be included in NAWASA's annual business plan.

Monitoring/Evaluation

Establishing quality monitoring and evaluation mechanisms is essential to successfully implementing the Strategic Plan. The plan's implementation will require regular updates on the progress of key priority areas through the preparation and implementation of annual business plans. The annual business plans should identify implementation timelines, outcomes and key performance indicators for each priority area. Nineteen goals, seventy-five objectives and seventy-five indicators will be monitored over the five-year planning period.

The Management Team will develop an Implementation Plan through its annual Business Plan to monitor the progress of the Strategic Plan. Senior Management will also monitor the Strategic Plan as part of the regular business monitoring and evaluation processes. The results should be reported to the Board of Directors. The frequency of this monitoring and evaluation process will be determined by the Board, however, consideration should be given for annual reporting.

Performance Reporting

The National Water and Sewerage Authority will make information about the performance of the plan available to the public and to stakeholders using guidelines provided in the Performance Monitoring Guidelines for State Owned Enterprises and Statutory Bodies as outlined by the Ministry of Finance.

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Annexes

Annex 1.0 – SWOT Analysis

An extensive review of NAWASA's documents and official reports was completed, along with continuous discussions with the Board of Directors, Senior Management, Stakeholders, and Staff to determine its Strengths, Weaknesses, Opportunities, and Threats (SWOT). The results are shown in table 1 below.

Table 1 SWOT Analysis

Strengths	Actions for Improving Strengths
S1: Abundance of rainwater for periods of the year.	- Rainwater collection storage infrastructure development.
S2: Over 90% of the population has access to safe drinking water.	- Continue expanding the distribution network to provide drinking water to the whole population.
S3: Borehole water only requires disinfection before use.	- Consider implementing the use of groundwater more frequently.
S4: Positive financial performance.	- Continue to operate the utility with the organization's financial health as a priority.
S5: Public drinking water follows WHO standards.	- Continue efforts to consistently produce good quality water.
S6: Majority of domestic users are metered.	- Continue to implement smart meters.
S7: NAWASA is a reputable institution.	- Maintain this reputation.
S8: The organization has experienced, dedicated and skilled employees.	- Enhance these skills through targeted training. - Develop a professional development program.
S9: The utility has a good Corporate Social Responsibility Program.	- Continue to provide support to the community through quality outreach programs to enhance its image.
S10: The organization has strong management.	- Provide additional tools to enhance this strength.
S11: There is goodwill among customers.	- Continue to improve the delivery of customer service.
S12: The utility has a National/Internal Disaster Management Plan.	- Enhance this plan to improve the security of the company's assets.
Weaknesses	Actions for Reversal of Weaknesses
W1: Aging infrastructure and equipment.	- Develop an Asset Management Plan to replace/upgrade aging infrastructure. - Replace/upgrade infrastructure with climate resilient infrastructure.
W2: Lack of adequate water storage.	- Continue efforts to develop new water storage facilities.
W3: Inconsistent water quality.	- Implement a water quality monitoring program. - Implement a source water protection and watermain flushing programs. - Introduce BMPs and SOPs in the water treatment and distribution system.

W4: Limited sewage infrastructure leading to groundwater contamination.	- Expand the existing sewage infrastructure.
W5: Inadequate sewage treatment.	- Develop on-site sewage disposal system (OSDS) treatment infrastructure.
W6: Inadequate staff and customer accommodation can lead to employee and customer dissatisfaction	- Continue efforts to improve the accommodation for both staff and customers. - Develop a communication plan.
W7: Poor internal communications between departments.	- Restructure the organization to improve internal communications between departments and staff.
W8: Non-funded Pension Liabilities.	- Continue efforts to develop financing initiatives to fund the pensions liability.
W9: Inadequate data collection & analysis to support operational decision-making process.	- Introduce a monitoring system to monitor new trends or changes in the utility's operation. - Database development.
W10: Insufficient and inadequate relevant KPIs to monitor progress within the organization.	- Customize existing international KPIs to monitor the implementation of the Strategic Plan.
W11: Lack of monitoring system of the effectiveness of training received.	- Develop monitoring system to evaluate the effectiveness and of training received.
W12: Insufficient documented SOPs.	- Continue to develop and implements SOPs throughout the organization.

Opportunities	Actions to Exploit Opportunities
O1: Large amounts of rainfall can be collected.	- Develop new rainwater collection systems.
O2: Increased attention for wastewater treatment.	- Consider treating and reusing the generated wastewater. - On-site sewage disposal systems (OSDS) and BMPs.
O3: Climate change resilience projects (G-CREWS).	- Continue to introduce climate change resilience projects.
O4: Opportunities for external funding (international groups and businesses)	- Continue to explore opportunities for external funding.
O5: Water quality improvement through source protection and water quality monitoring.	- Continue to explore efforts to improve water quality.
O6: Best management practices for septic systems.	- Implements BMPs for septic systems and post all documents on NAWASA's website.
O7: Increased financing for capital projects using the climate change funding mechanism.	- Develop financing strategies to fund capital projects.
O8: Improve efficiency by increasing the use of renewable energy.	- Implement strategies to improve efficiency using renewable energy.

Threats	Actions for Mitigating Threats
Ti: Climate change effects such as aquifer salination, droughts, flooding, increased	- Replace/upgrade infrastructure to be climate resilient. - Consider implementing desalination plants.

hurricane intensity and frequency, and increased damage to infrastructure.	- Continue to promote water conservation techniques. - Develop a climate change adaptation plan for the utility.
T2: Periodic water security.	- Improve water storage. - Identify new water sources. - Advocate better water management during the dry season. - Consider the use of other water sources.
T3: Variations in the price of goods and services can affect the cost of operations.	- Continue to reduce costs through efficiency. - Continue to explore alternative suppliers of goods and services.

Annex 2.0 - PESTEL Analysis

The following political, economic, social, technological, environmental, and legislative (PESTEL) factors were analyzed to understand their possible influence on NAWASA's ability to achieve the goals and objectives set out in the Strategic Plan.

Technology and Energy

The cost of water has been continuously increasing with inflation and will continue to. New technologies in the treatment and distribution system may reduce the relative cost of water. The implementation of new technologies throughout all levels of the utility will be essential in achieving operational efficiency and satisfying customer demands. It will also be beneficial to focus on investment in renewable energies, as energy costs represent a significant portion of the cost of water.

Climate Change

Climate change is affecting Grenada and will continue to influence NAWASA's water utility. It is projected that rainfall will occur in shorter, more intense events rather than in a predictable manner. It is also projected that while the frequency of intense rain events is expected to increase, the overall annual rainfall amounts are projected to decrease, and the number of hot days will increase [1], posing a risk to water security. The intensity of storms is also projected to increase [1] which will have a large impact on the utility's infrastructure. It is essential that NAWASA continues to address climate change and consider the effects of climate change in all decision-making processes. A climate change adaptation plan will be beneficial for minimizing the effects of climate change on the utility. As well as the G-CREWS project will have positive impacts on the water sector with respect to climate resiliency.

Governmental Relationship

A new Grenadian government was elected in 2022, prioritizing health and wellness over the next five years. The new Government is also strongly interested in improving education, agriculture, food security, the marine economy, the physical and digital infrastructure, the creative economy, the energy transition, and the environment [2]. It is important to ensure all goals and objectives of this Strategic Plan are carried out in accordance with any new guidelines or policies the new Government may implement. Maintaining communication, cooperation, and collaboration with the key governmental agencies responsible for long-term development and investments in Grenada is also essential. This is to ensure NAWASA's strategic interest will be represented during negotiations with potential investors.

Limited Traditional Water Supplies

The traditional water sources that Grenada uses for supply are limited and becoming less reliable. The utility depends on freshwater sources, and rainwater collection systems mainly satisfy the demand for drinking water on the main island, while individual rainwater collection systems and desalinated ocean water are used on Carriacou and Petit Martinique. With climate change bringing warmer temperatures and unpredictable precipitation, the water supply will continue to become less reliable. It is essential that NAWASA develops alternative sources of water to maintain water security.

New Legislations and Regulations

The National Water Policy was revised and updated in 2020, and it proposes four key areas that need to be addressed [3]. It is important that these updates are evaluated and considered in decision-making. Also, due to the newly elected Government, it is important to look out for new policies and guidelines that may pertain to the water sector, as well as any objectives or goals of this Strategic Plan.

Given the significant threat of climate change to Grenada's environment and water sector, environmental concerns will increasingly take precedence. This shift could lead to the introduction of new environmental regulations and requirements, resulting in higher capital and operating costs due to the need for additional compliance resources and training. It is essential to consider this with each objective and goal set out in this plan.

Human Resources and Workforce Planning

NAWASA is viewed as a progressive and business-oriented employer. However, it is essential that the company continues to maintain a consistent effort in recruiting additional employees as many of the employees are nearing retirement, and there is a need for a more extensive workforce.

COVID-19 Global Pandemic

The effects of the global COVID-19 pandemic are still currently being felt worldwide. For example, decreases in consumption during the pandemic, particularly from the non-domestic customer whose water consumption is charged at a higher tariff, lead to a fall in revenue from these sectors. The slowdown in economic activity and the disruption of the supply chain have also made obtaining parts and goods, such as chemicals, a challenge [4]. Furthermore, increased purchase prices have affected the water sector and will continue to do so.

Challenges Attracting Concessionary Financing

To continue to implement the company's Capital Development Program, NAWASA must attract concessionary financing.

Annex 3.0 - Probability, Impact & Possible Actions

In addition to the above PESTEL analysis, various other vital factors were analyzed to better understand their probability of occurrence and the possible impact on NAWASA. The results are reflected below in table 2.

Table 2 Probability, Impact, and Possible Actions of External Issues and Trends

External Issues and Trends which will have Future Impacts	Probability of Occurrence (1-Lowest; 5-Highest)	Impact	Possible Actions
P1: Effects of climate change on water resources and infrastructure	4	4	Planning & Development to monitor
P2: Water sector reform	1	5	Senior Management to monitor
P3: Fluctuation of international energy prices	3	4	Finance and Procurement departments to monitor
P4: Limited traditional water supplies	5	5	Planning & Development to monitor
P5: Challenges attracting concessionary financing	5	5	Management to research all possible options of sourcing concessionary finances
P6: Re-structuring of the local energy market	2	3	Senior Management to monitor
P7: Lasting effects of COVID-19 Pandemic	4	3	Finance and Procurement departments to monitor
P8: New Grenadian Government	5	3	Planning & Development to monitor
P9: New Policies and Regulations	4	4	Develop a plan of action

Annex 4.0 – Strategic Planning Participants

The following board members and NAWASA’s senior management, along with other stakeholders participated in the Strategic Planning exercise.

Table 1 Strategic Planning Participants

Board of Directors	
Eric Williams	Director
Melissa Garraway Nelson	Director
Josephine Blache	Director
Dr. Tessa St. Cyr	Director
Colin Dowe	Director
Teddy St Louis	Deputy Chairman
Philip R. Alexander	Chairman
NAWASA’s Senior Management	
Terrance Smith	General Manager
Bonnie Williams	Finance Manager
Dianne Henry	Human Resources Manager
Todd La Barie	Production & Quality Manager
Ernest Bruno	Transmission & Distribution Manager
Whyme Cox	Planning & Development Manager
Dennies Burris	Legal Counsel/Corporate Secretary