



WRA

ANNUAL REPORT
2019 - 2020

WATER RESOURCES AUTHORITY

Jamaica's Water ... Every Drop Precious



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**Water
Resources
Authority**



**Water
Resources
Authority**

VISION

“To have a world class organization providing efficient and reliable services to stakeholders for facilitating integrated water resources management in Jamaica.”

MISSION


To secure the sustainability of Jamaica’s water resources and the resilience of the nation to droughts and floods through;

- ◆ *Effective water resources planning;*
- ◆ *Rational water resources allocation &*
- ◆ *Conservation and protection;*

with the support of a cadre of well trained, highly motivated, dedicated staff and empowered Jamaicans.

CORPORATE DATA

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 Water Resources Authority of Jamaica

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**Water
Resources
Authority**

(An Agency of the Ministry of Economic
Growth & Job Creation)

ABOUT US

The Water Resources Authority (WRA) is an Agency of the Ministry of Economic Growth and Job Creation. It was established by the Water Resources Act, 1995 and is responsible for the regulation, protection, and controlled allocation of Jamaica's water resources. This is achieved through:

- ◆ **Resource Monitoring** - The WRA monitors stream flows, ground water levels, water quality, abstraction and well drilling across the island, and provides data to all stakeholders through its web-enabled database.
- ◆ **Resource Assessment-** Determination of the availability of water resources to reliably meet all demands.
- ◆ **Allocation of Resources (Licensing)** - The WRA secures the sustainability of the water resources through a system of permits and licensing for the drilling of wells and the abstraction and use of surface and groundwater resources.
- ◆ **Water Quality Monitoring-** WRA collaborates with other water sector agencies in the monitoring and assessment of pollution and identification of threats to the resource.
- ◆ **Support to Development Approval Process** - The WRA reviews development applications and Environmental Impact Assessments (EIAs) and comments on the risk to water resources from the proposed treatment and disposal of sewage and other wastes, and on possible impacts of flooding by or on the development.
- ◆ **Flood Warning** - The WRA, working with the ODPEM, has established one real time flood warning system in the Rio Cobre Basin and several community flood alert systems across the island in an effort to reduce the threat to lives and property.
- ◆ **Public Education** - Through its Documentation Centre, and website, the WRA provides information to all stakeholders including students, consultants and the general public regarding hydrology, hydrogeology and water resources of the island. The Authority also celebrates special days (World Water Day), and participates in exhibitions to increase public awareness of water issues.





CORPORATE GOVERNANCE

The Board consisting of nine (9) members was appointed by a Cabinet Decision of April 12, 2016 for three (3) years. Upon expiration of its tenure in April 2019, the Most Honorable Andrew Holness, Minister of Economic Growth and Job Creation, extended the tenure of the Board to July 30, 2019, to allow for a review of its operations. The Board was reappointed en bloc on September 30, 2019 to September 22, 2022. The members appointed were as follows:

- ◆ Dr. Parris Lyew-Ayee - Chairman
 - ◆ Ms. Stephanie Abrahams
 - ◆ Mr. Michael Brown
 - ◆ Mr. George Grant
 - ◆ Ms. Georgia Hamilton
 - ◆ Ms. Novlette Howell
 - ◆ Ms. Allison Rangolan
 - ◆ Ms. Nadeen Spence
 - ◆ Prof. Michael Taylor
- The Board convened on the third (3rd) Monday of each month for ten (10) months in the 2019-2020 financial year. Its primary responsibilities were to;
- ◆ Ensure the efficient and effective management of the WRA;
 - ◆ Develop adequate information, control, evaluation and reporting systems;
 - ◆ Develop specific and measurable objectives and performance targets;
 - ◆ Advise the Minister on matters of general policy and
 - ◆ Consider applications for licenses to abstract and use water as well as permits to drill wells.

Two (2) committees were constituted with support from members of staff and one coopted member- Ms. Cheyanne McClarthy.

TABLE 1: BOARD COMMITTEES

NAME OF COMMITTEES	RESPONSIBILITIES	MEMBERS
Finance & Audit	To review and ensure that the WRA has internal controls and mechanisms for good financial practices and financial integrity.	<ul style="list-style-type: none"> • Ms. Georgia Hamilton- (Chairperson) • Mr. Peter Clarke • Ms. Hermine Downer • Mr. George Grant • Ms. Novelette Howell • Dr. Paris Lyew-Ayee • Ms. Cheyanne McClarthy • Ms. Allison Rangolan
Technical Advisory	To provide oversight for water resources planning and ensure the responsiveness of the WRA to developments and threats to Jamaica's water resources.	<ul style="list-style-type: none"> • Ms. Allison Rangolan (Chairperson) • Ms. Stephanie Abrahams • Mr. Michael Brown • Mr. Peter Clarke • Dr. Parris Lyew-Ayee • Mr. Geoffrey Marshall • Prof. Michael Taylor • Ms. Nadeen Spence • Mr. Michael Wilson

**TABLE 2: ATTENDANCE RECORD**

DIRECTORS	BOARD MEETING (N= 10)	FINANCE COMMITTEE (N= 5)	TECHNICAL COMMITTEE (N=5)
Dr. Parris Lyew-Ayee (Chairman)	9	4	4
Ms. Stephanie Abrahams	7	3	N/A
Mr. Michael Brown	9	N/A	4
Mr. George Grant	9	4	N/A
Ms. Georgia Hamilton	7	5	N/A
Ms. Novelette Howell	10	5	N/A
Ms. Allison Rangolan	10	5	5
Ms. Nadeen Spence	8	N/A	4
Prof. Michael Taylor	7	N/A	3

KEY

N = Number of meetings

N/A - Director is not assigned to Committee

MANAGEMENT TEAM

A four (4) person team had responsibility for the management of the Authority. They are:

1. Mr. Peter Clarke, Managing Director
2. Mr. Michael Wilson, Deputy Managing Director
3. Ms. Hermine Downer, Director of Finance & Accounts
4. Mrs. Gail Williams Lewis, Director of Administration and Human Resources



CHAIRMAN'S REPORT

It has been another busy year for the Water Resources Authority, with its first full year under a new leadership structure, with the new Managing and Deputy Managing Directors now fully settled in their roles. The Board continued to monitor and oversee the running of the organization and its governing principles.

This year the Board considered:

- The Water Resources Act- identifying several areas that will require updating and amendments such as powers to be given to the Board to be able to make administrative orders, rules and by-laws, issue enforcement orders, stop orders, cease and desist orders, to criminalize or sanction Abstractors who breach the Act and the implementation of an Investigative Branch. We also looked at changes in dealing with chronic late renewals and poor compliance with the conditions of licenses previously issued.
- Water Resources Protection - The Board was responsive to critical areas of national concern regarding water resource protection. We were involved in discussions and deliberations on the Cockpit Country, looking at data for comparable areas across Jamaica - both in terms of limestone hydrogeology as well as active mining areas' hydrological impacts, as well as detailed hydrological records for the region. We were also very involved with looking at aquifer protection for the Lower Rio Cobre Hydrologic Basin, particularly as it relates to the aquifer protection zone and the planned developments at Bernard Lodge. Here, we redefined the aquifer protection zone from a 'no-build' zone to a 'care-build' zone, taking into consideration improvements in data collection and monitoring technology since the designation of the aquifer protection zone almost 2 decades ago, as well as the very stringent conditions for developments we imposed for the planned developments.
- We are advocating for more efficient water usage, including the inclusion of artificial recharge points in the development, as well as the incorporation of green technologies in the design and building of homes there.

Internally, we have been conducting a massive data cleaning and updating exercise, allowing for faster and more accurate information to be accessed. We are also completing the development of a Water Quality Atlas for Jamaica, which is long overdue, but will be well worth the wait. The organization continues to push, with the Board's

endorsement, a restructuring and reclassification exercise for all employees, taking into consideration the fact that this has been identified by the Board as a top risk to the Authority in terms of its ability to recruit and retain top talent to the organization, and the related effects on staff development, internal growth, and succession planning.

Our former Managing Director, Mr. Basil Fernandez, was the recipient of the RJR Gleaner Honour Award for Science and Technology, for his continued advocacy for water protection and the use of data to drive informed policies. The WRA continues to owe Mr. Fernandez a great debt for all he has done to both the WRA and the water sector in general, and we congratulate him.

The Board continues to enjoy a high attendance rate among Directors, with very high levels of participation. This is due to the strong role of Management in coordination and effecting actions that move the organization forward. It is also a testament to the commitment of Directors to the organization we serve. We commend Management and Staff for another successful year. As we enter a new financial year with all-new challenges well outside our control, the WRA remains committed to its mission, and will not compromise its service delivery or focus on continuing to protect Jamaica's water resources.

DR. PARRIS LYEW-AYEE
Chairman



MANAGING DIRECTOR'S REPORT

As a small island developing state, Jamaica is vulnerable to, and oftentimes directly exposed to, varying disasters that may impact water resources management. These impacts may affect the quantity and quality of water resources, or they may impact the ability to investigate and assess water resources. Whatever the case may be, the Water Resources Authority (WRA) must respond, and adapt if necessary, in order to fulfill its mandate.

While there were no direct hits from any hurricanes during the period under review, Jamaica faced a serious climatological extreme at the other end of the weather spectrum, that being a severe drought across a vast section of the island. Quite naturally, it was alarming to know that rivers and streams in the normally wet parish of Portland were at their lowest for some person's lifetime. On the other hand, on the other end of the island, Westmoreland was unseasonably wet. This reversal in weather plays out the prediction regarding to impacts of climate change and apparently is now to be expected at regular intervals. WRA, through its routine operations, has been able to gather the requisite data, so that over time the trend of climate change impact on water resources can be assessed, and eventually normalized.

Then, in the last quarter of the year, the virus associated with the global pandemic, COVID-19, began a purposeful stride across the island. The standard responses including social distancing, coupled with curfews and community lock-downs clearly presented challenges to the WRA, especially with the main

activities of data gathering & assessment, as well as with water resource investigations. At the onset of the pandemic, prudence dictated that discretion should be the better part of valour. Thus, investigative activities were immediately scaled back, and protocols for dealing with emergency investigations were drawn up and put into place. It is anticipated that that with refinement of protocols, the investigative activities may proceed, while not with the usual normalcy, but at least in a manner that is responsive to maintaining normal operations.

Fortunately, the WRA has been embarking on projects that enhance the ability to monitor rivers remotely, defining the new norm for stream-flow measurement, as they pilot the way forward in a world where advanced technology should be at the forefront of operations. Thus, in many instances, the need for on-the-spot- field observations can eventually be minimized, but practically may never be eliminated. These projects include the Yallahs/Hope River Watershed Management Area Project and the Rio Cobre Flood Early Warning Project. In both cases, the hydro-meteorological

network has been improved to the extent that data gathering occurs remotely, and in real-time. Significantly, both projects cover very important watersheds that are presently detrimental to continued and sustainable water provisioning for two of Jamaica's largest urban centers.

In response to the drought, the WRA has been an integral member of the Drought Management Council, largely in an advisory capacity, as policies and action plans are being devised for roll-out. It is anticipated that future responses to drought will be timely and effective. Additionally, the WRA is mindful of its responsibility to assess water resources, apportion same through its established operational procedures in a manner that allows for, as best as possible, the (re)allocation of active and reserved resources in the most useful and sustainable manner. Since the height of the past drought, there also has been the publication of a Surface Water Bulletin that provides an analytical snapshot of selected rivers island-wide. It is hoped that this will be accepted as another tool to be used for strategic planning and development.



In order to expand upon the ability to provide water resources assessments that lead to meaningful contribution to strategic planning and development, another exercise that the WRA has been actively pursuing is the preparation of an update to the Water Resources Development Master Plan. At the end of the year, the WRA team had completed the water balance assessment tool and had prepared a draft of the water resource balance of the island's Watershed Management Units, including projections for climate change impacts. While this update has been gestating for some time, the WRA is pleased to know that in short order a resourceful manual will be available to respond to the hydrological interests of planners and developers.

Additional studies that have been done include assessments of the Cave River and Blue River sinks, that now provide more information on groundwater flow dynamics in parts of the Dry Harbour Basin, contributing to improved knowledge of the Rio Bueno - White River Watershed. Ongoing study of the Aquifer Protection Zone in S.E. St Catherine will contribute to decisions regarding planned development in the area. In another part of the island, the recent study of the Black River Hydrologic Basin

has provided invaluable knowledge in support of the Essex Valley Agricultural Project that is being promoted by the National Irrigation Commission.

Other meaningful partnerships have been reignited with agencies and institutions that share the common goal with the WRA of environmental sustainability within the various ecosystems across Jamaica.

- ◆ The MET Service (Jamaica) signed a Memorandum of Understanding (MoU) with the WRA that will encourage data sharing in a more timely manner so that there can be quicker factoring of climatological data into overall hydrological assessments.
- ◆ The WRA reconvened the Bottled Water Committee that pulled together various interests in the management and monitoring of the bottled water industry, who then drafted the 'Packaged Water Guidelines' to be issued to current and potential purveyors of bottled water.
- ◆ The World Meteorological Organization (WMO) now formally recognizes the WRA as the National Hydrological Advisor.

The day-to-day operations of the WRA have proceeded as normal: permits and abstraction licenses have been issued where feasible; resource monitoring, planning and investigation have been carried out. Generally, the compliance of abstractors to the conditions of licenses issued has been high; there was a notable downturn in the last quarter, largely as a result of COVID-19. However, the newly instituted Water Abstraction Charge (Volume Based Fee), in this first year, has been successfully implemented, and the response from abstractors demonstrate that it is fully accepted. Earnings are expected to aid with the realization of otherwise unfunded projects and activities sanctioned by our parent ministry.

As we move forward into the coming year, we anticipate that some resolution will be brought to the vexing situation of low salaries that continue to affect staff morale. We can already see from the WRA response to the current global pandemic that our staff demonstrate a resilience of spirit, and a selflessness of character. These attributes drive us forward as we show by word and deed that we take very seriously, the slogan of the WRA, which is "Jamaica's water...every drop, precious".

PETER CLARKE
Managing Director



BOARD OF DIRECTORS



DR. PARRIS LYEW-AYEE



STEPHANIE ABRAHAMS



MICHAEL BROWN



GEORGE GRANT



GEORGIA HAMILTON



NOVELETTE HOWELL



ALLISON RANGOLAN



NADEEN SPENCE



PROF. MICHAEL TAYLOR



FINANCIAL SUMMARY

The 2019/20 financial year was a fairly good year for the Water Resources Authority (The Authority). There was a two percent (2%) increase in income and a surplus of sixty-two point six million dollars (\$62.6M) in spite of a sixteen percent (16%) decrease compared with seventy-five million dollars (\$75M) realized in the previous year.

The income and expenditure statement for the 2019/2020 financial year was as follows:

TABLE 3: INCOME EXPENDITURE STATEMENT

	2020 \$	2019 \$
Income		
Subventions	217,014,096	212,502,750
Other operating income	71,433,008	70,751,535
	288,447,104	283,254,285
Expenditure		
Expenses	(225,818,100)	(208,083,515)
Surplus/ (Loss) for the year	62,629,004	75,170,770

Total comprehensive income was severely reduced due to the impact of the measurement loss on the Authority's Defined Benefit Plan moving from twenty-three point one million dollars (\$23.1M) in 2018/19 to sixty-three point one million dollars (\$63.1M) in 2019/20.

TABLE 4: OTHER COMPREHENSIVE INCOME

OTHER COMPREHENSIVE INCOME:		
Other comprehensive income(loss) not to be reclassified to income in subsequent period:		
Re-measurement gain on defined benefit plan	(63,075,000)	(23,167,000)
	(63,075,000)	(23,167,000)
TOTAL COMPREHENSIVE (LOSS)/INCOME FOR THE YEAR	445,996	52,003,770

Operating expenses increased by eight point five percent (8.5%) year on year in spite of the efforts made to improve operating efficiencies. Repair, maintenance and communication costs accounted for the major areas of the increase expenditure. This expenditure was necessary and intentional, aimed at improving the conditions of the hydrological stations used for data gathering and to improve efficiencies for planning to mitigate against the harshness of climate change. Additionally, some effort was made to improve the condition and appearance of the office building and its environment. This activity still continues but the improvements made have already uplifted the morale of the staff which will allow for impactful delivery of hydrological services to the people of Jamaica.

INTERNATIONAL ACCOUNTING STANDARD (IAS)

The Authority has adopted the amendments to IAS 19, Employees Benefit. The impact of this amendment is that it requires additional disclosures in the Financial Statements. The disclosures have been recognized in the Statement of Profit or Loss and other comprehensive income and the Balance Sheet.



This standard requires the Authority to undertake an annual Actuarial valuation of the fund and report the surplus or deficit on the Balance Sheet, as well as report on the pension costs based on the present assessment of the fund.

The pension cost adjustments are seen in the expense schedule of the financial statements as well as in the Statement of Profit or Loss and Other Comprehensive Income under the heading “Other Comprehensive Income.”

This standard recognizes the fact the Authority operates a Defined Benefit Plan and

any future shortfall arising in the plan’s ability to meet its obligations will have to be met by the Authority. Therefore, at a glance, one can now see from the financial statements, the future risk to the Authority from the Fund.

This reporting requirement has affected the Authority’s numbers significantly.



PERMITS AND LICENSES

For the 2019-20 financial year, the Board deliberated on two hundred and thirty-one (231) applications. Ninety-five (95) were for applications to abstract and use water, seventy-two (72) were for Permits to drill wells and sixty-four (64) were for the renewal of existing Licenses. The Board also considered ten (10) applications for Well Drillers Licenses.

Two hundred and twenty-five (225) applications were reviewed within sixty (60) days as stipulated by the Water Resources Act, 1995. Six applications were pending after the applicants failed to provide additional documentation as requested.

TABLE: 5 SUMMARY OF APPLICATIONS

SUMMARY OF APPLICATIONS FOR 2019-2020				
TYPES OF APPLICATIONS				
APPLICATIONS RECEIVED	NEW LI-CENSES	PERMITS	RENEW-ALS	TOTAL
	95	72	64	231
Applications processed within 60 days of receipt	90	71	64	225
Licenses/ Permits granted	88	70	64	221
Applications received in 2018-2019	48	28	216	292
Volume Granted (cubic meters per day)	309,503	-	307,567	617,070
Applications Refused	2	1	0	3
Applications Pending	5	1	0	6
Well Drillers Licenses	10	-	-	10



ALLOCATION OF WATER RESOURCES

At the end of the 2019/ 2020 financial year, there were seven hundred and seventy-three (773) valid licenses across the island. This represents a one percent (1%) increase from previous financial year, at which time there were seven hundred and sixty-seven (767) licenses. Eighty-three percent (83%) of these licenses were from the groundwater sources, representing a volume of 2.2Mm³/day or 804.9 Mm³/Yr. The remaining seventeen percent (17%) were from surface water sources for 4.6 Mm³/day or 1695.7M m³/year.



Figure 1: Volume of water allocated

Approximately forty-two percent (41.64%) of water resources allocated, were for non-consumptive uses such as hydropower, recreation and aquaculture as illustrated in Figure 2. Allocation for domestic uses accounted for twenty-four percent (24%) and agricultural uses accounted for twenty-seven percent (27%). The remaining seven percent (7%) were allocated for industrial uses in manufacturing, distilleries and tourism.

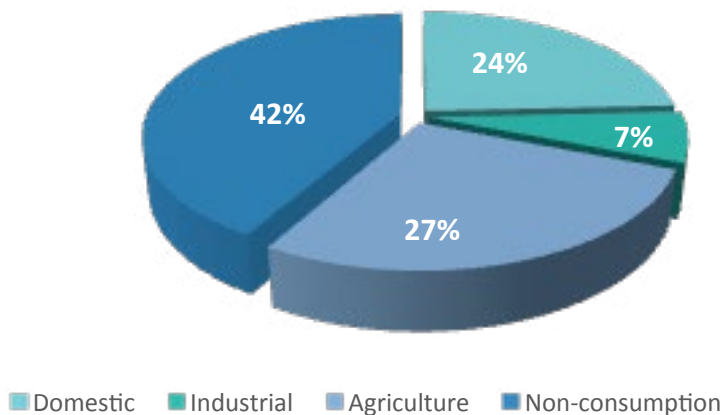
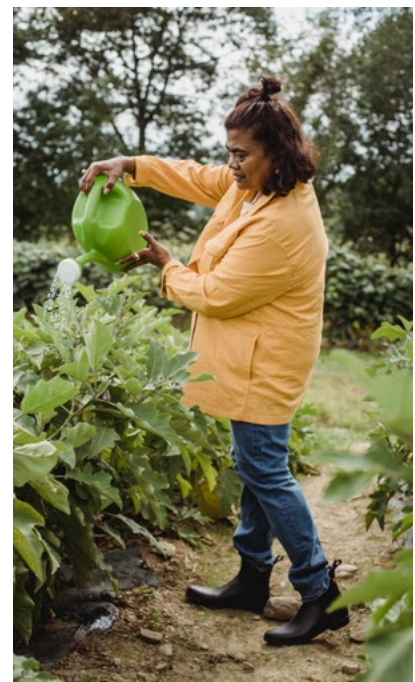


Figure 2: Water allocated per sector

The distribution of new licenses per basin is illustrated in figure 3. The hydrobasins with the highest volume allocated were the Rio Cobre (St. Catherine) and Kingston (Kingston and St. Andrew).





RENEWAL, NEW AND TOTAL VOLUME ALLOCATED (M3/DAY) APRIL 2019- MARCH 2020

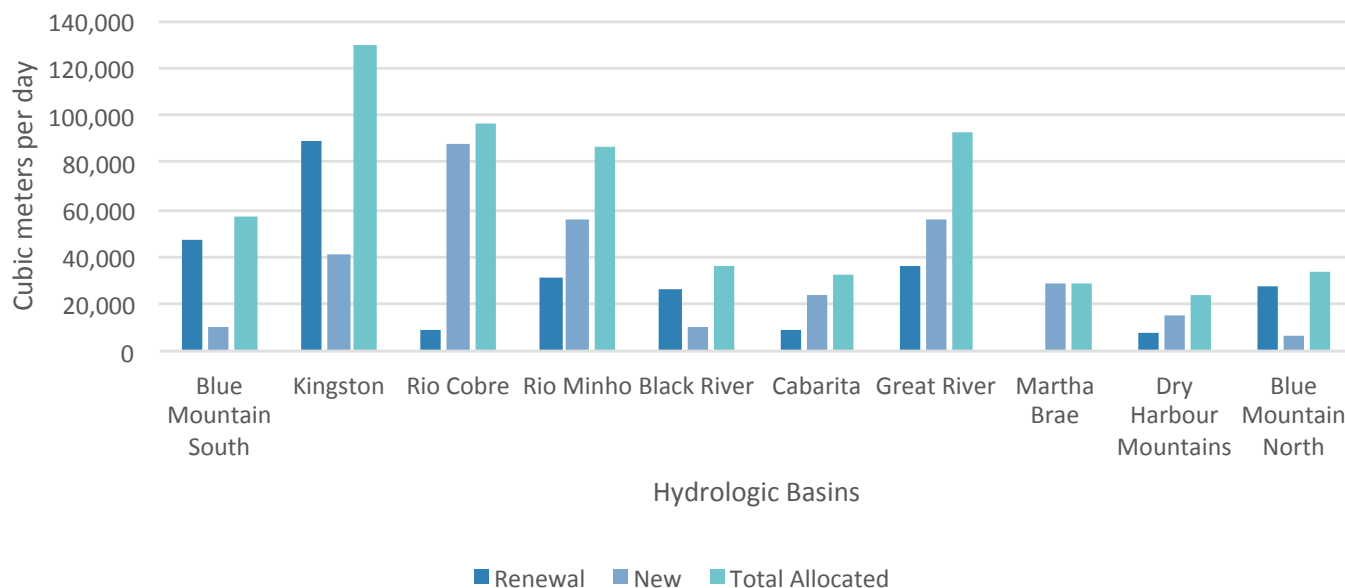


Figure 3: Volume Allocated via New and Renewed licences per Hydrologic Basin

The total volume allocated up to March 2020 represents approximately 64.6% of the total exploitable potential yield.(Jamaica’s total exploitable potential yield is ~3,865 Mm3/Yr, Water Resources Development Master Plan, 2015). This includes, water allocated for non-consumptive uses such as:

hydropower. However, with the removal of the allocation of water for non-consumptive uses, the total volume allocated represents approximately thirty-seven point seven percent (37.7%) of the total exploitable potential yield. This indicates that overall, the level of stress on the island’s water resources is moderate. The Rio Cobre and Kingston Hydrobasins continue to be the two most stressed Basins as illustrated in figure 4.

In these two Basins, the sector demand equals the exploitable potential and the allocated volume added to the environmental demand equals the exploitable potential. In both basins there is no water resource available for further allocation.

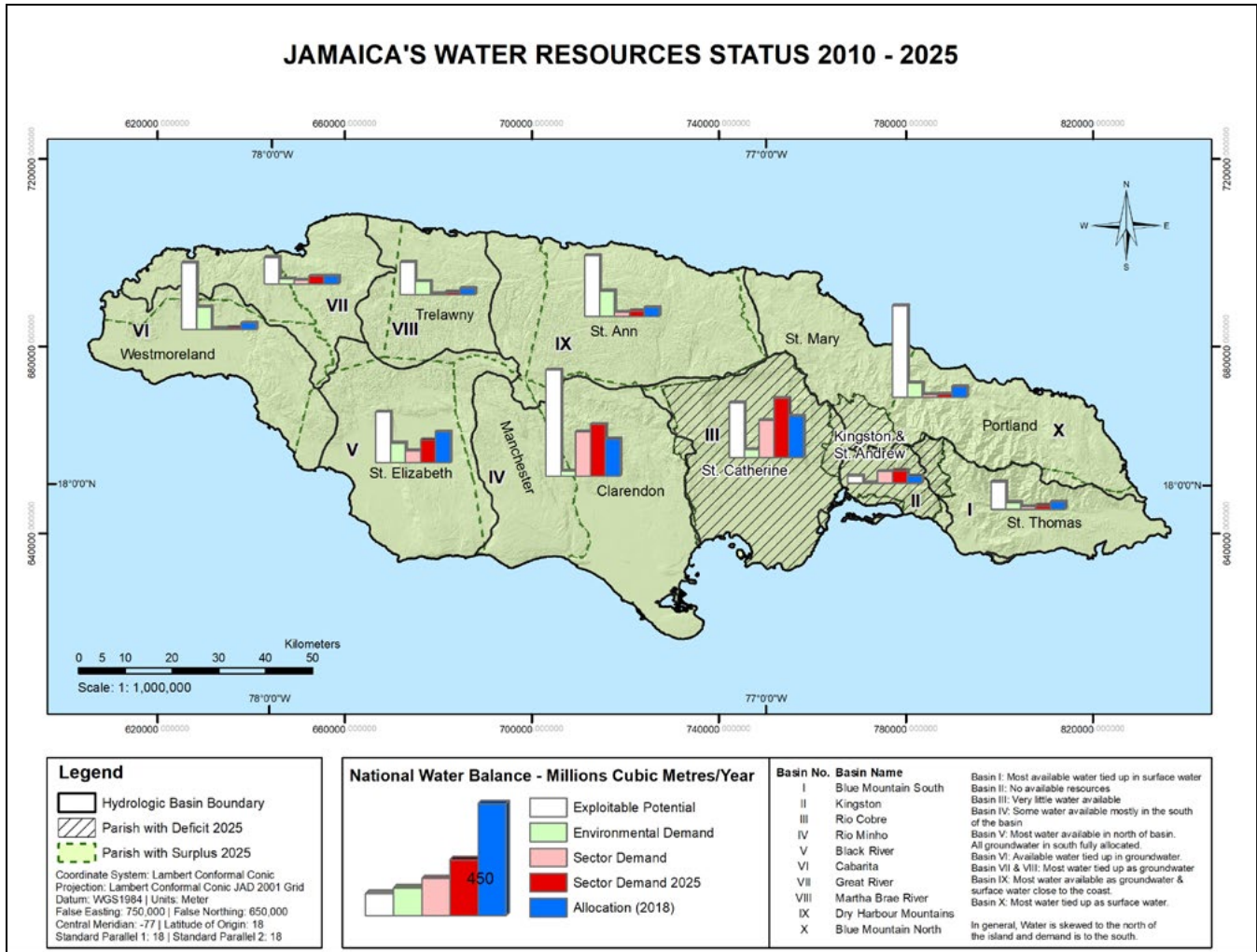


Figure 4: Status of Jamaica’s Water Resources



IMPROVEMENTS TO THE HYDROMETEOROLOGICAL NETWORK

The WRA continued to make strides in modernizing Jamaica’s surface water monitoring network. Nine (9) new stations were added to the existing monitoring network and fourteen (14) existing stations were upgraded or repaired. The stations upgraded were outfitted with Radar Level Sensors. These sensors will work in tandem with ETrackers and will transmit streamflow data in real-time to the WRA. The upgrades were funded through the WRA’s subvention, the Pilot Programme for Climate Resilience (PPCR) and International Development Bank (IDB) Hope/Yallahs Watershed Project. The stations were as follows:

TABLE 5: LIST OF UPGRADED/CONSTRUCTED STREAM GAUGE STATIONS IN 2019-2020

STATIONS UPGRADED/ REPAIRED			
RIVER NAMES	LOCATIONS	TYPES OF INTERVENTIONS	SOURCE OF FUNDING
HECTORS RIVER	Troy, Trelawny	New station	WRA (budget)
Y.S RIVER	Middle Quarters St. Elizabeth	New Station	WRA (budget)
GREEN RIVER	Mavis Bank, St. Andrew	New Station	IDB Yallahs/Hope River Watershed Conservation
NEGRO RIVER	Hagley Gap, St. Andrew	New Station	IDB Yallahs/Hope River Watershed Conservation
NEGRO RIVER	Ramble, St. Thomas	New Station	IDB Yallahs/Hope River Watershed Conservation
YALLAHS RIVER	Ramble, St. Thomas	New Station	IDB Yallahs/Hope River Watershed Conservation
MILK RIVER	Rest, Clarendon	New Station	PPCR/ICDIMP
PINDARS RIVER	Arthur Seat, Clarendon	New Station	PPCR/ICDIMP
RIO BUENO	Trelawny	New Station	PPCR/ICDIMP
RIO MINHO	Kupuis, Clarendon	Replacement station	WRA (budget)
RIO COBRE	Spanish Town	Installation of Radar Level Sensor and eTracker	WRA (budget)
ROARING RIVER	Petersfield, Westmoreland	New Box (instrument housing) and staff gauge	WRA (budget)
ORANGE RIVER	Logwood, Hanover	Replace backing board and staff gauge	WRA (budget)
WAGWATER RIVER	Blakes Bridge, St. Mary	Replacement of instrument housing and radar arm	PPCR/ICDIMP
BUFF BAY RIVER	Spring Hill, Portland	Replacement of instrument housing and radar arm	PPCR/ICDIMP
SWIFT RIVER	Chelsea, Portland	Replacement of instrument housing and radar arm	PPCR/ICDIMP
MORANT RIVER	Hill Side, St. Thomas	Replacement of instrument housing and radar arm	PPCR/ICDIMP

STATIONS UPGRADED/ REPAIRED			
RIVER NAMES	LOCATIONS	TYPES OF INTERVENTIONS	SOURCE OF FUNDING
BRAES RIVER	Braes River, St. Elizabeth	Replacement of instrument housing	PPCR/ICDIMP
BLACK RIVER	Newton, St. Elizabeth	Replacement of instrument housing	PPCR/ICDIMP
CABARITA	Grange, Westmoreland	Replacement of instrument housing	PPCR/ICDIMP
DUNNS' RIVER	Ocho Rios, St. Ann	Replacement of Instrument housing	PPCR/ICDIMP
WHITE RIVER	Labyrinth, St. Mary	Replacement station	PPCR/ICDIMP
YALLAHS RIVER	St. Peters, St. Andrew	Upgrade to automatic station	Yallahs/Hope River Watershed Conservation

WRA - Water Resources Authority
 PPCR/ICDIMP- Pilot Programme for Climate Resilience - Improving Climate Data and Information Management -Pilot
 IDB- Inter-American Development Bank



Figure 5: New Station on the White River at Labyrinth, St. Mary



Figure 6: New Station constructed on the Yallahs River at Ramble, St. Thomas

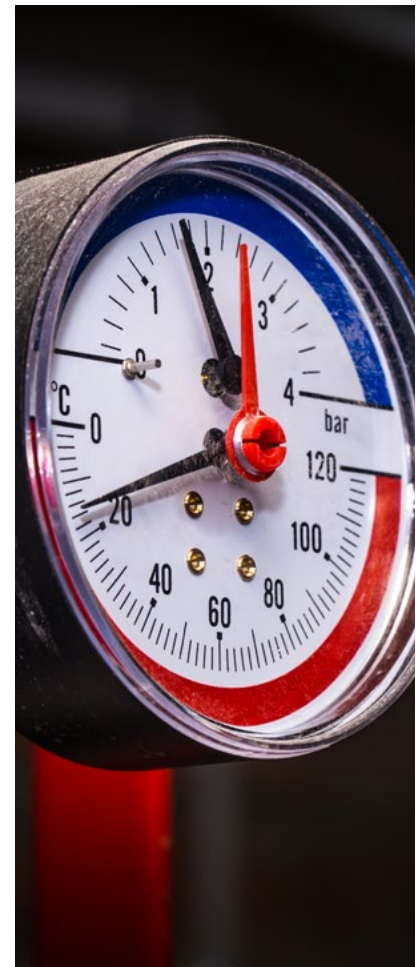




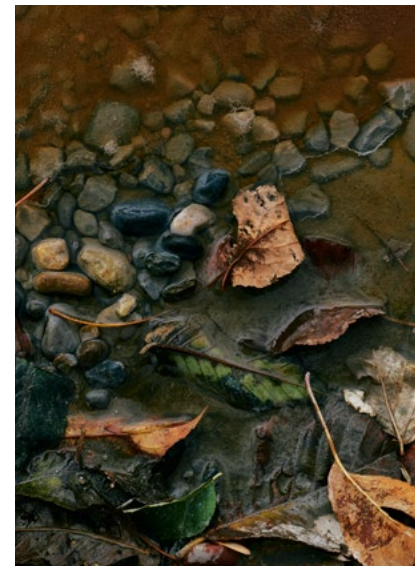
Figure 7: New Station on the Green River near Mavis Bank, Upper St. Andrew.



Figure 8: New Station on the Hectors River, Trelawny

THE REAL-TIME SYSTEM

With the upgrade to the hydromet network, eleven stream - flow stations were added to the real - time system. This brings to twenty-nine (29), the number of stream flow stations on the system in addition to twenty-three (23) rainfall intensity gauges.



The improvements will increase the WRA’s ability to provide timely information to assist stakeholders such as the National Water Commission and the National Irrigation Commission, in determining trends and the availability of water resources across the island.

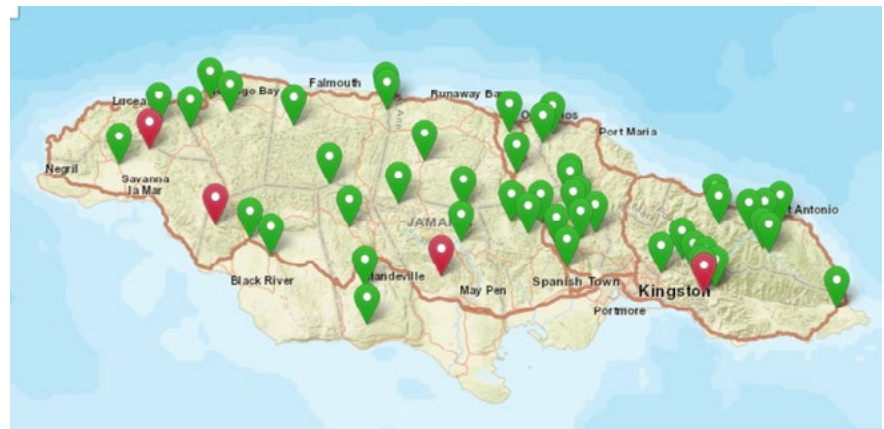


Figure 9: Distribution of stations on the WRA real-time system

MONITORING OF WATER RESOURCES

SURFACE WATER

TABLE 6: SURFACE WATER MONITORING NETWORK

MONITORING AREAS	STREAM FLOW GAUGING STATIONS			ZERO FLOW MEAS.	RAIN GAUGES	FLOOD WARNING SYSTEMS	SOIL MOISTURE PROBES	KARST DEPRESSION MONITORING
	RECORDING	MANUAL	SPOT					
Region 1	12	6	21	16	8	1	4	
Region 2	20	8	8	28	14	0	5	1
Region 3	17	5	33	18	9	0	4	1
TOTAL	49	19	62	62	31	1	13	2

The Authority began 2019-2020 with sixty-nine (69) continuous stream-gauging stations (43 automatic and 26 manual) and 61 spot measurement point. Improvements to the Network increased the number of automatic recording stations to forty-nine (49). Manual stations were reduced to nineteen (19) and spot measurements were increased by one (1), from sixty-one to sixty-two (62). In addition to the surface water monitoring points, the Data and Resource Monitoring Unit collected rainfall data at thirty-one (31) rainfall stations across the island. The WRA continued to maintain the Rio Cobre Flood Early Warning System in an effort to prevent loss of life and minimize damage to property in the Bog Walk Gorge and surrounding communities.

The WRA was able to achieve ninety-six percent (96 %) of its target for the measurements for gauging stations and the corresponding data computations. Ninety-two percent (92%) or six hundred and eighty-four of the target for spot measurements at ungauged stations was achieved. Due to COVID -19 restrictions, monitoring activities were curtailed for the January- March quarter.

TABLE 8: SURFACE WATER MEASUREMENT TARGETS AND ACHIEVEMENTS

SURFACE WATER TARGETS AND ACHIEVEMENTS		
ACTIVITIES	ANNUAL TARGETS	ACHIEVEMENTS
SURFACE WATER MONITORING		
Computation of 12 Months of Daily Discharge for Gauging Stations	816	781 (96%)
Spot-Measurement at 61 Ungauged Stations	744	684 (92%)
Zero Flow Measured at 63 Gauging Stations	744	648 (87%)
Maintenance of Gauging Stations 40	38	25 (66%)

GROUNDWATER

The WRA maintains a network of two hundred and eighty-seven (287) index wells across the island. Data collected from these index wells are analyzed for trends in the storage of water in aquifers. The 2019/20 target for water level measurements was three thousand



four hundred and forty-four (3444). Of this amount, two thousand seven hundred and fifty- six (2756) measurements were conducted. This represents eighty percent (80%) of the target. The target was not achieved as a result to the some wells being inaccessible or blocked, and restrictions placed on staff due to COVID -19.

TABLE 9: SUMMARY OF GROUNDWATER MEASUREMENTS AND TARGETS

SUMMARY OF GROUNDWATER TARGETS AND ACHIEVEMENTS		
ACTIVITIES	ANNUAL TARGETS	ACHIEVEMENTS
GROUNDWATER MONITORING		
Groundwater Measurements (287)	3444 (100%)	2756
Maintenance of monitoring well (24)	24 (100%)	15

STATE OF JAMAICA'S GROUNDWATER RESOURCES

In order to better understand the impact of the prevailing climatic conditions on aquifer storage, the Data and Resource Monitoring Unit conducted an analysis on selected wells across the island in the 2019/20 financial year. The analysis was done by comparing the static water levels at the date of development of these wells and water levels recorded from measurements conducted in 2018 and 2019. The data indicated that groundwater levels for 2019 were lower than those recorded for 2018. For example, the Buttercup Park Borehole which is used to monitor water levels in St. Andrew East-Central, had slightly lower levels in 2019 when compared to 2018 and was approximately 21% lower than the initial static water level (see figure 9).

HYDROGRAPH OF BUTTERCUP PARK BOREHOLE

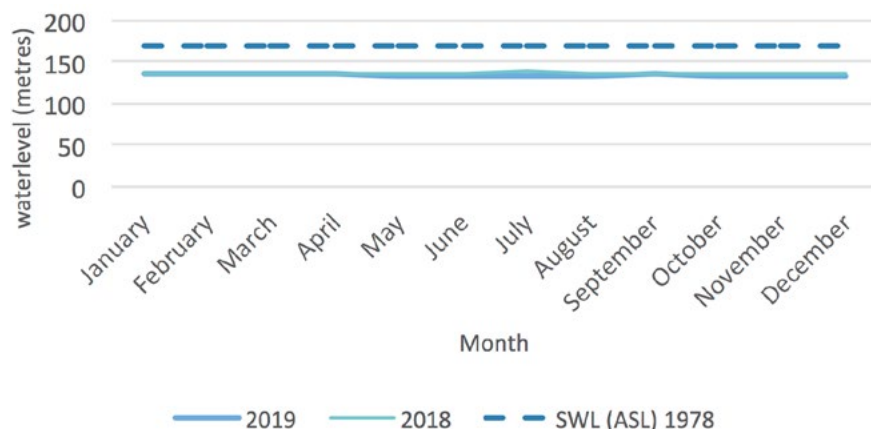


Figure 10: Comparison of 2019 water level to 2018 and the initial static water level of Buttercup Park Borehole, St. Andrew.

For Arthurs Mount Borehole in St. Ann, the water levels were lower from January to May and again from November to December in 2019 when compared to 2018. Water levels for 2019 were below the initial static water level. There was rainfall in September which likely accounted for the slight increases in October to December as the aquifer was recharged.





HYDROGRAPH OF ARTHURS MOUNT BOREHOLE

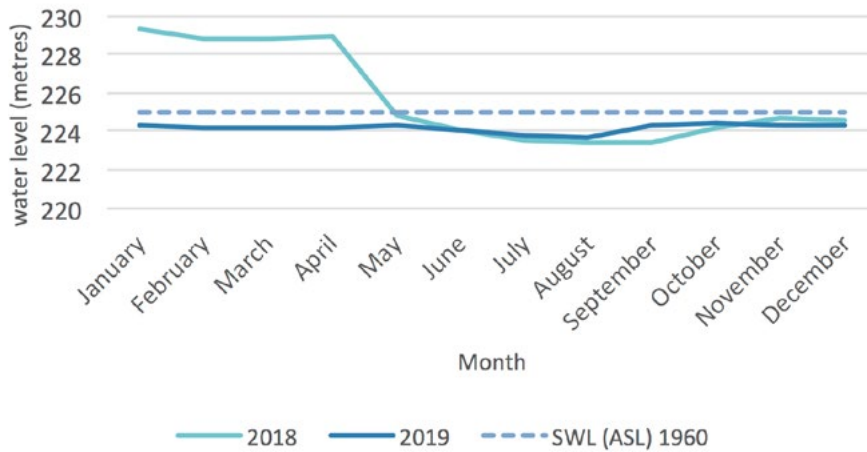


Figure 11: Comparison of 2019 water level to 2018 and the initial static water level of Arthurs Mount Borehole, St. Ann.

LAUNCH OF WATER RESOURCES BULLETINS

As a result of the island experiencing meteorological droughts in 2018, there was an increase in the number of requests for data and information of its impact on water resources. In a bid to satisfy these requests, the Water Resources Authority commenced the publication of bimonthly Water Resources Bulletins.



STREAMFLOW PERCENTILE NOVEMBER 2019

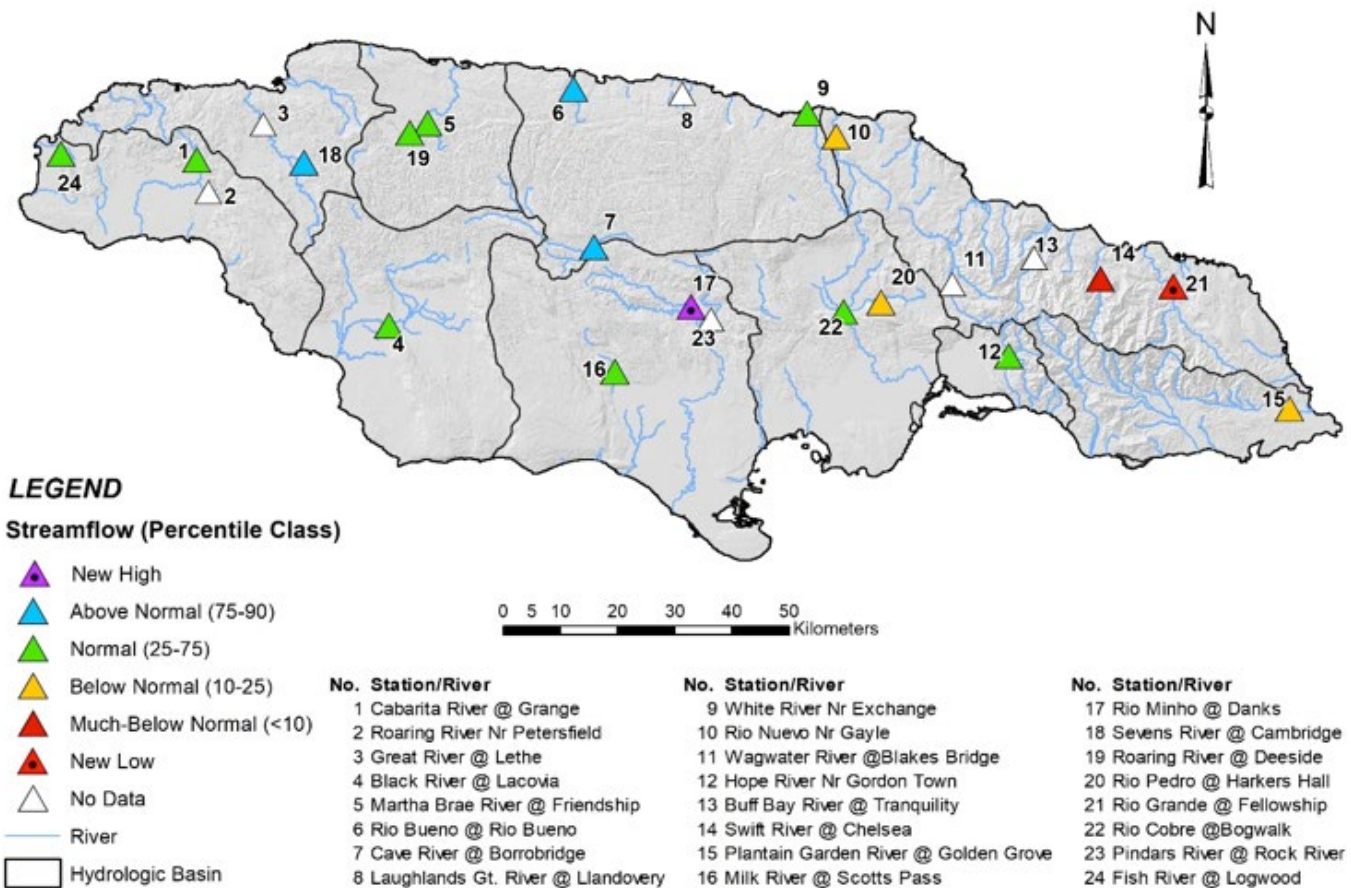


Figure 12: Streams used in the Bulletin



The *Water Resources Bulletin* provided detailed situation analysis of the health of the nation’s surface water resources. The thirty (30) – year monthly mean flow and the Q90 (which has been adopted as the reliable yield which a river is expected to produce) were compared with the current monthly mean flows. See figures 12 & 13.

HYDROGRAPH OF HOPE RIVER

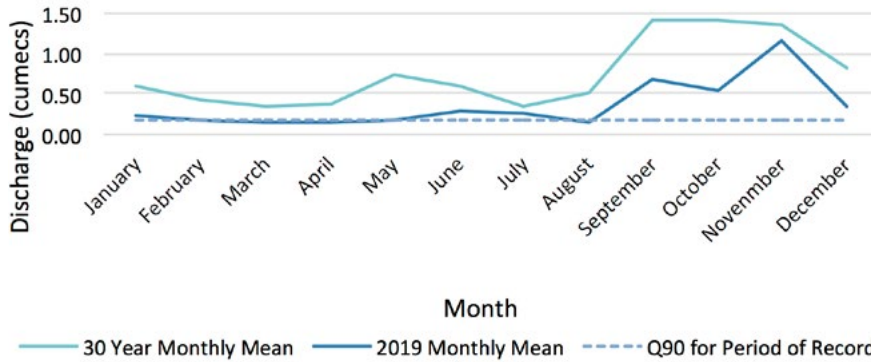


Figure 13: Comparison of 2019 monthly mean flows with the Q90 and the 30-year monthly mean for Hope River.

Figure 13 shows the 2019 hydrograph of Rio Grande at Fellowship, flows were below normal for almost every month. The station recorded flow deficits for June and July, and minor increases in August to November.

HYDROGRAPH OF RIO GRANDE

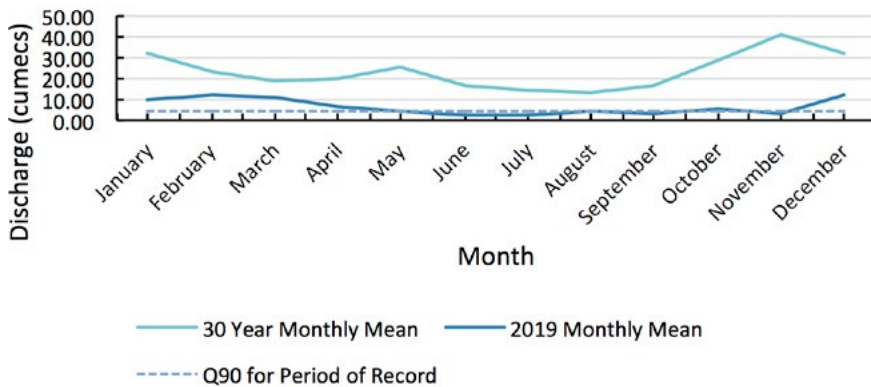
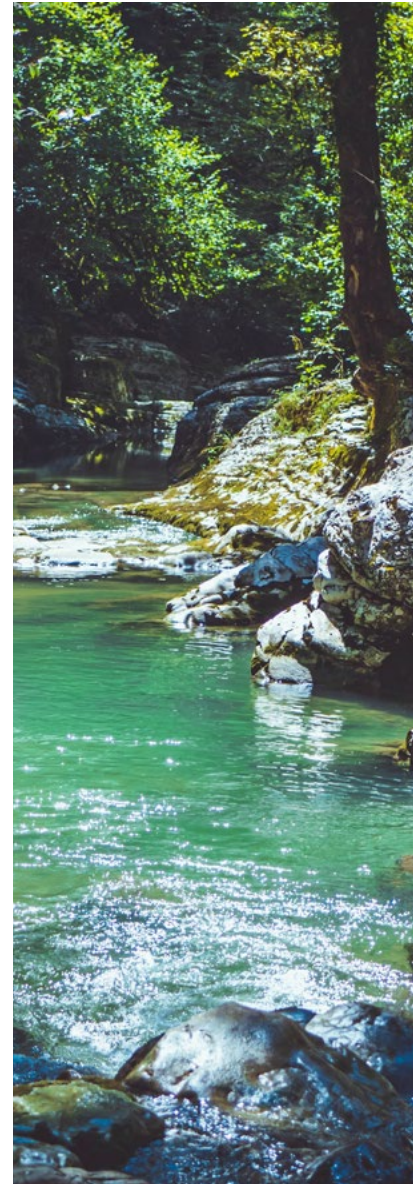


Figure 14: Comparison of 2019 monthly mean flows with the Q90 and the 30-year monthly mean for Rio Grande at Fellowship.



WATER RESOURCES PLANNING & INVESTIGATIONS

ASSESSING REGIONAL FLOW DYNAMICS IN THE RIO BUENO SUB-WATERSHED MANAGEMENT UNIT

In January 2020, the WRA began assessing the regional flow dynamics of the Rio Bueno Sub-watershed Management Unit. This project is being done in collaboration with the International Atomic Energy Agency (IAEA). This project will use isotopic techniques to further delineate the connectivity between sinking and rising streams, along with groundwater contributions and spring risings in the Rio Bueno sub-Watershed Management Unit.

Preliminary Map of JAM7004 Groundwater Sample Sites

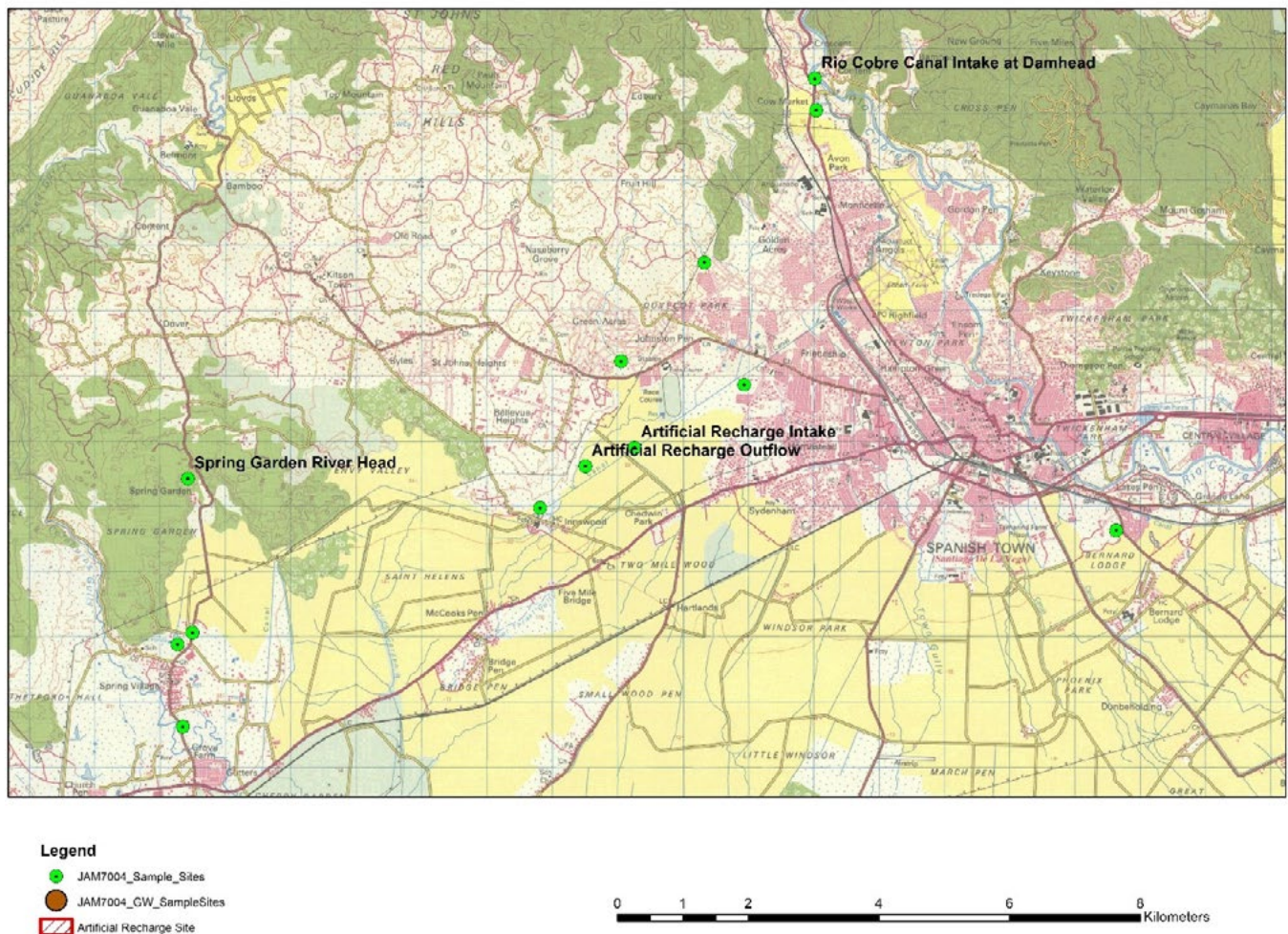


Figure 15: Location Map for Flow Dynamics in the Rio Bueno



INVESTIGATION OF UNDERGROUND RIVER FLOW DYNAMICS VIA DYE TRACING IN THE RIO BUENO SUB-WATERSHED MANAGEMENT UNIT

Dye Tracing investigations of Karstic Limestone Areas of Jamaica, with a focus on the Rio Bueno Sub-Watershed Management Unit of the Dry Harbour Mountain Hydrologic Basin continued in the 2019-2020 financial year. This project focused on monitoring and determining the interaction between ground and surface waters in Karstic Limestone areas using dye tracing and isotope hydrology methods.

Previous activity from the 2018-2019 financial year, investigated the connections between the dye injection sites at Quashie River and Lowe River. The finding as reported in 2018/19 Annual Report, revealed that the Quashie and Lowe Rivers contribute flow to the Rio Bueno, but does not contribute any flow towards the Pear Tree Bottom or Laughlands Great Rivers. This investigation was expanded to ascertain the flow contributions of the Cave River, Blue River Sink and Bottom River Sink towards flows in the Rio Bueno, Pear Tree Bottom and Laughlands Great River, along with seventeen (17) other sources in the Sub-Watershed Management Unit.

FINDINGS:

Preliminary results indicate direct connections between the Cave River and Rio Bueno, between the Blue River Sink, Mother Sue Rising and Bottom River Sink, and between Blue River Sink, Bottom River Sink, Pear Tree Bottom and Laughland Great Rivers. There was no connection between Cave River and Pear Tree Bottom or Laughland Great River. None of the spring sources have shown any connection to the injection points up to the time of writing. Some additional tracing may be required to confirm any possible connections between

Blue River/Bottom River and Roaring River/Dunns River and Laughlands Little River (aka Chester Spring), as there were challenges with collecting receptors at Roaring River..

It is likely that this continued investigation, will lead to a re-organization of the WMU and sub-WMU classifications in the Dry Harbour Basin.



Figure 16: Dye Injection at Blue River Sink (featuring Maurice Wallace, Hydrogeologist)



Figure 17: Dye Injection at Bottom River Sink (featuring Geoffrey Marshall, Chief Hydrologist)



Figure 18: Dye Injection at Cave River Sink (featuring Desmond Wellington, Senior Assistant Hydrologist (acting))





RESOURCE ASSESSMENTS & FIELD INVESTIGATIONS

The WRA completed investigations into reliability and water quality for the following sources:

WATER RESOURCES INVESTIGATIONS			
SOURCE	LOCATION	REQUESTED BY	COMPLETION DATE
Pearl/Tiki-Tiki Spring	Northern Manchester	Rural Water Supply Limited	2019-2020
Noisy Water Spring	Cave Valley, St Ann	National Water Commission	2019-2020

The final reports will be finalized in the 2020/2021 financial year.

The WRA also carried out twenty-five (25) field investigations based on requests from public and private enterprises. These field investigations included (but were not limited to) site visits to bauxite companies and cemetery site investigations.

UPDATE OF THE WATER RESOURCES MASTER PLAN

The Water Resources Master Plan Update continued throughout 2019-2020 by the Planning and Investigations Unit under the direction of the Chief Hydrologist. During the period of review, there was:

- an assessment of rainfall and evapotranspiration data;
- collation of current and historical flow data;
- collation of historical and current water quality data;
- the formulation of a water balance spreadsheet for a simplified estimate of water resources from inputs of precipitation, evapotranspiration and other hydrological parameters.

A draft of the Water Resources Development Master Plan was slated to be completed in March 2020. However, due to staff shortages and

competing demands, the completion of the Water Resources Development Master Plan was rescheduled to the second quarter of the 2020/21 financial year.

PRELIMINARY FINDINGS:

- there are sufficient water resources for Jamaica's needs on the macro-scale;
- there is significant need of management and distribution alignment on the local scale;

- There appears to be a slight decline in total rainfall when compared to previous years;
- Climate change impacts are projected to have a severe decline in rainfall and a steady increase in evapotranspiration by 2080, leading to a significant decline in the island's available water resources.

TABLE 10: PROJECTED IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES IN JAMAICA

PROJECTED IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES (MM ³ /YR)					
MEAN ANNUAL PRE-CIPITATION	2020	2025	2030	2050	2080
	19079.92	18631.07	18178.32	16373.17	13660.57
Mean Annual Actual Evapotranspiration	9071.70	9191.42	9511.43	9534.99	9740.00
Total Safe Yield	5009.41	4457.58	3707.44	1934.68	-894.66

There will be ongoing work on various aspects of the Water Balance which will require research and refining, including:

- Accurate estimates of Submarine discharge
- Further delineation and revision of the Watershed Management Unit and sub-Water Management Unit boundaries for a smaller-scale water balance analysis
- Accurate determination of Inter-Watershed Management Units transfers of groundwater.
- Potential application of groundwater and surface water modeling software to the Master Plan preparation process (e.g. MODFLOW and Dynamic Water Resources Assessment Tool).

PROVISION OF TECHNICAL SUPPORT TO THE GOVERNMENT OF JAMAICA



The WRA provided technical support to the Government of Jamaica via participation in the Development Approval Process (DAP) and at meetings and workshops as requested. During the 2019-2020 financial year, the Planning & Investigations Unit completed one hundred and sixty (160) of two hundred and seventy-eight (278), or seventy-seven percent (77%), of technical responses to National Environment and Planning Agency and various Municipal Corporations within the requested thirty (30) day period. This compares to seventy-three percent (73%), or one hundred and fifty-five of two hundred and eighteen (155/218), for the 2018/2019 financial year.

For 2019-2020 the Planning & Investigations Unit represented the WRA at 52 meetings. This represents a decline compared to the 78 meetings for the corresponding period. Some of these meetings include the following (not an exhaustive list):

- ◆ National Environment and Planning Agency (NEPA) - Subdivision Committee.
- ◆ NEPA - Technical Review Committee.
- ◆ Cockpit Country Boundaries Meeting with Ministry of Science Technology and Energy.
- ◆ NEPA- Development Assistance Centre (DAC) Meeting.
- ◆ Office of Disaster Preparedness and Emergency Management (ODPEM) - Climate Change Adaptation Meeting.
- ◆ Ministry of Tourism - Advisory Committee.
- ◆ RAMSAR Committee Meeting
- ◆ Development Approval Committee Stakeholders Meeting Towards the Preparation of the Cemetery Research Planning Paper
- ◆ River Rafting Authority Meeting
- ◆ Environmental Monitoring meeting - Ewarton Works
- ◆ New permit categories and amended regulations of NEPA Meeting.
- ◆ Hope/Yallahs Special Project Meeting.
- ◆ Essex Valley Agricultural Development Project
- ◆ Agro Parks Project Steering Committee Meeting
- ◆ GOJ bauxite/alumina Monitoring Meeting with Jamaica Bauxite Institute (JBI), National Environment and Planning Agency (NEPA), Mines and Geology Division.
- ◆ JAMPRO Meeting.
- ◆ Nationally Appropriate Mitigation Action for Water Sector.
- ◆ Vision 2030 Planning Workshop.

Additionally, the WRA performed a special investigation and assessment of water quantity and quality in the Essex Valley and Bull Savanna Sub-watershed Management Units in South-East St. Elizabeth/southwest Manchester over the period January-February 2020 to ascertain the available water resources to support the Essex Valley Agricultural Development Project (EVADP). This special investigation included well verification, blanket groundwater level measurements, and water quality sampling. The aim is to provide guidance for siting of wells within the Essex Valley/Upper Morass sub-WMU to meet the Essex Valley Agricultural Development Project (EVADP) water demand. The WRA continue to provide support and guidance for this project in the 2020-2021 financial year.

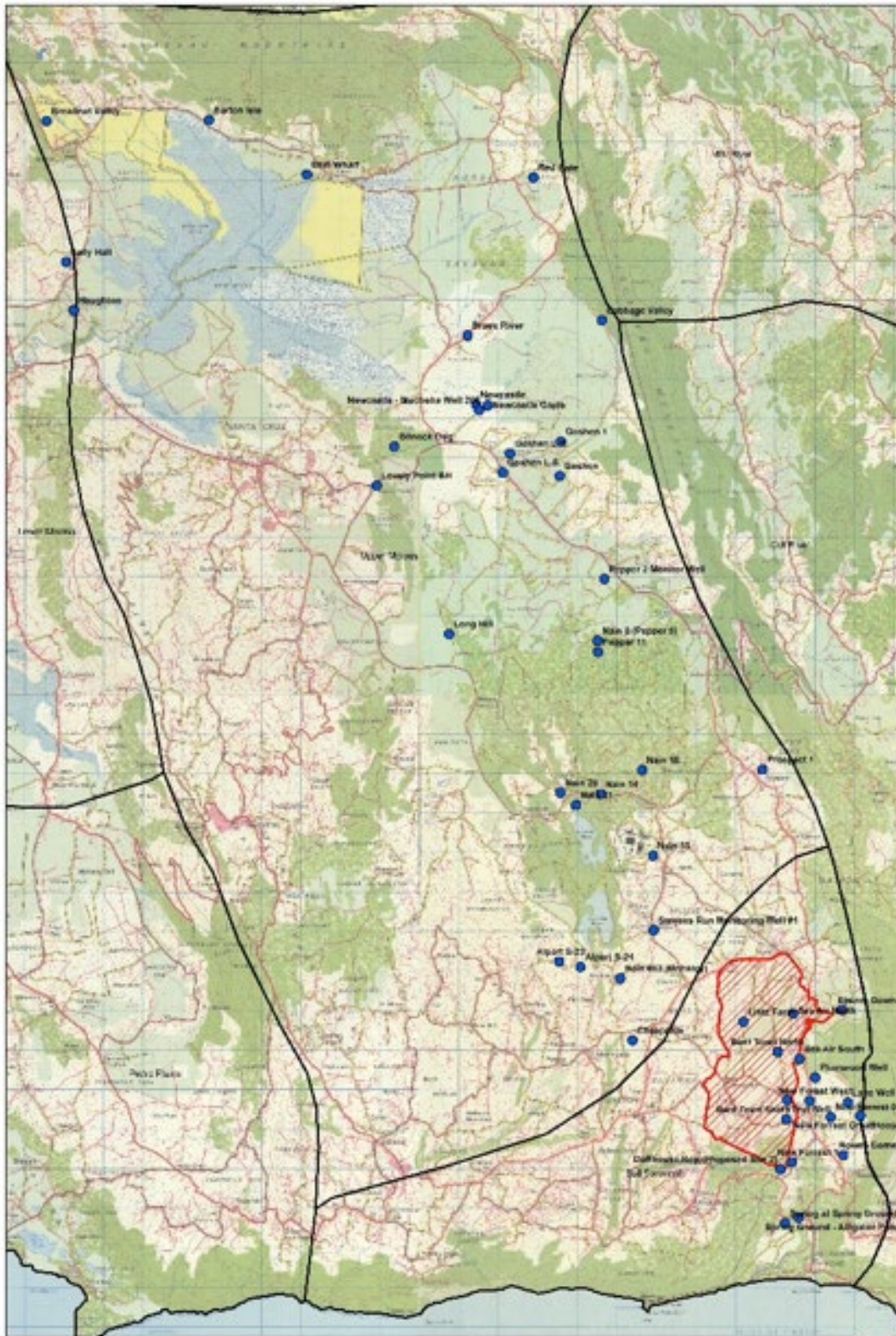


Figure 19: Essex Valley Blanket Water Level Measurement Wells



INFORMATION AND COMMUNICATION TECHNOLOGY

One of the WRA's operational objectives was to provide the database for assessing the quantity, quality, and variations in time and space of the surface and underground water resources and to facilitate timely access by all stakeholders.

The Information & Communication Technology Unit employed two strategies to support the achievement of this primary objective.

STRATEGY 1 AND ACHIEVEMENTS (UPDATING MAJOR DATA SETS)

The first strategy involved updating two major data sets:

1. A non-spatial web-based data set containing hydrologic and related information for Jamaica. This data set is accessible using any major web browser to browse to <https://wra.gov.jm/webmap>.

Data sets were successfully updated with information comprising:

- ◆ Daily discharges measurements for sixty (60) of seventy-five (75) gauging stations.
- ◆ Monthly spot measurements for fifty (50) of fifty-four (54) ungauged stations.
- ◆ Groundwater level data for two hundred and seventy-seven (277) of two hundred and eighty-four (284) monitoring stations.

2. A spatial data set which is in a format (Shapefile format) that is compatible with the standard Geographic Information Systems (GIS) software used by the Government of Jamaica. This data set is used in-house for routine spatial analysis (which cannot be readily done using our web based hydrologic data set which is not in GIS format).

Data sets were successfully updated with data comprising of:

- ◆ Water level data for all ten of Jamaica's Hydrologic Basins.
- ◆ Depressions for five of Jamaica's Hydrologic Basins.
- ◆ Water balance, surplus, deficit, demand for Jamaica.

STRATEGY 2 AND ACHIEVEMENTS (MAINTAINING AND UPGRADING COMPUTER FACILITIES)

The strategy implemented to achieve this objective involved maintaining and improving the computer and network facilities which host the non-spatial and spatial (GIS) data sets that are provided by Strategy 1 and which allow stakeholders and staff to access, use, and/or update these data sets.

The strategy implemented to achieve this objective involved:

1. Maintaining web hosting and internet service to allow all stakeholders (including staff) to connect to core data sets. All relevant web hosting and internet fees were paid to ensure service provision.
2. Maintaining computer hardware and software used by staff for data preparation and data analysis.



PUBLIC EDUCATION

One of the strategic objectives for the 2019/20 financial year was to increase public awareness of the importance of protecting and conserving Jamaica’s water resources. The work of the WRA was shared with members of the public through the use of print and electronic media and community engagements as indicated below:

ENGAGEMENT WITH TRADITIONAL MEDIA & SOCIAL MEDIA	
TYPES OF ENGAGEMENT	TOTAL
Newspaper articles	12
Interviews	15
Documentaries	1
Advertisements	65
Media Releases	4
Posts	90
Number of persons reached via social media	117,000

COMMUNITY ENGAGEMENTS	
TYPES OF ENGAGEMENT	TOTAL
Expositions	8
Guided Tours	1

COMMUNITY ENGAGEMENTS	
TYPES OF ENGAGEMENT	TOTAL
Community Meetings	3
Requests for Information	82
Presentations	10

The WRA continued to satisfy the research needs of members of the public through a wide array of material on Jamaica’s water resources via the Basil Fernandez Documentation Centre (BFDC). During the 2019/20 financial year the WRA commenced a programme to implement a new Public Access Catalogue. The Project is slated to be completed in the 2021/22 financial year. Upon its

completion, members of the public will be able to view and search the catalogue of materials that are available in the BFDC.

WORLD WATER DAY 2020

World Water Day was celebrated under the theme “Water and Climate Change”. The plans for WWD were significantly curtailed due to the onset of the Coronavirus. The planned activity was for to host a series of community meetings to promote rainwater harvesting as a means of climate adaptation. Three meetings were held. The planned roadshow and outside broadcasts were cancelled.



Staff engaging students at the primary level



Members of the Data and Resource Monitoring Unit with students on a guided tour of the Hope River



Engaging members of the public via a roadshow



Engaging students on the importance of water conservation and rainwater harvesting

HUMAN RESOURCE PLANNING

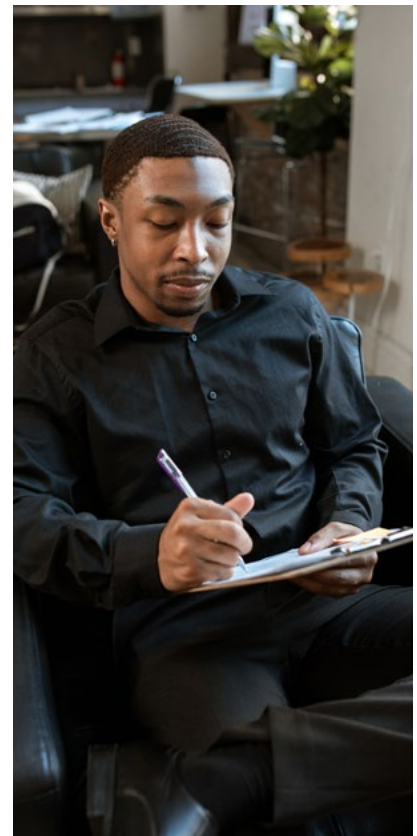
STAFFING

The WRA was able to fill vacancies in keeping with the Ministry of Finance and Planning's Post Operations Committee's guidelines. Eight (8) persons were recruited. Additionally, three (3) employees were promoted. Six (6) persons were separated - three (3) resignations (of which two migrated); two (2) contract of employment ended and one (1) retired.

POSITIONS FILLED	
POSITIONS	NUMBER OF EMPLOYEES
Director, Administration & Human Resources Development	1
Hydrologist	1
Assistant Hydrologist	1
Temporary Driver	1
Temporary Artisan	1
Temporary Office Attendant	1
Part-Time Cleaner	2

PROMOTIONS	
POSITIONS FILLED VIA PROMOTION	NUMBER OF EMPLOYEES
Deputy Managing Director	1
Senior Hydrogeologist	1
Hydrogeologist	1

SEPERATIONS	
POSITIONS	NUMBER OF EMPLOYEES
Human Resources Manager	1
Environmental Officer	1
Senior Assistant Hydrogeologist	1
Office Attendant	1
Temporary Driver	1
Temporary Artisan	1



HUMAN RESOURCES CAPACITY PLAN

The WRA was able to carry out its full operations with the cadre of staff as indicated in the Human Resource Capacity Plan as follows:



UNITS/DIVISIONS OR PROJECTS	STAFF COMPLE- MENT	PLANNED 2017/2018	PLANNED 2018/2019	PLANNED 2019/2020
Executive	2	2	2	2
ADMIN/HRD	14	19	19	19
Finance and Accounts	4	4	4	4
Management Info. System	3	4	4	4
Technical Services	2	2	2	2
Planning and Investigation	10	12	12	12
Resource Management	18	22	22	22

TRAINING & DEVELOPMENT

The WRA collaborated with Ministry of Economic Growth & Job Creation, HEART/NTA Housing Opportunity Production and Employment (HOPE) and University of Technology to facilitate thirteen (13) interns for on the job learning. A total of (15) fifteen employees attended training programs, both overseas and locally, for the financial year 2019-2020.

CONFERENCE/COURSE/SEMINAR/WORKSHOP	NUMBER OF PARTICI- PANTS
Supervisory Management Course (Jamaica)	3
Post Graduate Diploma General Management (Jamaica)	1
PPCS-Level 2: Intermediate Public Sector Procurement (Jamaica)	1
PPCS Level 3: Advanced Public Sector Procurement (Jamaica)	1
PPCS Level 4: Performance Auditing and Procurement Function (Jamaica)	1
WMO Multi-Hazard Early Warning Conference & Sixth Session of the Global Platform for Disaster Risk Reduction 2019 (Switzerland)	1
Second Global Workshop on Dynamic Water Resources Assessment Tool (Republic of Korea)	1
Capacity Development Training in Caribbean Dewetra Platform 2.0 (Barbados)	1
Technical Cooperation Fellowship on Applied Groundwater Modelling (Netherlands)	1
Caribbean Symposium 2019: Operational Hydro-meteorological Leadership Summit (Barbados)	1
Symposium on Mainstreaming Gender in Water Resources Management for Disaster Reduction in the Caribbean (Trinidad & Tobago)	1
UNESCO-IHP Seminar: Sustainable Water Management in Latin America and the Caribbean (Peru)	1
Knowledge Exchange Study Tour: Payment for Ecosystem Services (PES) programme in Latin America (Mexico)	1

EMPLOYEE PERFORMANCE MANAGEMENT (EPM) SENSITIZATION SESSION

The Public Sector Transformation and Modernization Division of the Cabinet Office conducted a staff Sensitization exercise for forty-three (43) members of staff in relation to the new Employee Performance Management Programme (EPM).

PMAS/EPM will officially begin 1st April 2020 within the WRA.

MONDAY MOTIVATIONAL SERIES

Staff at the Water Resources Authority continued to deliver in a challenging economic

environment. To keep staff motivated, a motivational series was implemented. Every first Monday of each month, a motivational quote

or other developmental type of material has been circulated to staff via email, and the notice boards.



SARS-Co V-2 (CORONAVIRUS COVID-19)

Weekly and where necessary, daily updates are provided to staff in relation to the COVID-19 Pandemic. Posters outlining what is COVID-19, proper hygiene, what to do and what not to do, how to support older persons and how to support children have been created and disseminated to staff.

Information coming out of the Press Conferences held by the Most Honourable Prime Minister and the Minister of

Health and Wellness and official documents are also circulated to staff. Additionally, staff are updated on what the WRA is doing to protect their health and how any emergencies will be handled.

LEARNING AND DEVELOPMENT

An organization-wide Learning and Development assessment was conducted on the WRA. The results have been captured in the Learning and Development Report and Training Plan, which has been submitted for review and response.

The Learning and Development Plan will be executed starting April 2020.

RECRUITMENT

The recruitment process of the WRA has been undergoing modernization, which will be standard approach when filling positions, using candidates sourced both internally and externally. Recruitment was carried out for the post of Office Attendant and Part-Time Cleaners.

LOOKING AHEAD

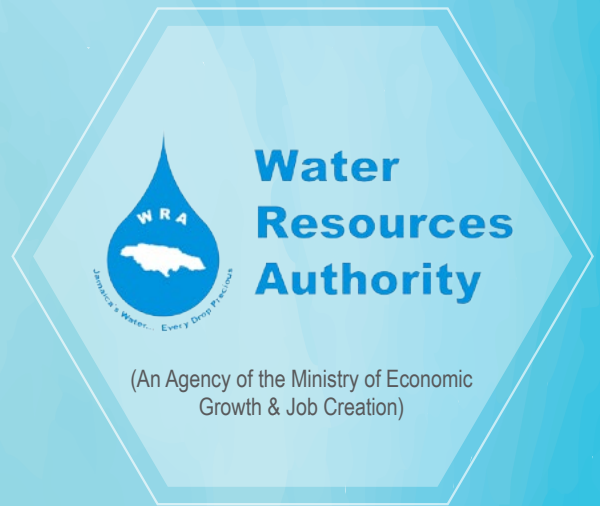
The WRA looks forward to carrying out its mandate in the upcoming 2021/2022 financial year. Here are some of the planned activities:

RESEARCH:

- ◆ Completion of the Water Resources Development Master Plan.
- ◆ The Completion of Jamaica's Water Quality Atlas.
- ◆ Presentation of findings on The Assessment of Lower Rio Cobre Alluvium Sub-Basin.
- ◆ Bimonthly publication of the Water Resources Bulletin.
- ◆ Completion of Dye Tracing in the Dry Harbour Mountain Hydrologic Basin.

HUMAN RESOURCE PLANNING AND ADMINISTRATION:

- ◆ Implementation of a new Performance Appraisal System.
- ◆ Completion of Restructuring and Reclassification with the Ministry of Finance and Planning and Public Service.
- ◆ Training and capacity building for staff.
- ◆ Renovations to the Administration Building.



FINANCIAL STATEMENTS

31 March 2020

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- 49 — NOTES TO THE FINANCIAL STATEMENTS



**Water
Resources
Authority**

(An Agency of the Ministry of Economic
Growth & Job Creation)



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Independent Auditor's Report

To the Members of

Water Resources Authority

Opinion

We have audited the financial statements of Water Resources Authority (the Authority) which comprise the statement of financial position as at 31 March 2020, Statement of Profit or Loss and other comprehensive income, changes in equity and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying financial statements give a true and fair view of the financial position of the Authority as at March 31, 2020, and of its financial performance and cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Company in accordance with the International Ethics Standards Board for Accountants Code of Ethics for Professional Accountants (IESBA Code) and we have fulfilled our other ethical responsibilities in accordance with the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and the Board of Directors for the Financial Statements

Management is responsible for the preparation of financial statements that give a true and fair view in accordance with IFRS and the Public Body Management and Accountability Act., and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Authority's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Authority or to cease operations, or has no realistic alternative but to do so.

The Board of Directors is responsible for overseeing the Authority's financial reporting process.

Independent Auditor's Report (Continued)

To the Members of

Water Resources Authority

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that presents a true and fair view.

We communicate with the Board of Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.



Chartered Accountants
Kingston, Jamaica
17 August 2020



STATEMENT OF FINANCIAL POSITION

As at 31 March 2020

	Note	2020 \$	2019 \$
ASSETS			
NON-CURRENT ASSETS			
Retirement benefit asset	3	190,337,000	239,744,000
Property, plant and equipment	4	171,856,975	178,977,782
Intangible assets	5	6,885,543	13,099,033
		<u>360,079,518</u>	<u>431,820,815</u>
CURRENT ASSET			
Receivables and prepayments	6	30,593,968	28,350,863
Investment	7	5,041,995	4,839,537
Cash and cash equivalents	8	142,682,482	78,838,218
		<u>178,318,445</u>	<u>112,028,618</u>
TOTAL ASSETS		<u><u>547,397,963</u></u>	<u><u>543,849,433</u></u>
RESERVES AND LIABILITIES			
Reserves and Accumulated Funds			
Capital reserve	9	74,068,693	74,068,693
Revaluation reserve	10	140,945,766	140,945,766
Accumulated surplus		313,716,818	314,162,814
		<u>528,731,277</u>	<u>529,177,273</u>
NON-CURRENT LIABILITIES			
Deferred income – Capital project grant	12	6,342,442	6,701,354
Deferred income – Other project funds	13	2,086,689	700,931
		<u>8,429,131</u>	<u>7,402,285</u>
CURRENT LIABILITIES			
Payables and accruals	14	10,237,555	7,269,875
		<u>10,237,555</u>	<u>7,269,875</u>
TOTAL RESERVES AND LIABILITIES		<u><u>547,397,963</u></u>	<u><u>543,849,433</u></u>

Approved for issue on behalf of the Board of Directors on 17 August 2020 and signed on its behalf by:

Chairman

Managing Director



STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

Year Ended 31 March 2020

	Note	2020 \$	2019 \$
Income			
Subventions		217,014,096	212,502,750
Other operating income	15	<u>71,433,008</u>	<u>70,751,535</u>
		288,447,104	283,254,285
Expenditure			
Expenses	16	<u>(225,818,100)</u>	<u>(208,083,515)</u>
Surplus for the year		62,629,004	75,170,770
OTHER COMPREHENSIVE INCOME:			
Other comprehensive income(loss) not to be classified to income in subsequent period:			
Measurement loss on defined benefit plan	6.2	<u>(63,075,000)</u>	<u>(23,167,000)</u>
		<u>(63,075,000)</u>	<u>(23,167,000)</u>
Total comprehensive (loss)/ income for the year		<u><u>(445,996)</u></u>	<u><u>52,003,770</u></u>



STATEMENT OF CASH FLOWS

Year Ended 31 March 2020

	Note	2020 \$	2019 \$
Cash Flows from Operating Activities			
Surplus for the year		62,629,004	75,170,770
Adjustments			
Depreciation and amortisation		19,341,046	15,398,364
Gain on disposal of property, plant and equipment		(550,000)	-
Amortisation of deferred grant		(358,912)	(358,912)
Net change in retirement benefits		<u>(13,668,000)</u>	<u>(16,514,077)</u>
Adjusted surplus for the year		67,393,138	73,696,145
Decrease/(Increase) in current assets			
Change in receivables and prepayments		(2,243,105)	(18,057,756)
Change in investment securities		(202,4458)	(202,251)
(Decrease)/Increase in current liabilities			
Change in payables and accruals		<u>2,967,680</u>	<u>1,580,548</u>
Net cash flow from operation		67,915,255	57,016,686
Cash Flow from Investing Activities			
Proceed disposal of property plant and equipment		550,000	-
Additions to property, plant and equipment		(5,957,999)	(3,370,481)
Additions to intangible assets		<u>(48,750)</u>	<u>(552,750)</u>
Net cash flow from investing activities		(5,456,749)	(3,923,231)
CASH FLOW FROM FINANCING ACTIVITIES			
Change in deferred income – projects funds		1,385,758	(5,255,981)
Net cash inflow from financing activities		<u>1,385,758</u>	<u>(5,255,981)</u>
Increase in cash resources		63,844,264	47,837,474
Cash and Cash Equivalent at Beginning of Year		<u>78,838,218</u>	<u>31,000,744</u>
Cash and Cash Equivalent at End of Year	8	<u><u>142,682,482</u></u>	<u><u>78,838,218</u></u>



STATEMENT OF CHANGES IN RESERVES

Year Ended 31 March 2020

	Accumulated Surplus	Capital Reserve	Revaluation Reserve	Total
	\$	\$	\$	\$
Balances at 1 April 2018	262,159,044	74,068,693	140,945,766	477,173,503
Surplus for the year	75,170,770	-	-	75,171,020
Other comprehensive income,	(23,167,000)	-	-	(23,167,000)
Total comprehensive income	<u>52,003,770</u>	<u>-</u>	<u>-</u>	<u>52,003,770</u>
Balances at 31 March 2019,	314,162,814	74,068,693	140,945,766	529,177,273
Surplus for the year	62,629,004	-	-	62,629,004
Other comprehensive income	(63,075,000)	-	-	(63,075,000)
Total comprehensive loss	<u>(445,996)</u>	<u>-</u>	<u>-</u>	<u>(445,996)</u>
Balances at 31 March 2020	<u>313,716,818</u>	<u>74,068,693</u>	<u>140,945,766</u>	<u>528,731,277</u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

1. The Authority

The Water Resources Authority was established under the Water Resources Act of 1995. The Act became effective as of April 7, 1996.

Its main objective is to ensure the sustainability of the water resources of Jamaica and the resilience of the nation to floods and drought. The main activities for achieving these are water resources monitoring, planning, allocation, regulation and the promotion of water conservation.

In July 1985 the functions and duties of the Authority were transferred from the Ministry of Public Utilities and Transport to the Ministry of Agriculture. However, in 1989, the Ministry of Public Utilities and Transport again assumed responsibility of the Authority. The Water Resources Authority is currently being funded by subventions from the Ministry of Economic Growth and Job Creation.

The registered office of the Authority is situated at Hope Gardens, Kingston 7, Jamaica.

2. Significant Accounting Policies

The principal accounting policies applied to the preparation of these financial statements are set out below. These policies have been applied to all the years presented, unless otherwise stated.

2.1 Compliance and basis of preparation

These financial statements have been prepared in accordance with and comply with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). The financial statements have been prepared under the historical cost convention.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in the process of applying the Authority's accounting policies. Although these estimates are based on management's best knowledge of current events and actions, actual results could differ from those estimates

2.2 New and revised standards effective for the current year

Interpretations and amendments to published standards effective in the current year that are relevant to the Authority

In the current year the Authority has applied new and amended IFRS issued by the International Accounting Standards Board (IASB) that are mandatorily effective for the accounting period that begins on or after 1 January 2019.

The application of IFRS 16 *Leases* has had no significant impact on these financial statements. The application of other new and amended has not had any impact on the amounts reported or the presentation and disclosures in these financial statements but may impact the accounting for future transactions and arrangements.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies

2.2 New and revised standards effective for the current year (cont'd)

Interpretations and amendments to published standards effective in the current year that are relevant to the Authority (cont'd)

- ***Application of IFRS 16 - Leases***

In the current year the Authority has applied IFRS 16 that is effective for annual periods beginning on or after 1 January 2019.

IFRS 16 introduces new or amended requirements with respect to lease accounting. It introduces significant changes to lessee accounting by removing the distinction between operating and finance lease and requiring the recognition of a right-of-use asset and a lease liability at commencement for all leases, except for short-term leases and leases of low value assets. In contrast to lessee accounting, the requirements for lessor accounting have remained largely unchanged. Details of the new accounting policy are described in note 4. The impact of the adoption of IFRS 16 on the Authority's financial statements is described below.

The date of initial application of IFRS 16 for the Authority is 1 April 2019.

Impact of the new definition of a lease

The Authority has made use of the practical expedient available on transition to IFRS 16 not to reassess whether a contract is or contains a lease. Accordingly, the definition of a lease in accordance with IAS 17 and IFRIC 4 will continue to be applied to those leases entered or changed before 1 April 2019.

The change in definition of a lease mainly relates to the concept of control. IFRS 16 determines whether a contract contains a lease on the basis of whether the customer has the right to control the use of an identified asset for a period of time in exchange for consideration. This is in contrast to the focus on 'risks and rewards' in IAS 17 and IFRIC 4.

The Authority applies the definition of a lease and related guidance set out in IFRS 16 to all lease contracts entered into or changed on or after 1 April 2019 (whether it is a lessor or a lessee in the lease contract). The Authority has carried out an assessment of all its leases in implementation of the new standard which has shown that the new definition in IFRS 16 will not change the scope of contracts that meet the definition of a lease for the Authority.

Impact on Lessee Accounting

(a) Former operating leases

IFRS 16 changes how the Authority accounts for leases previously classified as operating leases under IAS 17, which were off balance sheet.

Applying IFRS 16, for all leases (except as noted below), the Authority:

(i) Recognises right-of-use assets and lease liabilities in the statement of financial position, initially measured at the present value of the future lease payments, with the right-of-use asset adjusted by the amount of any prepaid or accrued lease payments in accordance with IFRS 16:C8(b)(ii);

(ii) Recognises depreciation of right-of-use assets and interest on lease liabilities in profit or loss in the statement of comprehensive income;



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies

2.2 New and revised standards effective for the current year (cont'd)

Interpretations and amendments to published standards effective in the current year that are relevant to the Authority (cont'd)

- **Application of IFRS 16 – Leases (cont'd)**

(iii) Separates the total amount of cash paid into a principal portion (presented within financing activities) and interest (presented within financing activities) in the statement of cash flows.

Lease incentives (e.g. rent free period) are recognised as part of the measurement of the right-of-use assets and lease liabilities whereas under IAS 17 they resulted in the recognition of a lease incentive, amortised as a reduction of rental expenses on a straight line basis.

Under IFRS 16, right-of-use assets are tested for impairment in accordance with IAS 36.

For short-term leases (lease term of 12 months or less) and leases of low-value assets (for example, tablets and personal computers, small items of office furniture and telephones), the Authority has opted to recognise a lease expense on a straight-line basis as permitted by IFRS 16. This expense is presented within lease and rental expenses in profit or loss.

Impact on Lessor Accounting

IFRS 16 does not change substantially how a lessor accounts for leases. Under IFRS 16, a lessor continues to classify leases as either finance leases or operating leases and account for those two types of leases differently. However, IFRS 16 has changed and expanded the disclosures required, in particular regarding how a lessor manages the risks arising from its residual interest in leased assets.

Under IFRS 16, an intermediate lessor accounts for the head lease and the sublease as two separate contracts. The intermediate lessor is required to classify the sublease as a finance or operating lease by reference to the right-of-use asset arising from the head lease (and not by reference to the underlying asset as was the case under IAS 17).



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies

2.2 New and revised standards effective for the current year (cont'd)

New and amended standards and Interpretations with no impact on the authority

The application of the following new and amended standards and interpretation have not had any impact on the amounts reported or the presentation and disclosures in these financial statements but may impact the accounting for future transactions and arrangements.

		Effective for annual periods beginning on or after
<u>New Standards</u>		
IFRS 16	Leases	1 January 2019
<u>Amendments to Standards</u>		
IFRS 9	Financial Instruments Amendments regarding prepayment features with negative compensation and modifications of financial liabilities	1 January 2019
IFRS 2, 11, IAS 12, 23,	Amendments arising from 2015 – 2017 Annual Improvements to IFRS - Measurement of previously held interest in a Joint Operation (IFRS3 & 11); Income tax consequences of dividends (IAS 12); Borrowing costs eligible for capitalisation (IAS 23)	1 January 2019
IAS 19	Employee Benefits -Amendments regarding Plan Amendments, Curtailments or Settlements	1 January 2019
IAS 28	Investments in Associates - Amendments regarding long –term interest in associates and joint ventures	1 January 2019
<u>New Interpretation</u>		
IFRIC 23	Uncertainty over Income Tax Treatments	1 January 2019



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies

Standards and amendments to published standard that are not yet effective and have not been early adopted by the authority

At the date of authorisation of these financial statements, the following Standards and Interpretations were in issue but not effective or early adopted for the financial period being reported on:

	Effective for annual periods <u>beginning on or after</u>
<u>New Standards</u>	
IFRS 17 Insurance Contracts	1 January, 2021
<u>Revised Standards</u>	
IFRS 3 Business Combinations	
- Definition of a business	1 January 2020
IFRS 7, 9, Financial Instruments – Disclosures; Financial IAS 39 Instruments; Financial Instruments – Recognition and Measurement	
- Amendments regarding pre-replacement issues in the context of the IBOR reform	1 January 2020
IFRS 10, Consolidated Financial statements; Investments in IAS 28 Associates and Joint Ventures	
- Amendments regarding the sale or contribution of assets between an investor and its associate or joint venture	Deferred indefinitely by IASB
IAS 1, 8 Presentation of Financial Statements; Accounting Policies, Changes in Accounting Estimates and Errors	
- Amendments regarding the definition of Material	1 January 2020
<u>Conceptual Framework of Financial Reporting</u>	1 January 2020

Of the above, the following are considered relevant to the operations of the Authority and are likely to impact amounts reported in the Authority's financial statements:

- **Amendments to IAS1 and IAS 8 Definition of Material**

The amendments are intended to make the definition of material in IAS 1 easier to understand and are not intended to alter the underlying concept of materiality in IFRS Standards. The concept of 'obscuring' material information with immaterial information has been included as part of the new definition. The threshold for materiality influencing users has been changed from 'could influence' to 'could reasonably be expected to influence'. Further, the reference to 'primary users' instead of 'users' in the original standard helped to narrow a wide interpretation of the word 'users'. The definition of material in IAS 8 has been replaced by a reference to the definition of material in IAS 1. In addition, the IASB amended other Standards and the Conceptual Framework that contain a definition of material or refer to the term 'material' to ensure consistency. The amendments are applied prospectively for annual periods beginning on or after 1 January 2020, with earlier application permitted if disclosed.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies

Standards and amendments to published standard that are not yet effective and have not been early adopted by the Authority (cont'd)

- **Conceptual Framework for Financial Reporting (Issued March 2018)**

The revised Conceptual Framework for Financial Reporting (the Conceptual Framework) is not a standard. Its purpose is to assist the IASB in developing standards, to help preparers develop consistent accounting policies if there is no applicable standard in place and to assist all parties to understand and interpret the standards. It sets out a comprehensive set of concepts for financial reporting, standard setting, and guidance for preparers in developing consistent accounting policies and assistance to others in their efforts to understand and interpret the standards. New concepts, clarification of important concepts, updated definitions and recognition criteria for assets and liabilities are included.

2.4 Summary of accounting policies

The principal accounting policies applied in the presentation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

(a) Foreign currency translation

(i) Functional and presentational currency

Items included in the financial statements are measured using the currency of the primary economic environment in which the entity operates (the functional currency) the financial statements are presented in the Jamaican dollars, which is the functional and presentation currency.

(ii) Transaction and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of transactions. Foreign exchange gains and losses resulting from the settlement of such transaction and from the translation at the year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the statement of changes in net assets available for benefits. At the year-end date, monetary assets and liabilities denominated in foreign currency are translated using the closing mid-point rate of exchange. Unrealised foreign exchange differences on unsettled foreign currency monetary assets and liabilities are recognized in the statement of changes in net assets available for benefits.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies (Cont'd):

2.4 Summary of accounting policies (Cont'd)

(b) Investment securities

Investment securities are measured at fair value by reference to quoted market prices when available. If quoted market prices are not available, then fair values are estimated on the basis of pricing models or other recognised valuation techniques.

(c) Receivables

Receivables are carried at cost which approximates the fair value of those assets.

(d) Revenue recognition

Revenue from contracts with customers is recognised when control of the goods or services are transferred to the customer at an amount that reflects the consideration to which the Authority expects to be entitled in exchange for those goods or services.

Deferred Revenues

Deferred revenues is recognised when cash payments are received or due in advance of performance obligations in relation to goods or services transferred to customers and is classified as current where there are no significant financing components. Revenues expected to be earned over more than twelve months are classified in non-current liabilities. Deferred revenue is amortised to income over the period to which the contract relates.

Interest income

Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount on initial recognition.

Other revenue from sources other than customer contracts and interest primarily relates to miscellaneous receipts. Revenue from these sources are not considered material.

Subventions and Grants

Government of Jamaica Subventions:

Recurring grants or subvention received from the Government of Jamaica are recognised as they are received.

Grants and contributions received specifically earmarked to purchase, construct or otherwise acquire non-current assets are recognised as deferred revenue in the statement of financial position and transferred to income on a systematic and rational basis over the useful lives of the related assets.

(e) Expenses

All expenses are recognised on the accrual basis.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies (Cont'd):

2.4 Summary of accounting policies (Cont'd)

(f) Financial instruments

Financial Assets

The Authority classifies its financial assets at amortised cost as these assets are held only within a business model the objective of which is to collect the contractual cash flows and the contractual terms give rise to cash flows that are solely payments of principal and interest. Financial assets at amortised cost include cash and bank balances, investment and receivables.

A loss allowance for expected credit losses on receivables and other financial assets that are measured at amortised cost is assessed applying the expected credit loss model (ECL). The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

Lifetime ECL is recognised when there has been a significant increase in credit risk since initial recognition. However, if the credit risk on the financial instrument has not increased significantly since initial recognition, the Authority measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

For financial assets, the expected credit loss is estimated as the difference between all contractual cash flows that are due to the Authority in accordance with the contract and all the cash flows that the Authority expects to receive, discounted at the original effective interest rate.

Financial assets are written off when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery. Subsequent recoveries of amounts previously written off are recognised in surplus or deficit.

Financial liabilities

These are classified as "other financial liabilities".

Financial liabilities are initially measured at fair value, net of transaction costs (where applicable). They are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective yield basis except for short-term liabilities when the recognition of interest would be immaterial.

The Authority's financial liabilities comprise accounts payable and other payables

(g) Cash and cash equivalents

Cash and cash equivalents include cash in hand, demand deposits, other short-term highly liquid investments with original maturities of three months or less.

(h) Use of estimates and judgments

The preparation of financial statements in accordance with International Financial Reporting Standards requires the Board of Directors to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. These estimates are based on historical experience and the Board of Directors' best knowledge of current events and actions and are reviewed on an ongoing basis. Actual results could differ from those estimates.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

2. Significant Accounting Policies (Cont'd):

2.4 Summary of accounting policies (Cont'd)

(i) Pension Scheme costs

The Authority participates in a defined benefit contribution pension scheme, the assets of which are held separately from those of the Authority, however, the net value of the fund and the actuarially determined employer contribution costs are reflected in the books of the Authority.

(j) Property, plant and equipment

(i) Items of property, plant and equipment, excepting building are stated at cost, less accumulated depreciation and impairment losses. The directors however, revalued the building during the current year and indicated that the current book value represents the replacement value.

(ii) Depreciation is calculated on the straight-line basis at annual rates to write down the assets to their estimated residual values over their expected useful lives. The depreciation rates are as follows:

Computer hardware	25%
Computer software	25%
Technical and scientific equipment	20%
Buildings	2.50%
Furniture and fixtures	10%
Motor vehicles	20%
Capital projects	2.50%

Land is not depreciated and is stated at cost. Depreciation rates estimated residual values and expected useful lives are re-assessed at each financial year end.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

3.1 Retirement Benefits Pension Scheme

The Authority participates in a defined benefit pension plan which is open to all permanent employees and administered by Sagicor Life Jamaica Limited.

	2020 \$' 000	2019 \$' 000
Assets recognized in the Statement of financial position -		
Retirement Benefit Asset- Pension plan	190,337	239,744
Income recognized in the profit or loss	(3,844)	(8,484)
Expense/(income) recognized in other comprehensive income	<u>63,075</u>	<u>23,167</u>

Actuarial assumptions

The key financial assumptions used in valuing the retirement benefit obligations at the reporting date are as follows:

	2020 %	2019 %
Discount rate	6.5	7.0
Salary increase rate	5.0	5.0
Post retirement increases in pension	<u>1.5</u>	<u>1.5</u>

Demographic assumptions include assumed retirement age of 60 for members (normal retirement age). Assumptions regarding future mortality are based on RP-2014 Employee and Healthy Annuitant Mortality Rates projected to the measurement date using Society of Actuaries' Scale MP-2014 (2019: 1994 Group Annuitant Mortality rates projected to the measurement date using the Society of Actuaries' Scale AA).



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

3.1 Retirement Benefits Pension Scheme (Cont'd)

Pension Plan Benefits

The pension plan is legally separate from the Authority and is administered by Sagicor Life Jamaica Limited.

The valuation of the plan's assets and the present value of the defined benefit obligation at March 31, 2020 was carried out by Eckler Jamaica Limited, the Principal of which is a Fellow of the Society of Actuaries. The present value of the defined benefit obligation and the related asset service cost were measured using the projected unit credit method.

The plan is funded by the employees' contributions at 5% of salary with the option to contribute an additional 5% and employer contribution as recommended by the independent actuaries. Pension at normal retirement age is based on 2% of final 3 year average salary per year of pensionable service, plus any declared bonus pensions. The defined benefit asset recognized in the Balance Sheet was determined as follows:

	2020	2019
	\$' 000	\$' 000
Fair value of plan assets	418,647	426,810
Present value of funded obligations	<u>(228,310)</u>	<u>(187,066)</u>
	190,337	239,744
Effect of asset ceiling	-	-
	<u>190,337</u>	<u>239,744</u>

The movement in the net retirement benefit asset in the year is as follows:

	2020	2019
	\$' 000	\$' 000
Net defined benefit asset at beginning of the year	239,744	246,038
Amounts credited to income	3,844	8,484
(Expense)/income recognised in other comprehensive income	(63,075)	(23,167)
Employer contributions	<u>9,824</u>	<u>8,389</u>
Net defined benefit asset at end of year	<u>190,337</u>	<u>239,744</u>

The Movement in the fair value of plan assets during the year is as follows:

	2020	2019
	\$' 000	\$' 000
At beginning of year	426,810	384,017
Employer's contributions	9,824	8,389
Members' contributions	6,139	5,016
Interest on plan assets	30,047	28,917
Benefits paid	(6,158)	(2,855)
Administrative expenses	(1,803)	(1,600)
Re-measurement (loss)/gain of the plan assets	<u>(46,212)</u>	<u>4,926</u>
At end of year	<u>418,647</u>	<u>426,810</u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

3.1 Retirement Benefits Pension Scheme (Cont'd)

Pension Plan Benefits (Cont'd)

The movement in the present value of the defined benefit obligation during the year is as follows:

	2020	2019
	\$' 000	\$' 000
At beginning of year	(187,066)	(137,979)
Current service cost	(11,366)	(8,618)
Interest cost	(13,034)	(10,213)
Member's contributions	(6,139)	(5,016)
Actuarial gains/(losses) on obligations:		
Due to experience	5,053	(3,908)
Due to financial assumptions	(21,927)	(24,187)
Due to demographic assumptions	11	-
Benefits paid	6,158	2,855
At end of year	<u>(228,310)</u>	<u>(187,066)</u>

The amounts recognized in profit or loss is as follows:

	2020	2019
	\$' 000	\$' 000
Current service cost	11,366	8,618
Interest cost on present value obligations	13,034	10,213
Interest (income) on plan assets	(30,047)	(28,915)
Administrative expenses	1,803	1,600
Total included in staff costs (Note 16)	<u>(3,844)</u>	<u>(8,484)</u>

The credit of \$3.844 million (2019: \$8.484 million) was included in administrative expense in the profit or loss in the statement of comprehensive income.

The amounts recognized as other comprehensive income are as follows:

	2020	2019
	\$' 000	\$' 000
Re-measurement of the defined benefit liability	16,863	28,093
Re-measurement loss on the plan assets	46,212	(4,926)
Total charge included in other comprehensive income	<u>63,075</u>	<u>23,167</u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

3.1 Retirement Benefits Pension Scheme (Cont'd)

Pension plan benefits (Cont'd)

The assets of the fund were invested in Sagicor Pooled Investments Funds as follows:

	Fair value of asset 2020 \$M	% of Total 2020 %	Fair value of asset 2019 \$M	% age of Total 2019 %
CPI	31.64	7.56	27.20	6.37
Global market Fund	16.59	3.96	15.39	3.60
Equity	152.99	36.54	158.97	37.24
Mortgage and real estate	89.37	21.35	100.07	23.45
Fixed income	30.55	7.30	29.90	7.01
Foreign currency	65.06	15.54	62.86	14.73
Money market	32.45	7.75	32.43	7.60
	<u>418.65</u>	<u>100.00</u>	<u>426.81</u>	<u>100.00</u>

The expected return on plan assets was determined by considering the expected returns available on the assets underlying the current investment policy. Expected yields on fixed interest investments are based on gross redemption yields as at the reporting date. Expected returns on equity and property investments reflect long-term real rates of return experienced in the respective markets.

The three year trend for the surplus/(deficit) in the plan, as well as actuarial (gains)/losses is as follows:

	2020 \$'000	2019 \$'000	2018 \$'000
Present value of obligation	(228,310)	(187,066)	(137,979)
Fair value of plan assets	418,647	426,810	384,017
	<u>190,337</u>	<u>239,744</u>	<u>246,038</u>
Experience adjustments -			
Defined benefit obligation -loss	16,863	28,093	38,708
Fair value of plan assets - (loss)/gain	(46,212)	4,926	27,085



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

3.1 Retirement Benefits Pension Scheme (Cont'd)

Pension plan benefits (Cont'd)

Sensitivity analysis at the end of the reporting period for key economic assumptions are as follows:

Effect on the Present Value of Obligations – increase/(decrease)

	2020	2019
	\$' 000	\$' 000
Increase in discount rate - + 1 %	(40,986)	(32,996)
Decrease in discount rate - - 1%	54,811	43,777
Pension increases - + 1%	26,857	21,086
Pension decreases - - 1%	(23,024)	(18,236)
Salary increase rate - + 1 %	26,930	22,491
Salary decrease rate - - 1%	(22,788)	(19,013)
Increase of one year in life expectancy	5,260	4,050

Membership summary

	2020	2019
	\$	\$
Active members	50	53
Deferred pensioners	3	2
Pensioners	13	12
All participants	<u>66</u>	<u>67</u>

The weighted average duration of the defined benefit obligation as at March 31, 2020 applicable to active members and deferred pensioners is 21.4 years (2019: 21.1 years).

The estimated pension contribution expected to be paid into the plan by the Authority for the next financial year is \$8.3 million (2019: 8.4 million) based on the employer's contribution rate of 10% of pensionable salaries..

NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

4. Property, plant and equipment										
	Building (V)	Furniture & Fixtures	Computer Hardware	Stations	Technical & Scientific Equipment	Motor Vehicles	Total			
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
At Cost/Valuation (V):										
1 April 2018	120,000,000	13,494,817	19,688,865	32,792,449	35,110,823	32,503,880	253,590,834			
Additions	-	557,719	2,016,620	-	796,142	-	3,370,481			
31 March 2019	120,000,000	14,052,536	21,705,485	32,792,449	35,906,965	32,503,880	256,961,315			
Additions	249,350	1,467,052	2,512,420	-	1,729,177	-	5,957,999			
(Disposal)	-	-	-	-	-	(3,310,095)	(3,310,095)			
31 March 2020	120,249,350	15,519,588	24,217,905	32,792,449	37,792,449	29,193,785	259,609,219			
Accumulated Depreciation:										
1 April 2018	-	9,729,797	18,847,711	2,259,828	16,667,769	18,800,928	66,306,033			
Charge for year	3,000,000	746,157	297,289	819,811	3,371,413	3,442,830	11,677,500			
31 March 2019	3,000,000	10,475,954	19,145,000	3,079,639	20,039,182	22,243,758	77,983,533			
Disposal	-	-	-	-	-	(3,310,095)	(3,310,095)			
Charge for the year	3,006,234	812,872	799,763	819,811	3,544,276	4,095,850	13,078,806			
31 March 2020	6,006,234	11,288,826	19,944,763	3,899,450	23,583,458	23,029,513	87,752,244			
Carrying Amount										
31 March 2020	114,243,116	4,230,762	4,273,142	28,892,999	14,052,684	6,164,272	171,856,975			
31 March 2019	117,000,000	3,576,528	2,560,485	29,712,810	15,867,783	10,260,122	178,977,782			

The property was valued by DC Tavares Realty as at March 31, 2019. The valutors arrived at a market value of \$120m and a replacement cost of \$171m. The directors are of the opinion that the market value has not changed since the last valuation.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

5. Intangible Assets

	Computer Software 2020 \$	Computer Software 2019 \$
At Cost:		
April 1	35,604,197	35,051,447
Additions	48,750	552,750
March 31	<u>35,652,947</u>	<u>35,604,197</u>
Amortisation:		
April 1	22,505,164	18,784,300
Charge for the year	6,262,240	3,720,864
March 31	<u>28,767,404</u>	<u>22,505,164</u>
Carrying Amount	<u>6,885,543</u>	<u>13,099,033</u>

6. Receivable and prepayments

	2020 \$	2019 \$
Motor vehicle repair loans	5,124,665	7,505,295
Computer loans	546,828	640,170
Staff loans	147,928	78,867
Withholding tax recoverable	840,936	838,046
Interest receivable	92,978	97,680
Due from BOJ	-	700,931
Deposit on fixed asset	432,329	432,329
Trade receivables	<u>20,528,626</u>	<u>16,392,563</u>
	27,714,290	26,685,881
Prepayments	<u>2,879,678</u>	<u>1,664,982</u>
	<u>30,593,968</u>	<u>28,350,863</u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

7. Investment

Investment comprises the following:

	2020 \$	2019 \$
Managed funds	5,041,995	4,839,537
	<u>5,041,995</u>	<u>4,839,537</u>

8. Cash and Cash Equivalents

	2020 \$	2019 \$
Bank of Nova Scotia - current account	119,157,607	62,518,107
Motor vehicle repair loan account	11,983,159	14,624,830
Capital projects account	10,407,819	-
Computer loan	1,122,372	1,683,756
Petty cash	11,525	11,525
	<u>142,682,482</u>	<u>78,838,218</u>

Explanatory note required

9. Capital Reserve

This represents a valuation of stations built by the Authority previously excluded from the accounts. Values were determined by qualified internal valuers.

10. Revaluation Reserve

The revaluation reserve was a result of revaluing the office buildings. The movement on the reserve was as follows:

	2020 \$	2019 \$
Balance 1 April and March 31	<u>140,945,766</u>	<u>140,945,766</u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

11. Deferred income - Capital projects subvention

	2020	2019
	\$	\$
Balance of unused subvention at 1 April	-	1,044,720
Add funds received	-	-
	<hr/>	<hr/>
		1,044,720
Less expenditure on capital projects for year	-	(1,044,720)
	<hr/>	<hr/>
Balance of unused subvention 31 March	<hr/> <hr/>	<hr/> <hr/>

12. Deferred income - Capital project grant

	2020	2019
	\$	\$
Balance at beginning of year	6,701,354	7,060,266
Amortisation to income (Note 15)	(358,912)	(358,912)
Balance at end of year	<hr/> <hr/>	<hr/> <hr/>
	6,342,442	6,701,354

Deferred grant income represents the value of assets transferred to the Authority, which were purchased and used by various projects and also includes capital grant received for the construction of the Hubert Chin Building. This account is being written down by an amount equivalent to the depreciation charged on these assets and is included in other operating income.

13. Deferred income - Other Projects Fund

	2020	2019
	\$	\$
Development of Flood Warnings project	2,086,689	-
WRA/IDB Master Plan project	-	700,931
	<hr/>	<hr/>
	2,086,689	700,931
	<hr/> <hr/>	<hr/> <hr/>

14. Payables and Accruals

	2020	2019
	\$	\$
Accruals	6,076,546	4,777,350
Administrative expenses	4,161,009	2,492,525
	<hr/>	<hr/>
	10,237,555	7,269,875
	<hr/> <hr/>	<hr/> <hr/>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

15. Other Operating Income

	2020	2019
	\$	\$
Deferred income amortised (Note 12)	358,912	358,912
Volume Base Fees	59,201,625	60,663,875
Well applicant fees	8,096,986	7,403,900
Reimbursements of expenditures	2,798,265	1,977,563
Interest income	382,668	269,791
Gain on disposal of property, plant and equipment	550,000	-
Other Income	<u>44,552</u>	<u>77,494</u>
	<u><u>71,433,008</u></u>	<u><u>70,751,535</u></u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

16. Expense by Nature

	2020	2019
	\$	\$
Salaries and related costs (Note 16 (a))	97,920,845	101,954,357
Staff benefits	18,104,109	15,833,735
Income related to post-employment defined benefit plan	(3,844,000)	(8,484,000)
Other staff related - net	(977,003)	(172,224)
Accommodation, lease, rental & hirage	2,391,265	1,926,333
Telephone	2,420,238	2,324,159
Utility expenses	6,301,158	4,676,355
Motor vehicle expenses	5,943,163	5,111,210
Repairs, materials and related expenses	13,582,534	4,292,404
Cleaning & sanitation	131,458	160,500
Project write off	-	(1,044,470)
Haulage	46,899	81,000
Security	2,414,219	1,782,408
Postage, stationery, printing & office expense	6,235,036	4,381,548
GCT expense	-	6,427,641
Professional fees	12,186,853	10,019,139
Audit fees	1,181,220	1,095,143
Licenses & taxes	292,206	207,023
Foreign travel	246,892	264,726
Travel and subsistence	35,643,548	32,793,453
Bank charges	444,569	347,498
Meals & entertainment	1,077,892	1,164,608
Training	1,054,500	2,363,619
Board members fee	971,900	1,048,458
Miscellaneous purchases	75,311	852,347
Depreciation and amortisation	19,341,045	15,398,364
Insurance – property	614,585	613,754
Advertising	3,679,757	2,664,424
	<u>225,818,100</u>	<u>208,083,515</u>

(a) Staff welfare

	2020	2019
	\$	\$
Salaries, wages and related expenses	88,706,879	94,439,584
Payroll taxes - employer's portion	<u>7,551,868</u>	<u>7,514,773</u>
	<u>96,258,747</u>	<u>101,954,357</u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

17. Related Party Transactions

A related party is one which controls or exercises significant influence over, or is controlled or significantly influenced by, the Authority in making financial or operating decisions or, along with the Authority, is subject to common control or significant influence.

	2020 \$' 000	2019 \$' 000
(a) Transactions with related parties		
Directors' fees	971	1,048
Directors' emoluments	<u>5,586</u>	<u>5,887</u>
(b) Key management compensation		
	2020 \$' 000	2019 \$' 000
Short-term employee benefit-		
Management remuneration	17,903	15,391
Other	-	-
	<u>17,903</u>	<u>15,391</u>
Pension	-	1,280
	<u>17,903</u>	<u>16,671</u>

18. Fair value estimation

Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction. Market price is used to determine fair value where an active market exists as it is the best evidence of the fair value of a financial instrument. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. Where no market price is available, the fair values presented have been estimated using present values or other estimation and valuation techniques based on market conditions existing at balance sheet dates.

The values derived from applying these techniques are significantly affected by the underlying assumptions used concerning both the amounts and timing of future cash flows and the discount rates. The following methods and assumptions have been used:

- (1) Investment securities classified as available-for-sale are measured at fair value by reference to quoted market prices when available.
- (2) The fair value of liquid assets and other assets maturing within three months is assumed to approximate their carrying amount. This assumption is applied to liquid assets and the short-term elements of all other financial assets and financial liabilities.
- (3) The fair value of variable rate financial instruments is assumed to approximate their carrying amounts.
- (4) Equity securities for which fair values cannot be measured reliably are recognized at cost less impairment.



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

18. Fair value estimation (cont'd)

The estimated fair values of the following financial instruments do not differ from their carrying values.

	2020		2019	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	\$'000	\$'000	\$'000	\$'000
Investment securities -				
Amortised cost	5,041	5,041	4,840	4,840

- Level 1 includes those instruments which are measured based on quoted prices in active markets for identical assets and liabilities. These mainly comprise of equity shares traded on the Jamaica Stock Exchange and are classified as available-for-sale and financial assets at fair value through profit or loss.
- Level 2 includes those instruments which are measured using inputs other than quoted prices that are observable for the instrument, directly or indirectly. The fair value for these instruments is determined by using valuation techniques and maximizes the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.
- If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3.

The Authority has no financial instruments that are measured at fair value after initial recognition.

19. Financial risk management

The Authority's activities expose it to a variety of financial risks: market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The Authority's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Authority's financial performance.

The Ministry of Finance are ultimately responsible for the establishment and oversight of the Authority's risk management framework. The Managers provide guidelines for overall risk management and areas, such as foreign exchange risk, interest rate risk and credit risk, and investment of excess liquidity. The Managers manage and monitoring risks, as follows:



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

19. Financial risk management (cont'd)

(a) Market risk

The Authority does not take exposure to market risk.

(i) Currency risk

Currency risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.

The Authority is exposed to currency risk due to fluctuation in the exchange rates on balances that are denominated in currencies other than the Jamaican Dollar.

Management ensures that the net exposure is kept to an acceptable level by monitoring all currency positions and ensuring adherence to predetermined limits.

There were no foreign currency related liabilities at the reporting date

(ii) Interest rate risk

Interest rate risk is the risk that the future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

Floating rate instruments exposes the Authority to cash flow interest risk whereas fixed interest rate instruments expose the Authority to fair value interest risk.

The Authority's exposure to interest rate risk is affected by its holding in cash and bank deposits. In respect of liabilities, the Authority does not enter into transactions involving interest costs and is therefore not affected by interest rate risk on liabilities.

The following table indicates the level of interest rate exposure of the Authority:

	2020 \$	2019 \$
Managed funds	5,041,995	4,839,537
Bank Saving Accounts	<u>13,105,531</u>	<u>16,308,586</u>
Total	<u><u>18,147,526</u></u>	<u><u>21,148,123</u></u>



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

19. Financial risk management (cont'd)

(a) Market risk (cont'd)

(ii) Interest rate risk

Interest rate sensitivity analysis

The sensitivity analysis below has been determined based on the exposure to variable interest rate financial instruments at the end of the reporting period. The exposure is substantially on holdings of US dollar fixed deposits. The analysis is prepared assuming the amount outstanding at the end of the reporting period was outstanding for the whole year. 100 basis point increases or 100 basis point decreases (2019: 100 basis points increase or 100 points decrease) is used when reporting interest rate risk internally and represents management's assessment of the reasonably possible change in interest rates.

The following table indicates sensitivity to a reasonable possible change in interest rate with all other variables held constant. The analysis is prepared assuming the amount of assets outstanding at the end of the reporting period was outstanding for the whole year.

	2020 \$	2019 \$
Effect on profit or loss – increase/(decrease) in net surplus		
- increase 100 (2019: 100) basis points	<u>180,148</u>	<u>211,481</u>
- decrease 100 (2019: 100) basis points	<u>(180,148)</u>	<u>(211,481)</u>

(iii) Price risk

Price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market price, other than those arising from currency or interest rate risk, whether those changes are caused by factors specific to the instrument or affecting all similar instruments in the market.

The Authority is not exposed to price risk.

(b) Credit Risk

Credit risk is the risk that a party to a financial instrument will fail to discharge an obligation and cause the other party to incur a financial loss.

Investments are allowed principally in secure liquid instruments and with counterparties that the Managers believe do not offer any significant credit risk. Based on their assessment, the Managers do not expect any counterparties to fail to meet their obligations. The managers manage credit risk by having an investment policy which includes written authority levels and prior approval by the Ministry of Finance of any investment transaction.

At the date of the statement of financial position, there were significant concentrations of credit risk in one financial institution. There are no off-balance-sheet investments and, therefore, the maximum exposure to credit risk is represented by the total carrying amount of financial assets which amounted to \$170.23 million (2019: \$110.36 million).



NOTES TO THE FINANCIAL STATEMENTS

Year Ended 31 March 2020

19. Financial risk management (cont'd)

(c) Liquidity Risk

Liquidity risk, also referred to as funding risk, is the risk that the authority will encounter difficulty in raising funds to meet commitments associated with financial instruments. Liquidity risk may result from an inability to sell a financial asset quickly at, or close to, its fair value. Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, and the availability of funding through an adequate amount of committed facilities. Due to the nature of the authority, which accumulates and invests funds to pay liabilities which crystallise principally in the short term and in a measured predictable manner, the Managers believe liquidity risk for the Authority is negligible.



SENIOR EXECUTIVES' COMPENSATION

NAMES & POSITIONS OF SENIOR EXECUTIVES	SALARY (\$)	GRATUITY OR PERFORMANCE INCENTIVE (\$)	TRAVELING ALLOWANCE OR VALUE OF ASSIGNMENT OF MOTOR VEHICLE (\$)	PENSION OR OTHER RETIREMENT BENEFITS (\$)	OTHER ALLOWANCES (\$)	NON-CASH BENEFITS (\$)	TOTAL (\$)
Mr. Peter Clarke (Managing Director)	5,147,019.00		1,697,148.00				6,844,167.00
Mr. Michael Wilson (Deputy Managing Director)	3,744,299.00		1,697,148.00				5,441,447.00
Ms. Hermine Downer (Director Finance & Accounts)	3,685,025.00		1,697,148.00		1,328,062.00		6,710,235.00
*Mrs. Gail Williams-Lewis (Director Human Resources and Administration)	818,471.00		424,250.00				1,242,721.00

*Emolument for Mrs. Gail Williams-Lewis represents amount paid from January 2020 to March 2020

NOTES

Where contractual obligations and allowances are stated in a foreign currency, the sum in that stated currency must be clearly provided and not the Jamaican equivalent.

1. Other Allowances (including laundry, entertainment, housing, utility, etc.)
2. Where a non-cash benefit is received (e.g. government housing), the value of that benefit shall be quantified and stated in the appropriate column above.
3. Where a non-cash benefit is received (e.g. government housing), the value of that benefit shall be quantified and stated in the appropriate column above.



DIRECTORS' COMPENSATION

POSITION OF DIRECTOR BOARD MEMBERS	FEES (\$)	MOTOR VEHICLE UPKEEP/TRAVELING OR VALUE OF ASSIGNMENT OF MOTOR VEHICLE (\$)	HONORARIA (\$)	ALL OTHER COMPENSATION INCLUDING NON-CASH BENEFITS AS APPLICABLE (\$)	TOTAL (\$)
Dr. Parris Lyew-Ayee (Chairman)	154,800.00				154,800.00
Dr. Michael Taylor	66,800.00				66,800.00
Mr. Michael Brown	66,800.00	39,568.00			106,368.00
Ms. Nadeen Spence	70,400.00	3,166.00			73,566.00
Ms. Stephanie Abrahams	38,600.00	14,744.00			53,344.00
Mr. George Grant	77,400.00	8,094.00			85,494.00
Ms. Georgia Hamilton	66,000.00	7,222.00			73,222.00
Ms. Novlette Howell	77,400.00	8,736.00			86,136.00
Mrs. Allison Ramgolan	98,000.00	7,380.00			105,380.00

NOTES

1. Where a non-cash benefit is received (e.g. government housing), the value of that benefit shall be quantified and stated in the appropriate column above.



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 Water Resources Authority of Jamaica

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