



# 2016-2017

CENTRAL WATER & SEWERAGE AUTHORITY

## ANNUAL REPORT



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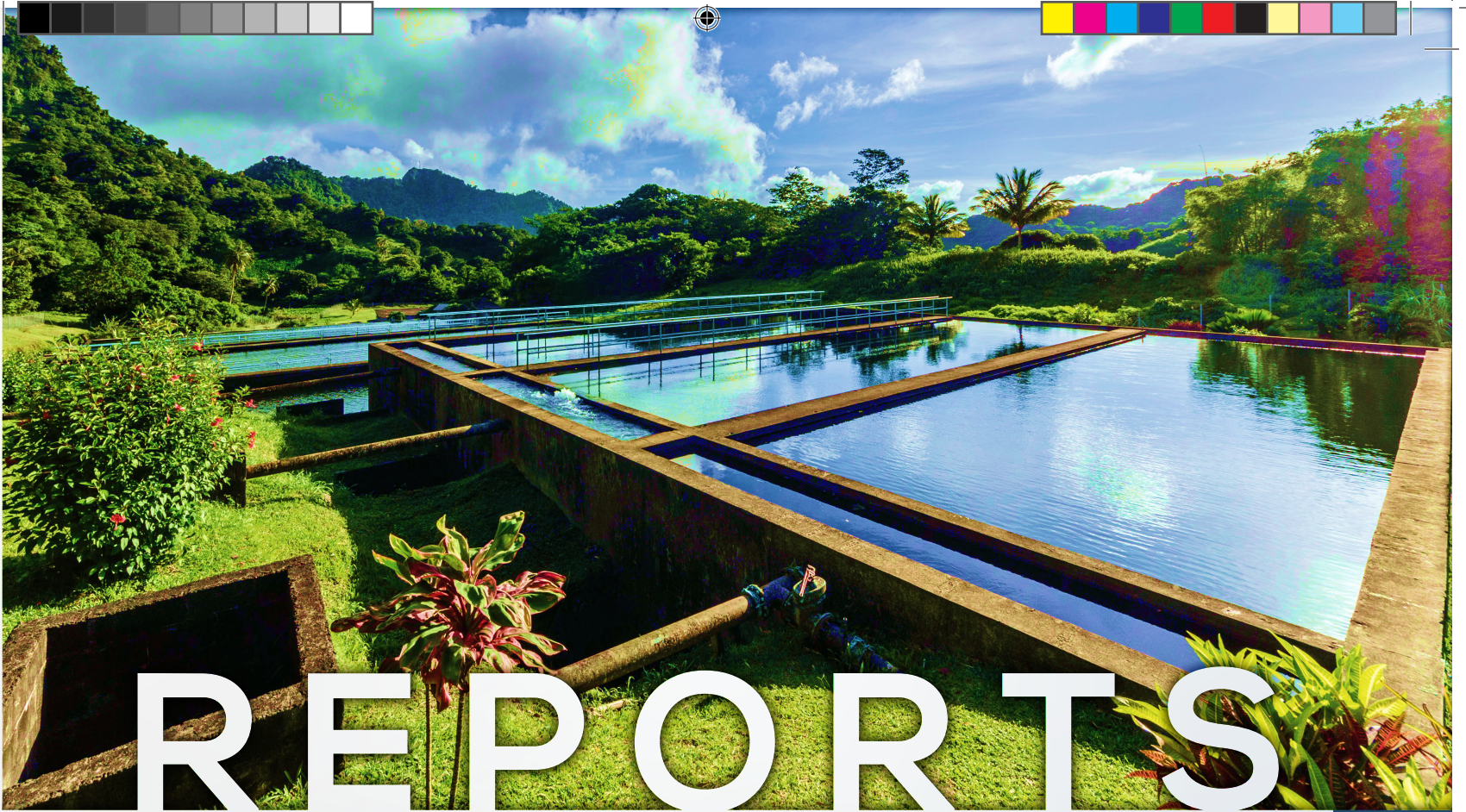
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SYMANTHA GEORGE  
EDITOR

## EDITOR'S NOTE

**T**rain up a child in the way he should go and when he is old he will not depart from it. Although they may occasionally stray, they will eventually revert to the ways they were taught.

You may think for a moment that this sounds like a sermon, but the principle stands true throughout every area of life. If Vincentians are to become responsible, environmentally conscious citizens of a clean island, then we have to revisit our consciousness and our attitude towards our environment and train our youth to do the same.

It is quite evident that although the CWSA has done extensive work in the field of education and awareness on solid waste and water related matters over the years, one of the main lessons learnt during this period is that change does not occur quickly and that education and awareness must be an ongoing activity.

The community outreach and schools and summer camp programmes which have become a regular part of the

CWSA's work programmes can never be sufficient as long as its execution is done by one agency. The fundamental change that is required to transform our environment must be supported from the home into the preschools and upwards. It is time therefore that a more focused approach to this aspect of education become curriculum centred, making it education for life.

We have often heard about conservation and sustainability and within recent years climate change. What does it all mean? What does it signify to you? Does it resonate with you? Does it make you think about how individually or collectively you can help? How can we assist the Public Health/Environmental Services Department in monitoring and managing the abuse of standpipes, and illegal dumping and littering throughout the country that deplete our natural resources, deface our environment and become breeding grounds for disease carrying pests?

I often meditate on the fantasy of a St Vincent and the Grenadines with zero tolerance for littering and illegal dumping, proactive programming to include the

*... the fantasy of a St. Vincent & the Grenadines with zero tolerance for littering and illegal dumping...*

maintenance of healthy rivers and beaches. I also imagine a nation that actively seeks to replant trees in our villages and towns and community blocks that are managed and maintained by residents, all of which would only impact the nation positively.

For years the CWSA has encouraged and pleaded with the officials for assistance in this regard, it has however become clear that more emphasis needs to be given nationwide to the enforcement of environmental laws. A wise council once said that, "leaders lead, they do not have the privilege to complain and slack off." The CWSA therefore, will continue to lead the charge in education and awareness with the expectation that law enforcers, partners and stakeholders will do their parts in preserving our environment, whilst ensuring a healthy nation with a people infused with love and pride for our country.



## MINISTER'S MESSAGE

**I**t gives me great pleasure as Minister of Health, Wellness and the Environment to congratulate the Central Water and Sewerage Authority (CWSA) on the production of a comprehensive annual report of the highest quality. This document tells the story of CWSA's sterling stewardship of our nation's water, sewerage and solid waste resources in the years 2016 and 2017.

CWSA continues to be a shining beacon in the Eastern Caribbean when it comes to the management of a water supply, both in terms of its financial performance and customer service record. This is the natural result of hard work, dedication and commitment on the part of a skilful and competent staff organised under excellent leadership at the Board and management levels. The men and women serving this statutory corporation function within the framework of public policies carefully calibrated to deliver maximum impact and benefits to the population as a whole.

CWSA's continued thrust at: (a) upgrading and improving

the resilience of its plant and assets in the face of Climate Change; and (b) promoting recycling and sustainable waste management in response to the environmental stress created by a modern consumer is consistent with the millennium development goals which have been adopted by the government.



**HON. ROBERT BROWNE**  
**MINISTER OF HEALTH, WELLNESS & THE ENVIRONMENT**

The Central Water and Sewerage Authority has maintained low and stable water rates over many years despite rising costs in order to make sure that the essential services it provides are accessible and affordable to Vincentians. We expect the CWSA to continue to implement the government's policy of assisting certain elderly and economically disadvantaged members of our society with concessions, and reducing the number of communal facilities across the country by expanding the water connections to private homes.

I challenge the CWSA to continue on its current trajectory of growth and development as a leading utility.

**Thank you.**

*Hon. Robert Browne*

# CWSA continues to be A SHINING BEACON in the EASTERN CARIBBEAN



The 2016/2017 years in review have brought with them increased demands and challenges to the forwarding-looking principles on which CWSA stands.

As the years roll by and industries increase solid waste and water supply services come to the fore. Nowadays, the issue of climate change is almost in every telecast, and CWSA must continue to show focused leadership at all levels. To date, there is much to please and less to fault throughout our departments, and the board applauds each employee, be it clerical, technical or field worker. The board takes its responsibility seriously and wishes to highlight for yet another year that CWSA has vision to foster a generation of environmentally conscious citizens capable of positive action-action that must be undertaken across existing ministries of government.

The board in its deliberations exhorts every employee, and by extension the people CWSA serves, to identify with the aspirations and goals of our nation and do the necessary work to help achieve them, and since each national has a role to play, they must be treated with love, respect, dignity and fairness, irrespective of status.

The board



**GIRLYN MIGUEL**  
**CHAIR**  
**BOARD OF DIRECTORS**

## FROM THE CHAIR

shows concern and care for the impoverished communities, the differently abled, and those who depend on our better angels to care for them. Water is life, but life must be sustained-sustained through guided team-work focused on quality. One psychologist opined that regency and frequency in program planning aid retention of knowledge in the performing of every day duties.

The board meets regularly for introspection at all levels

of the CWSA's activity, but keeps an open ear towards the changes that occur regionally and globally. We are cognizant of issues ranging from climate change to the green economy and green jobs, but most importantly, we must focus on initiatives that strive to empower our youth to take adaption and mitigation actions geared towards climate change and policy decision making seriously.

Our challenges include designing national strategies, developing learning materials for formal and non-formal work and raising awareness of the need to integrate

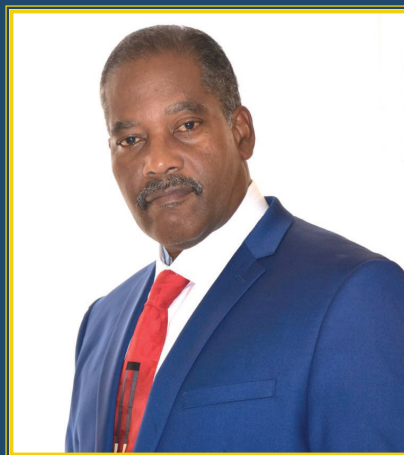
climate change fundamentals into our national curricula and, not forgetting this year's plea to our Vincentian nationals, to highlight at all times the importance of water conservation and storage.



**Students at the 2017 Water Week Schools' Career Fair; tomorrow's generation of environmentally conscious citizens**



**T**his report, unlike previous reports that cover a one year period, captures the performance of the CWSA for the two year period 2016 and 2017. Once again however, the performance of the CWSA continues to be very satisfactory and clearly due in a large part to the combined effort of the team.



**GARTH SAUNDERS**  
**GENERAL MANAGER**

## GENERAL MANAGER'S REPORT

While this report highlights the challenges and achievements of the past two years, it is useful to have this current performance placed in the context of the challenges and achievements over the preceding decade, especially post the \$23 million Windward Water Supply project that improved the water supply along the Windward coast.

In the absence of the fanfare associated with the Windward Water Supply Project in 2007, the CWSA, very quietly invested a further \$23 million in capital expenditure projects, between 2007 and 2016 while simultaneously reducing its long-term borrowings from \$29 million in 2006 to \$7 million in 2016. This was achieved mainly through prudent financial and working capital management, keeping a tight rein on expenses whilst properly planning fleet and plant renewal.

During the past decade and significantly during this

These structures were all designed in-house by the CWSA's engineering team and have resulted in total water storage being increased to 5.4 million gallons.

There were also significant reinvestments in the Solid waste Management Unit's plant, vehicles and equipment

climate change era, island wide water storage capacity was systematically increased by 30 percent through the construction of nine new storage reservoirs in villages such as Fancy, Perseverance, Airy Hill, Akers, Mamoon, Layout, Belle Isle and Jack Hill/Rosehall.



**YEAR 2008 - A 20,000 GALLON  
RESERVOIR AT FANCY AT \$120,000**

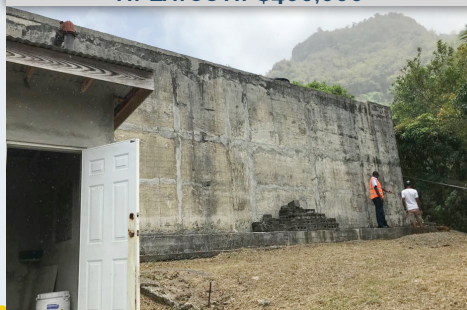


**YEAR 2009 - A 20,000 GALLON  
RESERVOIR AT EYRY HILL AT \$120,000**

**YEAR 2006 - A 500,000 GALLON RESERVOIR  
AT MAJORCA AT \$2,200,000**



**YEAR 2007 - A 100,000 GALLON RESERVOIR  
AT LAYOUT AT \$400,000**



**YEAR 2009 - A 250,000 GALLON RESERVOIR  
AT PERSEVERANCE AT \$820,000**







**YEAR 2010 - A 20,000 GALLON RESERVOIR AT AKERS AT \$100,000**



**YEAR 2011 - A 50,000 GALLON RESERVOIR AT MAMOON, ST. ANDREW AT \$190,000**



**YEAR 2013 - A 250,000 GALLON RESERVOIR AT JACK HILL/ ROSE HALL AT \$1,100,000**



**YEAR 2015 - A 500,000 GALLON RESERVOIR AT BELLE ISLE AT \$1,600,000**



**The newly purchased SWMU track loader in action**

originally given as grants under the OECS Solid Waste Management Project and which had exceeded their useful lives.

Also during the past decade, the CWSA invested heavily in its human resources with the in-house construction of two major office buildings one for the Solid Waste operations at Arnos vale and the new Technical Operations complex at the new Montrose Headquarters.

The CWSA also expanded its operations and service offerings to include septage treatment, water resources, SCADA and GIS mapping units and its online bill view presence. Special care and assistance were also granted to long service employees who were retiring without the full benefit of the group pension plan. These employees, whose working life far exceeded the contributory years to the fund, are now granted a retirement support “handshake” at the time of their retirement.

It is therefore with much satisfaction that we can report on the years 2016 and 2017 as we contemplate just how far we have come as an institution. Because of the breadth and scope of services offered by the CWSA, departmental reports presented in this publication more than adequately represent the accomplishments of all major departments and reflect a satisfactory performance in every unit.

At the end of 2017 the CWSA had increased its total number of connections to 42,500 and will continue to



reduce the number of communal facilities and standpipes by providing free water connections to indigent customers all in an effort to promote improved public health.

Also during 2017, the CWSA capital project implementation increased to 2015 levels after a decline in 2016. During the past two years, the CWSA completed several important capital investments, including vehicle and equipment replacement, transmission pipeline replacement and upgrades along with additions to emergency electrical generation capacity, the rehabilitation of filtration units and fencing of storage facilities.

Any satisfaction with the enormous achievements of the CWSA has however to be tempered with prudent consideration of what could be seen as looming threats to the continued success story that is the CWSA. These include carefully planning for the retirement and replacement of long-serving senior employees and leveraging technology to assist with knowledge transfer from old to new employees. It is for this reason that priority is given to constant training at all levels in order to retain a competent and productive work force.

We should also acknowledge financial considerations associated with generating future revenue enough to achieve full cost recovery associated with critical measures and projects aimed at counteracting land degradation such as;

1. Wastewater management and disposal,
2. Sustainable solid waste management,
3. Water supply in the Grenadines
4. The rising cost of building in climate resilient infrastructure.

The CWSA will in 2018, implement jointly with the Electricity Company, VINLEC, a joint billing and collection system for solid waste customers in the Grenadines who are supplied with electricity and who do not yet have a potable water supply from the CWSA. This will go a long way in ensuring that payments are made on a timely basis consistent with the high level of service provided in the Grenadines.

Also in 2018, the CWSA will continue to embark on further important expansion and improvement projects and significant capital expenditure in both the water and solid waste sectors; the significant projects include:

- ***The replacement of vehicles, plant and equipment***
- ***The replacement of aging water meters.***
- ***The rehabilitation of the Majorca Inlet Pipeline***
- ***A further expansion of the existing SCADA system.***
- ***Implementation of Phase I of the Sandy Bay Water Supply Improvement Project***
- ***Investments in Geographic Information System (GIS) mapping software and equipment to aid both engineering and customer service departments.***

The CWSA will also continue to work with the various Government Ministries and Agencies in ensuring that **ALL** citizens in every community will have access to a pipe-borne water supply.



**ANOTHER VIEW OF THE MAJORCA TANK**



# ACCOUNTS & FINANCE REPORT

The CWSA's financial performance for 2017 will show a slight decline over the performance of the previous year. This is due mainly to a decline in revenue as a result of the loss of its largest single commercial customer, the Buccament Bay Resort and increases in a few key expenses. The Solid Waste Management Unit will however record a surplus on the books due mainly to expenditure control.

Net profit, after adjustments for foreign exchange fluctuations will result in a decline over 2016 due to the fact that unlike previous years, a foreign exchange loss will this year be charged to the net profit as a result of the Euro gaining strength against the US dollar and its adverse impact on the Authority's Euro loan portfolio. The age of the CWSA's vehicle and equipment fleet also

has a direct impact on financial performance, including operations and maintenance expenses and depreciation charges. Replacements of vehicles and equipment in 2017 resulted in increased depreciation expenses. The CWSA will in 2018 embark on an enhanced Fleet management initiative targeting especially the vehicle replacement policy and management with the main objectives being safety and cost control.

There still however remains a relatively high "receivables" balance due mainly to the Grenadines solid waste customers for outstanding payments since 2007. These customers account for 15% of total receivables while representing 10% of our customer base. Other significant categories of receivables include metered customers at 52% and Government accounts at 32%.

## STATEMENT OF COMPREHENSIVE INCOME (SOCI)

(Extracts from Audited Financial Statements)

	2017	2016	2015
<b>REVENUE</b>			
	\$	\$	\$
Water Income	18,193,094	18,518,791	17,952,014
Sewerage Income	784,314	639,229	649,236
Solid Waste Income	8,006,808	7,914,938	7,898,127
Other Water & Sewerage Related Income	536,960	522,748	1,057,222
Other income	203,325	280,968	185,668
<b>TOTAL REVENUES</b>	<b>27,724,501</b>	<b>27,876,674</b>	<b>27,742,267</b>
<b>OPERATIONAL COSTS</b>			
	\$	\$	\$
Production & Maintenance Costs	(15,476,932)	(15,406,276)	(14,115,709)
Selling, General & Administrative Costs	(10,354,631)	(10,126,377)	(11,085,726)
Foreign Exchange Gain (Loss)	(522,883)	29,858	960,235
<b>TOTAL OPERATIONAL COSTS</b>	<b>(26,354,446)</b>	<b>(25,502,795)</b>	<b>24,241,200</b>
<b>OPERATING SURPLUS</b>	<b>1,370,055</b>	<b>2,373,879</b>	<b>3,501,067</b>
Finance Charges	(240,126)	(393,487)	(428,789)
<b>SURPLUS FOR THE YEAR</b>	<b>1,129,929</b>	<b>1,980,392</b>	<b>3,072,278</b>





**Monique Hull**  
**Financial Controller**



**Charlene Edwards**  
**Accountant**



**Sonja Glasgow**  
**Assistant Accountant**



**Helen Wilson**  
**Assistant Accountant**

## STATEMENT OF FINANCIAL POSITION

*(Extracts from Audited Financial Statements)*

2017

2016

2015

### ASSETS

	\$	\$	\$
Current Assets	17,976,079	16,818,800	18,487,373
Property, Plant and Equipment	77,924,054	78,391,488	77,851,636
<b>TOTAL ASSETS</b>	<b>95,900,133</b>	<b>95,210,288</b>	<b>96,339,009</b>

### LIABILITIES AND GOVERNMENT EQUITY

	\$	\$	\$
Current Liabilities	6,908,945	6,144,582	6,300,511
<b>Borrowings</b>	<b>2,498,765</b>	<b>4,374,043</b>	<b>7,501,927</b>
Employee Benefits	97,249	141,902	157,287
Obligations to Customers	<b>52,960</b>	<b>0</b>	<b>78,652</b>
	<b>9,557,919</b>	<b>10,660,527</b>	<b>7,737,866</b>
<b>Government Equity</b>			
Contributed Capital	41,694,220	41,031,696	40,762,959
Accumulated Other Comprehensive Income	18,977,734	18,977,734	18,977,734
Retained Earnings	25,670,260	24,540,331	22,559,939
	<b>86,342,214</b>	<b>84,549,761</b>	<b>82,300,632</b>
<b>TOTAL LIABILITIES AND GOVERNMENT EQUITY</b>	<b>95,900,133</b>	<b>95,210,288</b>	<b>96,339,009</b>





**JOAN RYAN**  
**PUBLIC RELATIONS & MARKETING MANAGER**

**T**he Public Relations and Marketing Department (PRMD) continues to play a significant role in the overall effective execution of its mandate within the Central Water and Sewerage Authority (CWSA).

This department which was created in 2009, has as its central mandate; corporate image building, internal relations, corporate, stakeholder and internal communications and public education and awareness. In this current age of technology, electronic and social media, there is now an expanded role of a developing a real time communication and response to consumers and customers.

#### **CORPORATE RESPONSIBILITY & IMAGE**

During the two-year period under review, the CWSA/SWMU contributed significantly by way of donations and assistance. These were given to a wide range of community, sporting, health, educational and cultural sectors. Social assistance was also given to NGO's and disadvantaged customers and community individuals.

Consistent with our mission of maintaining a quality image, the CWSA in 2016 and 2017 engaged in repainting

## **PUBLIC RELATIONS & MARKETING REPORT**

of its corporate headquarters and Complex at Belair. In 2016, staff were also provided with new uniforms and safety gear and this was accompanied by vehicle and fleet renewal and refurbishing.

#### **STRATEGIC PLANNING**

In 2017, the PR&MD arranged for an update of the 2013-2018 Strategic Plan. This was accomplished by soliciting input from staff in 2016 where meetings were held at the district offices of the Authority. Data was gathered by way of questionnaire and large group discussions. The process was completed in 2017 with input from senior members of staff and the production of a final 2018-2023 working document.

#### **INTERNAL RELATIONS**

Four staff meetings were held in 2016 including the staff update at the CWSA 2016 Dinner and Awards and three quarterly meetings held in 2017. During these meetings staff were updated on matters related to the work of the

Authority, issues which affected staff along with presentations from individuals and institutions that benefited staff in many ways. Presentations included topics such as Renal Health, Risk



**NIS Executive Director, Stewart Haynes speaking to staff about Pension reform**

Management Services and Pension Reform. There were also presentations on various updates to company policy documents.

#### **COMMUNITY OUTREACH/DISCUSSION**

For the reporting period, there were requests for assistance in the form of gloves, garbage bags, tools and skip



placement at cleanup sites. Several communities on the Windward and Leeward side of this island were assisted in this regard.

Discussions in specific communities were facilitated by the Public Relations team with assistance from the Solid Waste Management team. Highlights of sessions held were as follows:

- *Planning for and execution of the Stakeholder Workshop for the Climate Proofing Sandy Bay Water Services Improvement Project in Sandy Bay.*
- *The department staff facilitated representatives from the Caribbean Leadership Project on behalf of the CWSA.*
- *A discussion was facilitated for a community organization at Rose Bank on waste management.*
- *Visit to Union Island by the PR team where we observed the waste management operations, viewed the state of litter on the island and held discussions with the Island Supervisor for solid waste.*
- *Representation and presentations were made in the Fancy, Owia and Sandy Bay Communities as the CWSA joined with the Adult and Continuing Education Division in educating community members on important sanitation issues.*
- *A Feature presentation at the SVG Hotel and Tourism Associations 2nd General Meeting on the topic. "Water Resource in SVG, Climate change in the SVG Context. The Role of the Travel and Tourism Industry in Water Protection and Conservation."*
- *Representation at the CXC Town Hall meeting on May 6<sup>th</sup> 2016 at the Peace Memorial Hall in Kingstown.*

- *Attendance at the Fisheries summer programme at Biabou, where a presentation conducted looked at "How improper disposal of waste can affect the marine environment and the fishing industry."*

## SOCIAL MEDIA/FACEBOOK

During the period under review, activity on the CWSA's facebook page grew tremendously as a major informational tool for disseminating news, notices and

also for garnering public opinion and receiving customer complaints. These included announcements of water outages to select communities, dry season precautions, information on major activities such as "Water Week", pictures of sponsored



A screenshot of the CWSA's Facebook page

community cleanups, pictures of work done during emergencies by the Authority's staff, solid waste collection disruption notices, videos of work done by the Authority. There was also weather forecast updates during the hurricane season and any changes in service level resulting from these events.

## ELECTRONIC MEDIA

The media outreach efforts were strategically geared towards reaching targeted stakeholder groups. One press conference was held in 2016 that highlighted specific issues within the Authority including Water week, White Goods collection and the then current dry season along with project updates.

Announcements continued to be sent routinely to radio stations to inform customers of outages for water and solid waste collection services for the 2016 & 2017 reporting periods. During 2016 the Authority successfully hosted a drive time live radio programme dubbed "Waste Matters" on NBC radio focusing on programmes and projects in the Authority.

Staff from the CWSA, SWMU and the Forestry



Department were utilized for this effort. Topics discussed were:

- *The Water Resource Management Unit*
- *Upper water shed management*
- *Waste disposal*
- *Waste collection*
- *Meter reading*
- *Waste management preparation for and during the carnival season*
- *Sewerage operations*
- *Issues that hampered effective garbage collection*
- *Disaster Management*
- *White goods collection*
- *Leaks*
- *Recycling*
- *CWSA's response to Tropical Storm Matthew*

#### PRINT MEDIA

The department continued to use the newspapers strategically for the placement of specific information such as tenders, articles and announcements such as the Solid Waste Unit twice annually white goods collection and derelict vehicle removal programme and the provision of a solid waste tip twice monthly.

#### SCHOOLS/EDUCATIONAL OUTREACH

Learning institutions continue to utilize the services of the CWSA. During the reporting period the following were achieved: Head Start Pre-school, Roman Catholic Primary, Pamenus Burke Primary, Sugar Mill Academy, Owia Government, Stem Summer Programme, Petersville Primary School, Kingstown Preparatory, Lauders Primary School, Windsor Primary School, SVG Community College, Spring Village Primary School, Diamond Government School, St. Vincent Grammar School and Bishop College Kingstown, were all institutions that received assistance whether by visits to landfills, water catchments, career fair activity, tree planting exercise, assistance for schools cultural activities, graduation assistance through trophies or individual student assistance for projects, conservation and waste management talks.



**Newly appointed chair, Mrs. Girlyn Miguel addresses staff at a quarterly staff meeting**



**A section of staff at the first staff meeting for 2016**

#### WATER WEEK 2016 & 2017

Both events were deemed to be highly successful. Included in the respective events were;

1. *Church Services - Staff attendance and participation at these events was commendable. The guest speaker for 2016 was Rev Adolf Davis who gave yet another inspiring message on team work and 2017 was Brother Monty Maule who spoke on the topic "Jesus Walked on Water".*



**Rev. Adolf Davis addressing staff at the 2016 Water Week Thanksgiving Service**



**2017 Water Week Thanksgiving Service's key speaker Brother Monty Maule**



**2. Primary schools visits for 2016 – The following schools (Greggs, Lauders, Diamond, New Grounds, Lowmans WD, Biabou Methodist, Marriacqua, Cane End, Evasham Methodist) all received visits from Verrol Henry, Varn Edwards, Horton Mc Cree, Shuna O'garro, Vincent Reid, Symantha George, Rae Anne Mc Dowall, Gailene Williams and Maurice Wright.**

**3. The CWSA Secondary School Career Fair 2016/17– These activities were successfully held and included participation from the following schools; St Joseph Convent Marriacqua, Mountain View Academy, Emmanuel High School Mespo, West St George, JP Eustace Memorial Secondary School, Intermediate High School, Buccament Bay Secondary and the Bethel High School**

**4. Staff Fun Day 2016 & 17 – Successful events, with the highlight being a cricket match between Phillip Dalrymple's five and Alf Phillips five at Rawacow in 2016.**

**5. Customer Appreciation and Exhibition Day 2016 – Customers were treated to an exhibition showcasing exhibits from the Solid Unit, Public Relations, Engineering, Customer Care and Victory Plumbing.**

**2017 Water Week Customer Appreciation Day**



**6. Media attention during water week included news items for the career fair by SVG TV and NBC radio. In 2017 there was also a presentation of the new CWSA e-Bill View facility, climate change issues and the importance of having adequate water storage.**

## STAFF AWARD/DINNER

The Authority's dinner and awards continues to be a high point in our internal relations focus. The 2016 gala was heightened with a black and white coloured theme for dress code and venue decoration. In 2017 along with the usual awards and recognition there was a jungle theme. Information on the awards given can be found in the Human Resources Report for both years.

## PRINCE HARRY'S VISIT TO DALLAWAY

The department coordinated the visit of His Majesty Prince Harry to the Dalaway Water Catchment plant as part of his tour of environmental sites on SVG. He was welcomed at the site by the Public Relations staff and Supervisor Varn Edwards and staff of the Dalaway plant.

## GRAPHIC DESIGN

The PRMD continues to evolve as we add more services to the department's functions. The department is now well served by graphic designer Rae-Anne Mc Dowall along with departmental support in the design and production of the CWSA calendars and Annual reports in house.







**YVETTE DANIEL**  
**HUMAN RESOURCES MANAGER**

### STAFF MATTERS

**A**t December 31, 2017 our total staff numbered 293. Of this 224 represent the Water and Sewerage Section and 69 from the Solid Waste Management Unit. Once again the situation remained relatively stable as far as staff stability was concerned.

### RECRUITMENT

#### **2016 & 2017**

*Ronneth Miller- Engineering Technician*

*Marlon Bobb-Chlorinator Operator*

*Dawayne Wilson-Chlorinator Operator*

*Ikara Cottle- Landfill Clerk*

*Joanna John-Administrative Assistant*

*Zinze Robertson-Resource, Recovery and Recycling Officer*

*Sherisia Lynch- Customer Services Clerk*

*Kimon John- Meter Reader*

*Casnel Bushay- Engineering Technician*

*Ian Nicholls – Engineering Technician*

### CONFIRMATION

Eleven (11) persons were confirmed in their posts upon successful completion of their probationary period.

## HUMAN RESOURCES REPORT

### PROMOTIONS/APPOINTMENTS

#### **2016:**

*Suzette Bradshaw-Administrative Assistant*

*Mikhail Akers- Gauging Technician*

*Veronica France- Senior Data Entry Clerk*

#### **2017:**

*Moses Culzac – Senior Pipefitter*

*Tyrone Oliver – District Supervisor*

*Emmerson Castello – Apprentice Pipefitter /Driver*

*Anthony Miller - Apprentice Pipefitter /Driver*

*Bradley Jackson - Pipefitter /Driver*

*Devon Huggins - Apprentice Pipefitter /Driver*

*Godwin Thomas - Apprentice Pipefitter*

*Keni-J Cato - Apprentice Pipefitter*

*Shuna O’Garro - Apprentice Pipefitter*

### RETIREMENT

#### **2016**

*Jonathan Abraham – Laboratory Technician – 37 years*

#### **2017**

*Anthony Ray Victory – Superintendent - 45 years*

*Daniel Jackson Senior, Pipefitter – 37 years*

*Kendal Ghent – Truck Attendant - 16 years*

*Jeffrey Sam – Compressor Operator*

*Maurice Wright – District Supervisor*

### DISCIPLINARY MATTERS

Several persons were verbally warned and written to about their performance and conduct during the year. Five (5) persons were dismissed and nine (9) persons were suspended without pay.

### RESIGNATION

Five (5) persons resigned from the organization during the



period under review.

## PERFORMANCE EVALUATION

This exercise was conducted for all staff members in 2016 and again in 2017.

## LABOUR RELATIONS

It was a quiet period with respect to labour relations. There was no major Industrial dispute.

## TRAINING

One hundred and twenty-two (182) employees also participated in the following training programs locally and overseas during the period 2016 and 2017;

### 2016

- |  |  |
|--|--|
| • <i>Caribbean Climate Outlook</i>   | • <i>Safety and Health</i>   |
| • <i>Fundamentals of Customer Service</i>  | • <i>Water Resource Management</i>                                 |
| • <i>Strategic Targeting Methodology</i>   | • <i>Wellness Workshop</i>   |
| • <i>Development of National Drought Management Policy and Drought Early warning signs</i> | • <i>Sustainable Solid Waste Management</i>                        |
| • <i>Meteorology and Hydrology Climpact workshop</i>                                       | • <i>Water Resource Management</i>                                 |
| • <i>Water Loss reduction</i>  | • <i>Climate Risk Management</i>                                   |
| • <i>Project Management</i>  | • <i>Water Treatment</i>   |
| • <i>Human Resources Summit</i>  | • <i>Operations and Maintenance of Equipment</i>                   |
| • <i>Water Transport and Distribution</i>  | • <i>Climate Monitoring Equipment Maintenance and Callibration</i> |
| • <i>River Modelling</i>   | • <i>Caribbean Climate Online Risk and Adaptation tool</i>         |
| • <i>Water Safety &amp; Sanitary Survey</i>  | • <i>Agriculture Climate Smart Agriculture Forum</i>               |
| • <i>Caribbean Risk Informaion Management</i>  | • <i>ABECAS EF and PI Asset Management Modules</i>                 |
|  | • <i>Adult literacy</i>  |
|  | • <i>Advanced FMECA</i>  |

## Methodology

- *Effective Leadership*
- *Non-revenue Water: Managing Real Apparent Losses in the Distribution System*
- *Delighting customers*
- *Effective Credit Management & Debt recovery*
- *Use of the DEWETRA Platform*
- *Caribbean Water and Waste Water Association Conference and Exhibition*
- *Operators Conference*

### 2017

- *Financial & Economic Challenges Symposium - SVG*
- *Inventory Management Workshop - St. Lucia*
- *Urban Solid Waste Management - Singapore*
- *Water & Sanitation - Jamaica*
- *Sustainable Water Management - Florida*
- *ComptTIA+ training and certification - SVG*
- *Ground water monitoring - Dominica , National Water Agency, Brazil*
- *Water Resources Management and*
- *Sustainable Production & Consumption - Guyana*
- *Workplace Safety and Health - a new reality for SVG*
- *Pipefitting Training at all levels*
- *SEBA Hydrometric Workshop - Germany*
- *IFRS - Continuing training*
- *Diploma in Hydrology - CIMH, Barbados*
- *On-site Wastewater Treatment & Disposal - Barbados*
- *Water Operation - CAWASA - Dominica*
- *Continuing Professional Development - Supervisory level and above*
- *Waste to Energy Workshop - ISWA - Germany*
- *Occupational Safety and Health - Compliance Training*
- *Pension Plan Assessment*
- *Customer Service Training - in-house groups, Local*
- *Adult literacy*
- *Chlorine Institute - Webinars*
- *CWWA conference*
- *Fighting Fraud in the private and Public sectors*



## SUCCESSFUL COMPLETION OF COURSES

Ossiah Stephen, Alanzo Dellimore, Gaileen Williams, Allie Wilson, Afika Shallow, Yesceka Glasgow successfully completed the University of the West Indies Open Campus Supervisory Management Certificate.

## EDUCATION GRANTS

### 2016

During the period, five (5) students who are children of employees were granted educational grants:

- Michel Creese
- Bryson George
- Kelsa Bartholomew
- Kerisha Lewis
- Arianna Jardine

And five (5) students received one time bursaries:

- Delisha Jack
- Dyonce Glasgow
- Delina Andrews
- Lauren Edwards
- Rae-Dawne Francis
- Laurel Shallow

### 2017

During the period five (5) students were awarded scholarships:

- Aliya Lyttle
- Gadiel Joseph
- Zinedine Lucas
- Ronnia Davis
- Gregory Boyea Jr.

And one student was awarded a one time bursary;

- Tia Lynch



**Recipients of the 2017 Scholarships & Bursaries along with their parents.**



**Recipients of the 2016 Scholarships & Bursaries along with their parents.**

## DEATH

The CWSA bade farewell to assistant storekeeper Randolph Bute who passed away on July 19<sup>th</sup>, 2017 after a brief illness.

.....





**BRIAN DASILVA**  
**ENGINEERING MANAGER**

### CAPITAL PROJECTS:

During the period 2016 and 2017, the CWSA engineering department undertook several significant capital projects. New construction took the form of new transmission pipelines, the expansion of the sewerage system and improvements to storage. These included the following:

- *Hermitage Water Supply Improvement Project*
- *Petit Bordel Mains Replacement*
- *Argyle International Airport Water Supply Project*
- *Montreal Mains Improvement*
- *Kingstown Sewer Extension*
- *Dalaway Transmission Main Upgrade project*
- *Jennings Re-sanding*
- *Belair Distribution Lines Upgrade Project*

#### **HERMITAGE WATER SUPPLY IMPROVEMENT PROJECT- PHASE II (BELLE ISLE STORAGE TANK)**

The main purpose of this project is to improve the quality and quantity of water available for supply to residents from Mt. Wynne to Richmond, especially after heavy and frequent rainfall events. This second phase involved the construction of a 500,000 gallons capacity reinforced concrete storage tank at Belle Isle Hill along with ancillary pipe works. The construction began in April 2015 with commissioning in June 2016. The project will impact the communities from Walliabou to Peter's Hope at a cost \$

## ENGINEERING DEPARTMENT REPORT

1.6 million.

#### **PETIT BORDEL MAINS REPLACEMENT**

The scope of this mini project involved the installation of approximately 530 feet of 6" ductile iron pipes. This rehabilitation and increase in resilience became necessary after a number of breaks in the existing pipeline were sustained as a result of land slippage dating back to the 2013 December floods. This work was done over a six week period in August and September of 2016 at a cost of \$59,000.

#### **ARGYLE INTERNATIONAL AIRPORT WATER SUPPLY**

The CWSA was contracted to install the water supply lines to the terminal building, the control tower, the fire station and the cargo facilities. During 2016 all pipe work to the facilities was completed with the exception of the fire pipeline to the control tower. The project was eventually completed and commissioned in February of 2017 at a total cost of \$525,000

#### **MONTREAL TRANSMISSION PIPELINE REPLACEMENT**

The Montreal water supply system is 50 years old and the main transmission pipeline requires re-routing to improve resilience to landslides and upgrading in size to cater for increases in demand.

The scope of this project involved the replacement of 5,000 feet of 6" steel pipes with 8" ductile iron pipes. Pipes provided to the CWSA after the December 2013 floods by the GOSVG through World Bank financing were utilized. The project budget was \$600,000.

The project commenced in June 2016 but was put on hold later in the year to facilitate other priority work. It was later restarted in February of 2017 and completed in October 2017. At the end of 2017 the project was 100 % complete at a cost of \$592,100.



### KINGSTOWN SEWER EXTENSION PROJECT – LEEWARD HIGHWAY

The Kingstown sewage collection system was extended from Bentick Square along the Leeward Highway to the CWSA Headquarters. The intention was to be able to capture residents from Old and New Montrose in the near future.

This work was scheduled to take advantage of the rehabilitation of the Leeward Highway and involved the installation of 2,800 feet of 8” and 6” sewer pipes and manholes. The installation and restoration was done during a seven month period, which commenced in January 2016. The overall cost of the project was \$495,500.

### DALAWAY TRANSMISSION PIPELINE UPGRADE PROJECT

The two major objectives of this project were (a) to reduce the vulnerability of a major segment of the 12-inch transmission main pipeline resulting from the December 2013 floods, and (b) increase the size of the pipeline to 16-inches in diameter in an effort to improve the system hydraulics, thus meeting the increased demand.

The project commenced in April 2017 with a budget of \$1.6 million and an anticipated duration of twelve (12) months. At the end of December 2017, work completed was measured at 65% and expenditure to date at \$920,000. The project was expected to be completed in 2018.

### JENNINGS TREATMENT PLANT RE-SANDING PROJECT

This project involves the replacement of layers filter media (sand) with specially sifted and graded granular material in order to continue to provide the required filtration efficiency at the plant.

Work commenced in late 2016 and continued in 2017. There were major delays experienced due to the unavailability of material however the project was eventually completed in December of 2017 at a cost of \$52,000

### THE BELAIR PIPELINE IMPROVEMENT PROJECT

The objective of this project is expected to

improve the hydraulics of a section of the Belair pipeline and involves replacing 1300 ft of very old 3” diameter galvanized pipeline with 4’ ductile iron pipes and the restoration of significant portions of the asphalt roadway at a budgeted cost of \$140,000. The project commenced in July 2017 and was completed in November of that year, at a cost of \$96,000.

### LABORATORY REPORT

In 2016 and 2017, the Laboratory staff continued its routine monitoring of the quality of water supplied by the CWSA.

This was done through a systematic routine island wide sampling of water

from the different sources utilizing a combination of field and laboratory tests. Tests include chlorine, pH and turbidity, all in conformity with the WHO/PAHO drinking water standards.

During 2016, the following laboratory equipment was replaced;

- *The membrane filtration apparatus*
- *An autoclave, a set of distillers*
- *A colony counter and hot plate.*



Tests being done at the CWSA's in house laboratory



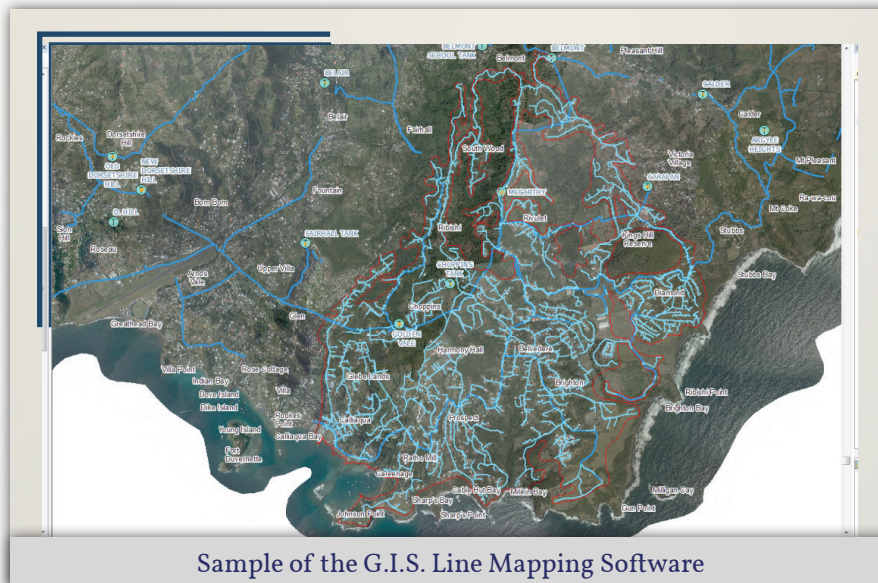
Staff engaged in re-sanding at the Jennings facility

This department was also involved in the monitoring, cleaning and re-sanding of the sand filters at Jennings and Dalaway.



## GEOGRAPHIC INFORMATION SYSTEM UNIT

The reporting period 2016 and 2017 marked the second and third years of operation of the newest unit within the Engineering Department, the Geographic Information System (G.I.S.) Unit.



Sample of the G.I.S. Line Mapping Software

The formation of the CWSA's spatial and geographic data infrastructure through the G.I.S Line Mapping Project remained at the top of the agenda. In 2016, the unit continued to work on phase two of the project; with the mapping of the smaller distribution lines in Area 1- Kingstown and Area 2- West and East St. George. This was further advanced in 2017 with mapping in Area 3-Marriaqua and Area 5- Georgetown-South.

The mapping phases are followed very closely by the validation phases characterized by data verification, field checks and modifications to the growing GIS database.

At the end of 2017, 120 miles of transmission mains were mapped from phase one of the project along with 381 miles of distribution lines in phase two. The mapping of Area 3- Marriaqua was substantially complete and Area 6- Georgetown-South is at 52% completion. The unit continues to grow and assume a position of relevance towards the growth of the institution.

## WATER RESOURCE UNIT

### ACHIEVEMENTS FOR THE REPORTING PERIOD

The Water Resource Unit has become the beacon for data gathering and dissemination of data to relevant agencies and Ministries at the local, regional and international

levels with particular interest in weather patterns and conditions for St Vincent and the Grenadines (SVG).

During the reporting period, varying tests of ground water levels, gauging, water production, early warning, flow measurements, climate/ weather and surface water levels were all done in an effort to track the development and determine the extent of weather conditions in SVG.

### DATA SHARING

AGENCIES/ MINISTRIES/ INDIVIDUALS/ ENTERPRISES	PARAMETERS	DEPARTMENT
Ministry of Agriculture	Rainfall	Statistical and Extensions, Forestry
Min. of Transport & Works	Rainfall, Water level & Discharge (Flow) Data	Chief Engineer & Consultants
NEMO	Rainfall, Water level	
CIMH	All Parameters	Data Accusation & Storage
Min. of Health	Well locations, GIS maps & assisted in land degradation and drought issues	Consultants
Regional Disaster Vulnerability Reduction Project (RDVRP)	All Parameters	Consultant
Mr. Herman Belmar	Bequia Groundwater data	Grenadines
SVG Metereological Services	Climatological data	Meteorological Services



CURRENT HYDROLOGICAL EQUIPMENT

AMOUNT	STATIONS	PARAMETERS
25	Rain Gauges	Rainfall
10	Water Level	Water Level
6	Climate/ Weather	Rainfall, Relative Humidity, Solar Radiation and time, Barometric Pressure, Wind Speed, Evaporation, Max & Min Temperature
21	Discharge	Flow Measurement
26	Groundwater	Temperature, Water level, Conductivity, PH, Turbidity
15	Water Production	Water Produced
6	Real Time (Early Warning)	River Level & Rainfall

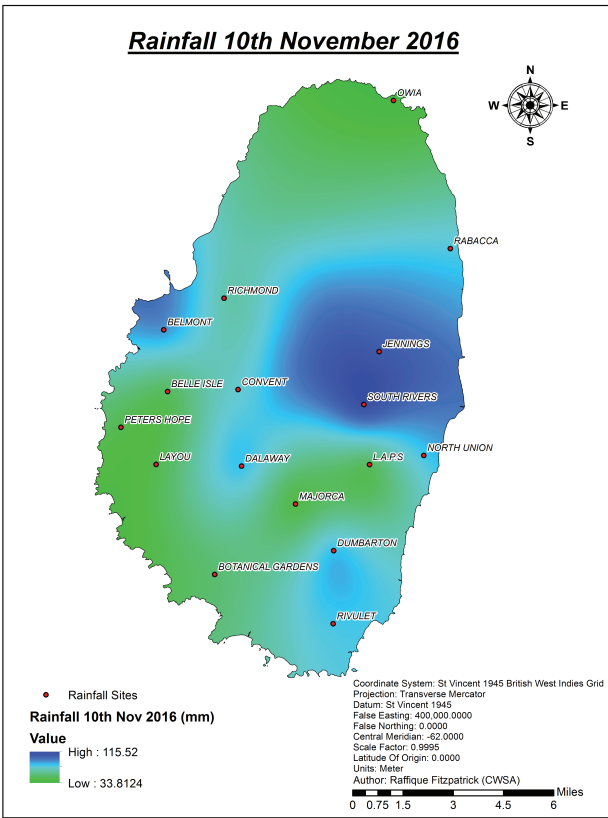
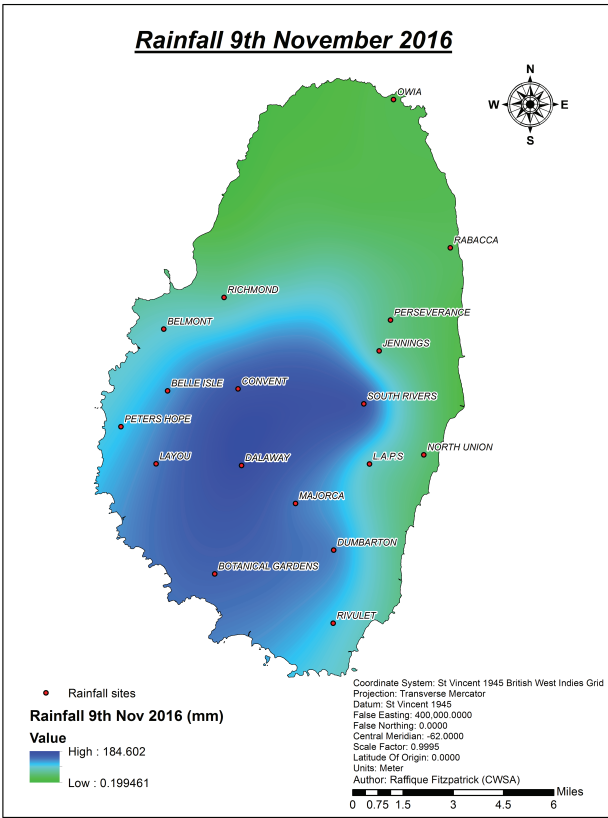
CURRENT HYDROLOGICAL NETWORK/SITES

From January to December, using the monitored parameters, the Unit recorded achievements such as:

- *Five hundred and thirty-five measurements/tests were performed in the Grenadines*
- *Eight hundred and seventy measurements/tests were performed on mainland St. Vincent*
- *Complied quarterly water production reports for 15 water supply systems*
- *Compiled and submitted the manual rainfall data collected from the Fancy, Montreal, Majorca and Hermitage raingauges, adding to the historical data compilation*
- *Analyses were carried out on various sand samples as well as raw water samples*

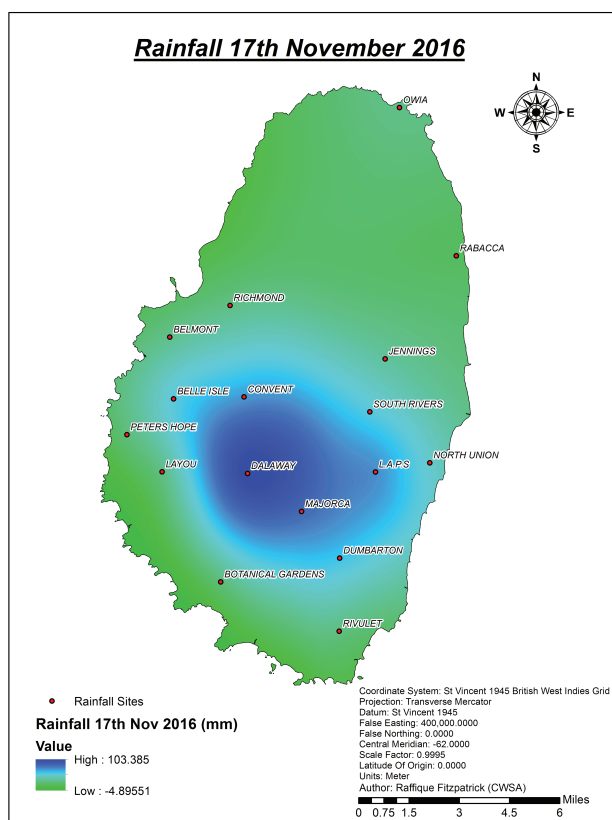
The CWSA’s hydrological network was able to measure and cover several unusual weather events during the period of November 2016. The following information and analysis is hereby presented for the records.

RAINFALL MAPS NOVEMBER 2016 TROUGH EVENT

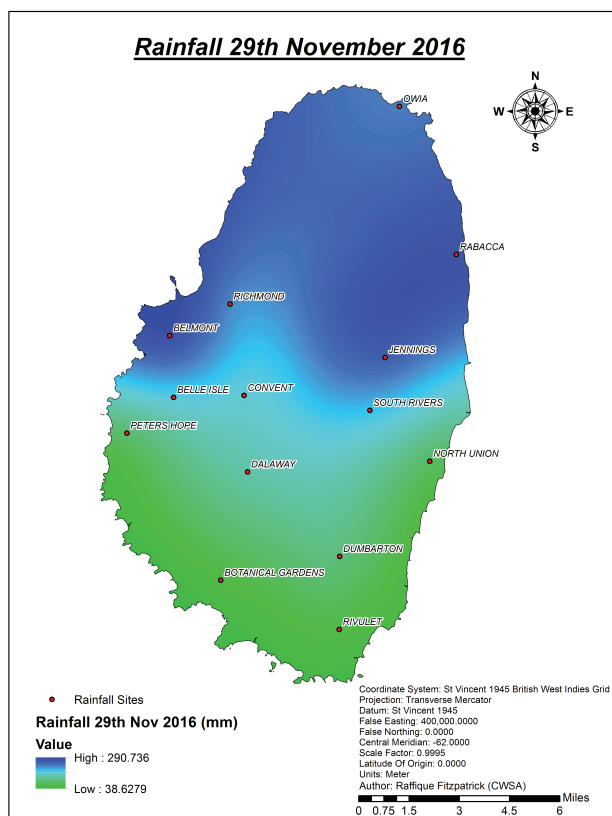




**Rainfall 17th November 2016**



**Rainfall 29th November 2016**



**NOVEMBER 2016 TROUGH EVENT RAINFALL DATA**

STATION	DAILY TOTALS 12:00 A.M. - 11:59 P.M.			
	9 <sup>TH</sup>	10 <sup>TH</sup>	17 <sup>TH</sup>	29 <sup>TH</sup>
Convent	169.4	72.5	64.9	164.0
Dalaway	182.5	81.2	102.8	135.2
Jennings	67.3	105.7	36.5	246.5
South Rivers	163.8	112.2	54.8	187.4
Owia	27.0	35.6	30.5	222.6
Rabacca CLIMO	32.3	77.4	20.0	268.1
Perseverance	54.5	-	-	-
North Union	49.0	79.8	48.5	94.1
L.A.P.S.	86.5	49.1	71.8	-
Majorca	141.1	43.4	81.7	-
Botanical Gardens	153.8	52.0	26.8	70.1
Rivulet CLIMO	104.9	79.5	28.8	72.5
Belmont	89.5	58.1	32.1	271.2
Dumbarton CLIMO	134.4	81.8	59.3	107.4
Layou	139.5	44.6	30.1	-
Peter's Hope	109.2	44.7	27.3	99.6
Richmond	67.8	65.7	30.3	217.8
Belle Isle CLIMO	123.4	48.4	53.4	171.9



**MELISSA MCKENZIE**  
**INFORMATION TECHNOLOGY**  
**MANAGER**

**D**uring the period 2016 and 2017, the CWSA's information technology department continued on its path of expansion as it fulfilled its mandate of not only providing continuous routine and unplanned maintenance of its growing hardware and software inventory, but also by leveraging new technology for the benefit and support of all departments of the organization.

## INFORMATION TECHNOLOGY REPORT

### 1.0 ROUTINE OPERATIONS

- *Data entry of meter readings, and bank and agency payments*
- *Preparation of monthly billings & postings*
- *Scheduled backups of servers*
- *Monthly backup of the file server*
- *Bill Printing*
- *Antivirus updates*
- *325 logged repairs & fixes*
- *Installations of new and replacement hardware and software*
- *Individual user support*

### 2.0 DEPARTMENTAL SUPPORT

(\*NEW DEVELOPMENTS)

#### PUBLIC RELATIONS & MARKETING DEPARTMENT

Updating of CWSA website, to include current



Staff of the Information Technology Department (L-R) - Ossiah Stephens, Joanna John, Veronica France, Randy Jackson, Yesecka Glasgow and Valmay Duncan



information on projects, public relations activities and e-bill service

#### ENGINEERING

SCADA - Installation and testing of new application software \*

Water Resource Unit – Installation of 2 - IP Phones and new computer equipment and software

GIS Unit – Installation of two replacement hard drives

O&M – Installation of a real time vehicle tracking application

#### CUSTOMER SERVICE

E-bill view service introduction \*  
E-bill service in-house training  
Electronic complaints management \*

#### ACCOUNTING

Service Management (SM) Invoice Transaction Number Changes \*  
Equipment & Facilities (EF) and Parts Inventory (PI) applications updated  
3- General Accounting Software  
Updates – Service Management SM, GL, EF

#### HUMAN RESOURCES

Implementation of electronic time and attendance system\*  
Installation and commission clock-in unit, modem card printer/digital signature pad  
Registration and training of users

### 3.0 FACILITIES IMPROVEMENTS

•*Replacement of A/C unit in the server unit*

•*Installation of A/C unit and de-humidifier in printing room*

•*Fiber optic Linkage of two main buildings at Montrose Complex\**

•*Installation of electrical generator at the Belair complex\**

### 4.0 ADMINISTRATIVE - POLICY & PROCEDURES

- Development and dissemination of a new System Development Life Cycle (SDLC) Policy
- Review of CWSA Disaster Recovery Plan

#### IT

Installation of HELPDESK software application\*  
Training of staff using HELPDESK

The screenshot shows the C.W.S.A. INFORMATION TECHNOLOGY HELPDESK interface. At the top is the CWSA logo and the text 'C.W.S.A. INFORMATION TECHNOLOGY HELPDESK'. Below this are 'Home' and 'Test' tabs. A message states: 'For help with an IT issue you are experiencing, please complete the form below.' The form includes the following fields: 'Summary:' with a text box and a red asterisk; 'Priority:' with radio buttons for 'High', 'Medium' (selected), and 'Low'; 'Description:' with a large text box; 'Category:' with a dropdown menu; 'Department:' with a dropdown menu; 'Location:' with a dropdown menu showing 'Main Office'; and 'Select File:' with a 'Choose File' button, 'No file chosen' text, and a 'Clear Attachment' link. A 'Submit' button is at the bottom of the form.

Screenshot of the new HELPDESK software's complaint logging form



**PHILLIP DALRYMPLE**  
**CUSTOMER CARE MANAGER**

**D**uring the past two years the CWSA has achieved significant accomplishments and improvements in its customer service offering. While there is a widespread misconception that the measurement of customer service is limited to the waiting times experienced in various institutions, at the CWSA, we consider and measure the broad spectrum of performance metrics that comprise the total customer experience. These metrics include;

1. *Water Quality*
2. *System Downtime*
3. *Information & Notices*
4. *Complaints management – new projects*
5. *Opening Hours*
6. *Standing in the waiting line*
7. *Meter Reading*
8. *e-Bill view*
9. *Rates*
10. *New connections & reconnections*
11. *Customer relations – training*

#### **WATER QUALITY**

During 2016 and 2017, the CWSA has worked systematically to reduce the incidence of delivering turbid (muddy) water supplied to the North Leeward area. This was achieved by a combination of operational improvements and the construction of significant storage improvements on the Hermitage system. This meant that the CWSA achieved PAHO/WHO drinking water quality

## **CUSTOMER CARE REPORT**

standards an average of 98% of the time. Main deviations from this were experienced only after prolonged heavy rainfall and mainly on the Majorca and Sandy Bay systems. Both these systems are currently being further upgraded.

#### **SYSTEM DOWNTIME**

During the two-year period under review, system downtime was reduced to 3% or lower on eight of our eleven systems. Downtime in all instances was related to either planned maintenance or adverse weather effects. No system downtime went beyond 24 hours during the period under review.

#### **INFORMATION & NOTICES TO THE PUBLIC**

Thanks to PR and Marketing department utilizing the social and electronic media, information on planned activities within the CWSA was disseminated in almost all instances at least one clear day in advance. The same one clear day metric was also achieved for all planned outages. All unplanned outages during the two year period were as a result of the effects of prolonged adverse weather conditions.

#### **COMPLAINTS MANAGEMENT**

During the period under review the main water supply complaints, consisted mainly of leaks, broken lines and blocked lines. The CWSA resolved on average 99% of its water supply services complaints within 48 hours. A similar 99% resolution rate was also achieved for solid waste management issues.

#### **OPENING HOURS**

As part of its customer service improvement initiatives over the past years, the CWSA has extended its opening hours for bill payment and customer queries from 8am daily to 7:30 a.m. This was done to facilitate the working public who are required to begin their jobs at 8am in Kingstown.





**Customer Care Senior Supervisory Staff (L-R) - Paula Mills, Elvin Jackson, Kurlene Anderson & Leslie Peters**

The 'after hours' service, introduced in 1993 was also recently extended by an additional hour from the previous 4 p.m. to 7 p.m. to 4 p.m. to 8 p.m., allowing for emergency services to be provided even at night when working conditions are non-ideal.

#### **THE WAITING LINE**

Although not the sole criteria for judging customer service, the CWSA's paying customers at its Montrose main office now average 1 minute and 15 seconds per person/transaction. Attempts will be made to continue to improve on this and also to promote internet and online bill payments.

#### **METER READING**

During 2016 and 2017, meter readings remained a routine data collection activity performed by a dedicated crop of meter readers. Meter readers now also provide early warnings to customers who may have leaks and whose consumption pattern is observed to be outside of the normal.

#### **BILLING**

Customer billing cycles were maintained 100% of the time during the period under review. Bill distribution in some parts of the mainland and in the Grenadines became problematic during the period due mainly to lack of action by independent distributors and also lack of postal addresses.

The department will work in 2018 with the marketing department to promote the use of the e-bill view feature along with internet/electronic bill payment.

#### **RATES**

The CWSA still boasts the cheapest water rates in the Caribbean area with a 24/7 service in 98% of the Country. These rates were last increased by an average of \$6.50 per month per household as far back as 2010. The CWSA however, also has responsibility for solid waste management and currently uses a significant part of its finances to subsidize what continues to be a loss generating operation.

#### **NEW CONNECTIONS/RECONNECTIONS**

During the period under review the CWSA was able to complete an average of 78% of its requests for new connections within one week of the customers paying for the service. On average, 50 applications for new connections were received per month. Reconnections continue to meet the 48 hours target 100% of the time, with an average of 81% being reconnected on the same day of payment.

#### **CUSTOMER RELATIONS**

In recognition of the importance of customer relationships and the customers' experience interacting with the CWSA employee, two one-week sessions of customer service training per year was made available to staff.

The CWSA also continues to resist any move to go the way of the automated telephone answering service, preferring instead the more efficient and intimate form of communication at our reception area.

During 2016, the department also constructed and outfitted a new customer comfort station at its headquarters at New Montrose.



# SOLID WASTE MANAGEMENT

## REPORT



**WINSBERT QUOW**  
**SOLID WASTE MANAGER**

**T**he Solid Waste Management Unit (SWMU) endeavors to keep evolving as a leading waste management entity in the region. During the period 2016 and 2017 the SWMU continued to explore new ways of improving the service offered to its customers, while at the same time, making investments

in upgrading its processes, equipment and personnel.

The SWMU's management information system, launched in 2015, continues to be crucial in providing regular quantitative operations information that is then used to identify areas of deficiencies and to formulate solutions to adequately address them. The hiring of personnel trained in environmental matters ensures that the SWMU has a complement of well-trained middle-management and administrative support staff that appreciates and uses an analytical approach to problem-solving.

During the period there were also significant collaborations with key organizations such as the Public Health Department, the Police Force and the St. Vincent Electricity Services (VINLEC) with the aim of strengthening the enforcement of waste management legislation and improving the collection of waste management fees in the Grenadines.

### 1.0 COLLECTION SERVICE

#### FLEET UPGRADE

The SWMU continued its fleet upgrade programme as it attempts to phase out the use of aging and problematic equipment.



**Two-post hydraulic jack being used**



As such a new 6 cubic meter Isuzu compactor truck was commissioned in August 2016 and two new collection trucks were ordered in 2017, while one additional compactor and one crane truck are scheduled to be delivered in early 2018.



**The newest addition to the waste collection fleet**

### WHITE GOODS

The white good collections service was performed as scheduled in February and September of 2016 and 2017 and a total of 1,615 and 1,753 cubic meters of material respectively were collected from communities throughout mainland St. Vincent . This programme started in 2011 and the graphic below compares the yearly volumes of waste collected since its inception. The data also shows that after a decline in the quantities received from 2011 to 2013, there has been a steady increase in white goods collected over the past four years.

### DERELICT VEHICLE CLEANUP CAMPAIGN

The Royal St. Vincent and the Grenadines Police Force, (RSVGPF), the Public Health Department and the CWSA Solid Waste Management Unit (SWMU) initiated a

partnership in June 2017 to address the matter of the improper storage and disposal of derelict vehicles



**Derelict vehicle being removed**

throughout the state. The programme started in Kingstown and is progressing outward area by area on both the Windward and Leeward sides of the island and to the Grenadines. As at the end of 2017 two hundred and fifty (250) notices were served and one hundred and seventy-two (172) vehicles removed.

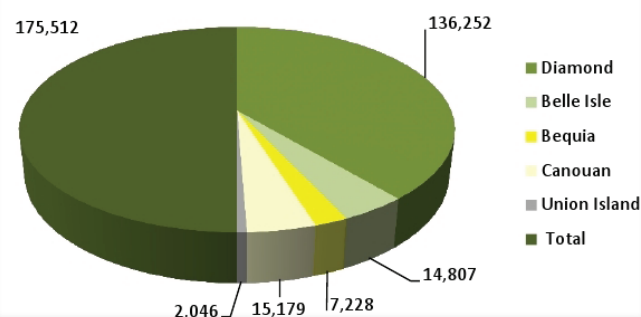
## 2.0 WASTE DISPOSAL

### WASTE VOLUME STATISTICS

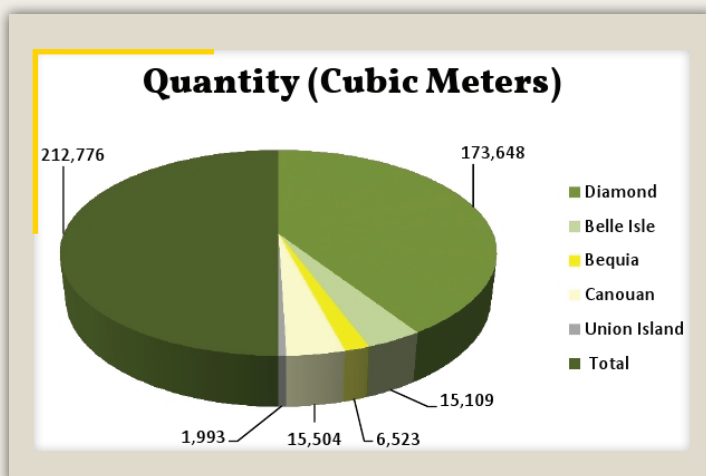
The five (5) waste disposal sites managed by the SWMU received a total of 175,512 cubic meters of waste in 2016 and 212,776 cubic meters 2017. Eighty percent of the total waste disposed in the state is delivered to the Diamond landfill. The graphic below shows the distribution of the waste disposed at the various sites by year.

### 2016

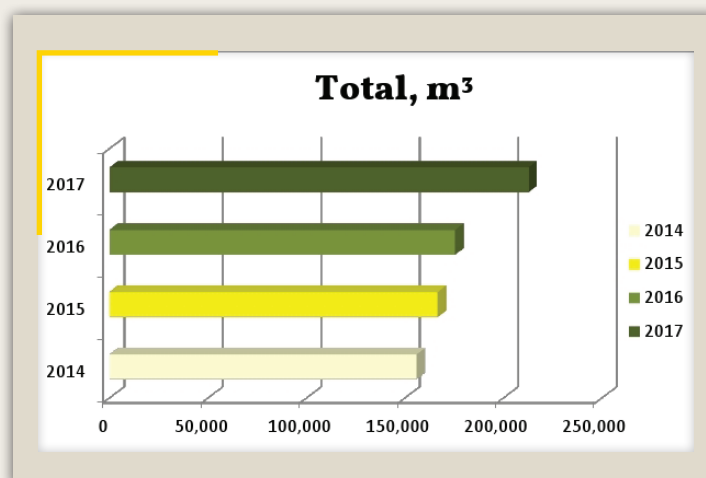
### Quantity (Cubic Meters)



2017



The total volumes for the past four (4) years show an increasing trend is the total waste disposed at our landfills



#### UNION ISLAND LANDFILL EXTENSION

Due to limited land space and the operational constraints of being close to the airport, A decision was made in September 2016 to reopen a section at the eastern end of the landfill with the



**Union Island Landfill**

hope that a new sustainable site, aimed at reducing the quantity of waste reaching the landfill, will be developed within the next three years.

#### NEW CATERPILLAR TRACK LOADER

In 2016, the SWMU purchased a new \$1.2 million Caterpillar 963 D track loader at the Diamond Landfill as part of its fleet replacement initiative. It replaced the fifteen year old Liebherr track loader that was purchased in 2001.



**Caterpillar Track Loader**

#### BELLE ISLE NEW CELL EXCAVATION

In 2017 a new \$190,000 project was undertaken to excavate a new waste cell at the Belle Isle landfill to accommodate the receiving of waste for the next five years. The project entailed the excavation and trucking of some 14,000 cubic yards (2,342 truckloads) of material and the preparation of a 600 ft granular access road. The cell became operational in November 2017.

### 3.0 WASTE DIVERSION AND RECYCLING

In January 2016, the CWSA hired a trained Resource Recovery and Recycling professional, Zinze Robertson to oversee and manage Reduce, Reuse, Recycle, and Recover initiatives. The CWSA/SWMU currently diverts volumes of green waste delivered to the landfill to recycling activities of compost, woodchips and charcoal production. Scrap metal is also stockpiled at the Diamond landfill site for processing and export.



#### 4.0 FLEET & EQUIPMENT MAINTENANCE

The CWSA's maintenance department has been transformed into one of the most efficient maintenance operations in St. Vincent and the Grenadines by upgrading its personnel and equipment and by effectively integrating preventative maintenance measures and fleet management technology into its daily activities.

In 2016, Chief Mechanic Jaiwani Saywers completed training in Failure Mode Effects and Criticality Analysis (FMECA) in Trinidad and Tobago. Additionally, several



**(L-R) Chief Mechanic, Jaiwani Sayers, Mechanic Kelroy Walters and Operations Engineer, Michael Creese**

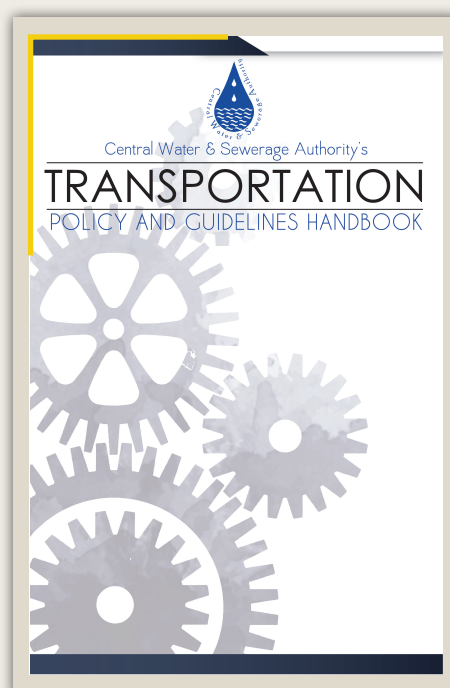
key pieces of equipment were procured to reduce service times, improve worker safety and increase the level of accountability related to the issuance and

use of consumables at the garage. Included among these were, a two post vehicle hoist capable of lifting 9 tons, a low profile transmission jack and oil and fuel dispensing systems.

Another significant accomplishment during the period was the drafting and implementation in August 2016 of a transport policy for the CWSA. The transport policy contains procedural guidelines for all drivers, operators and occupants of the CWSA's vehicles and heavy equipment to ensure that proper

priority is placed on safety and accountability.

The material contained in the policy was adopted from the best practices of other local and regional utilities and includes provisions such as equipment inspection before use, safe driving, the reporting of accidents, authorization procedures and parking and securing of vehicles. Training in the interpretation and use of the policy was conducted with all supervisors and drivers in late 2016.



**Transportation Guidelines & Policy**



# THE YEARS IN PICTURES



2016 FITNESS CLASS ANNIVERSARY WORKOUT



2016 FITNESS CLASS ANNIVERSARY WORKOUT



2016 UNION AGREEMENT DELIBERATIONS



2016 UNION AGREEMENT DELIBERATIONS



2016 WATER WEEK THANKSGIVING SERVICE



2016 WATER WEEK THANKSGIVING SERVICE



2016 WATER WEEK THANKSGIVING SERVICE



2016 WATER WEEK THANKSGIVING SERVICE





2016 ANNUAL STAFF AWARDS AND DINNER



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2016 ANNUAL STAFF AWARDS AND DINNER



NIS REPRESENTATIVE AT QUARTERLY STAFF MEETING



NIS CEO AT QUARTERLY STAFF MEETING





2017 WATER WEEK THANKSGIVING SERVICE



2017 WATER WEEK THANKSGIVING SERVICE



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2017 WATER WEEK THANKSGIVING SERVICE



2017 WATER WEEK SCHOOLS' CAREER FAIR



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2017 STRATEGIC PLANNING SESSION



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2017 STRATEGIC PLANNING SESSION



2017 WORLD ENVIRONMENT DAY TREE PLANTING



2017 WORLD ENVIRONMENT DAY TREE PLANTING



2017 WORLD ENVIRONMENT DAY TREE PLANTING



FORMER CEO OF CWSA, HON. DANIEL CUMMINGS, PRMM JOAN RYAN & SWM WINSBERT QUOW AT THE CWWA CONFERENCE IN GUYANA





## *Our Mission Statement*

To consistently provide all consumers with the highest quality water supply, sewerage and solid waste management services in an efficient and affordable manner.



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