



# 2019

## Annual Report for National Roads Authority



For the 2019 Financial Year  
(Jan 1, 2019 to Dec 31, 2019)



National Roads Authority

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## Section 1 – Foreword

This annual report is for the National Roads Authority of the Cayman Islands ('The NRA'). The report outlines the NRA's performance during the **2019** fiscal year and compares it to the budgeted performance for the corresponding period.

The requirement for an annual report is prescribed under Section 52 of the Public Management and Finance Law (2018 Revision) (PMFL) Section 52 states:

*In respect of each financial year, each statutory authority and government company shall prepare an annual report. An annual report shall report the performance of the authority and compare it with that proposed in the ownership agreement for that financial year and shall include:-*

A summary of the nature and scope of the activities of the authority or company during that financial year;

A summary of the extent to which the strategic goals and objectives of the authority or company described in the annual ownership agreement were achieved;

A summary of the extent to which the ownership performance targets set out in the authority's or company's annual ownership agreement for that financial year have been achieved in that financial year;

The amount of any **equity investment** made by the Governor in Cabinet in the authority or company during the financial year;

The amount of any **capital withdrawals** made by the Governor in Cabinet from the authority or company during the financial year;

The amount of any **dividends or profit distributions** paid by the authority or company during the financial year;

The amount of any **loans** to the authority or company by the Governor in Cabinet during the financial year; and

Details of any **guarantees** relating to the authority or company made by the Governor in Cabinet during the financial year.

The financial statements referred to in subsection 2(d) shall be prepared within two months of the end of the financial year. The financial statements referred to in subsection 2(d) (ii) shall be submitted to the Auditor General for auditing, and the Auditor General shall express an opinion within two months of receipt of the financial statements.

The annual report shall be presented to the Governor in Cabinet by the relevant minister or official member no later than four months after the end of the financial year.

This annual report complies with the requirements of the PMFL and covers three main areas;

1. Service delivery
2. Financial performance
3. Governance

The service delivery section outlines the contributions made by the NRA in furtherance of the Government's policy outcome goals. It also provides commentary which explains material variances in performance when compared to budget.

The financial performance section shows the financial resources the NRA was afforded in the 2019 budget and the inputs purchased to provide services.



The financial performance is presented in the form of financial statements prepared in accordance with the Public Sector Accounting Standards (IPSAS) and the supporting notes to those financial statements.

The report also includes a section on Governance which outlines the NRA's efforts in the areas of risk management, and compliance with various statutory requirements.



## *Message from the Minister*

The NRA is a key policy instrument of this administration's goal to build modern smart infrastructure. I am therefore pleased to present this 2019 annual report which outlines the Authority's achievements during the year; and provide an account for its use of public funds.

The Government has galvanized its commitment to continued investment in improving Grand Cayman roads by earmarking some \$50M in revenue for the five year period 2015 to 2020.

Infrastructure investments which facilitate trade and interconnectivity are a key component of a thriving economy; indeed, the role of the road network as the backbone of commerce is more evident in the Cayman Islands than in many other countries.

Our roads connect our children to schools; workers to their jobs; and efficiently moves goods and services across the Island. It facilitates our power, water and tele-communication infrastructures while providing hundreds of jobs through its continual maintenance and expansion.

Through road infrastructure investment, opportunities are created for new communities, economic development, a more efficient workforce and a greater sense of well-being among the Islands' population. The road network is the single largest, and



most valuable man-made asset owned by the people of the Cayman Islands.

It therefore gives me great comfort to have a team of highly skilled, committed and capable individuals at the helm managing this important asset and delivering this important work.

Through our policy framework, the Government will continue to support the creation of modern, smart infrastructure as a key to future growth and prosperity.

Yours sincerely,

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**Hon. Joseph Xavier Hew, JP, MLA**  
Minister for Commerce, Planning & Infrastructure

## ***Message from the Chairman***

This annual report outlines the NRA's performance in 2019 in relation to the required outputs highlighted in the Ownership Agreement with Cabinet. This report is the first completed under my first year as Chairman of the Board. The Board's main focus during the period was to ensure stability, focus, and direction as the organization delivered on its legislative mandate while supporting the Government's policy outcome goals.

The Board is pleased with the accomplishments of the NRA during this period and is particularly grateful to Mr. Edward Howard who served as Acting Managing Director during this period.

Working with management and staff, the Board hopes to continue to support the NRA as it seeks to adhere to the goals and targets established in the Corporate Strategic Plan.

The Board during 2019 continued to support a capital investment plan aimed at modernizing the NRA's fleet, machinery, and tools. The investment in asset replacements ensures that the NRA will be able to fulfill one of its goals of enhancing service delivery capabilities and operational efficiency.

We firmly endorse the NRA's proactive strategy for the management of the road network. The development of a long range (25 to 30 year) road corridor map along with a 3-year roads development programme stipulated by the NRA Law ensures that the NRA makes sound strategic planning and investments in projects that will ensure sustainable development in these islands for decades to come. Another area that the Board is intently focused on is the maintenance programme for the road network. As we



build more roads we inevitably have more to maintain. The Board is elated that the NRA already has a fully developed pavement management system that catalogues and forecasts future maintenance requirements both time-wise and budget-wise. The pavement management system is most effective in helping Government to reduce future road maintenance costs by proactively forecasting repair needs and recommending repair strategies or countermeasures for key sections of the network before they reach the point of critical failure.

The Board is grateful to our private sector partners and to the management and staff of the NRA for the excellent work carried out in 2019 which made possible the achievements highlighted in this report. We would also like to recognize the support of the Government in providing the policy framework and resources necessary to do our work. The Board remains committed to the continued development of the NRA, and reaffirm its support for the organization and its efforts to deliver the best transportation infrastructure to the people of the Cayman Islands.

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**John Edward Ebanks**

Chairman, NRA Board of Directors



## Message from the Acting Managing Director

I am pleased to present the National Roads Authority (NRA) Annual Report 2019. I would also like to thank the Board and Minister for the continued confidence entrusted in me to lead the Authority during this fiscal year.

This report highlights the NRA's accomplishments via the NRA Law (2016 Revision) as well as the goals and priorities set by the Board and Cabinet via the Ownership Agreement.

Roads contribute greatly to the economic stability of the country by mobility and access providing both access and mobility options. In short, roads allow the movement of people, goods and services.

NRA's continued success in this endeavor is largely dependent on the Authority being adequately funded both in the area of new capital development projects (via Cabinet) but also in the area of recurrent revenue (via the Road Fund). In recent times the current recurrent revenue levels received from the Road Fund has proven to be inadequate to fund the Authority's Operations. With the NRA's road fund revenue being capped, the Authority has had to rely more heavily on the Ministry of Infrastructure to fund a large part of its routine maintenance operations. Adequate funding of the NRA Operations is paramount to ensuring its continued success.

The pace of land development and the growth in vehicles now has the Island at a critical decision phase; there has never been a more critical time than now for the Government to develop a sustainable long range ground transportation plan that offers multi-pronged solutions to the



ground transportation needs of this country for decades to come.

Safer Roads by Design has become a major focus of the NRA. We have taken advantage of our partnership with the International Road Federation (IRF) and increased our involvements with public and private stakeholders in highlighting the Five E's of Road Safety.

In 2019 we continued implementation of a 3-year capital roads development programme aimed at providing short term and quick win solutions to traffic congestion experienced at peak hour. The expansion of the Linford Pierson Highway, Hurley Merren Blvd and minor improvements to other connecting roadways is aimed at offering additional lane capacity and reduced travel times particularly for motorists travelling to and from the eastern districts.

We intend to focus more acutely on customer satisfaction by optimizing the experience of their daily travel on the road network. As we deliver on these commitments, we will keep all vested parties engaged by increasing our communication with our stakeholders and providing more information to the motoring public on our plans, and progress towards improvement of the road network.

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**Edward Howard**  
Acting Managing Director

## Section 2 - Nature and Scope of Activities

The NRA's primary function is the provision of a safe and efficient network of public roads. It has overall responsibility for the planning, construction, and maintenance of public roads. In addition, the NRA has a number of specific functions under the National Roads Authority Law 2004, including:

- Provision of medium to long term plans for road development referred to as a National Roads Plan to be updated every four years.
- Implementation of a management system for planning, organizing, directing and controlling routine and periodic maintenance activities performed by employees of the Authority or through independent contractors.
- Carrying out of construction improvements and maintenance works on national roads.
- Carrying out necessary engineering, traffic, and economic studies that it may consider necessary for the maintenance and improvement of public roads.
- Training, research, or testing activities in relation to any of its functions.
- Additionally, the National Roads Authority provides support services to:
  - Public Works Department to enable that Department to provide an appropriate response to Hurricanes and other national emergencies, and
  - Planning Department for the review of planning applications involving storm water and road related matters and site inspections of constructed projects.

### **Mission of the National Roads Authority**

To provide sustainable transport and promote land development in the Cayman Islands for all stakeholders while having regard to the delivery of the Roads element of the National Development Plan.

### **Vision of the National Roads Authority**

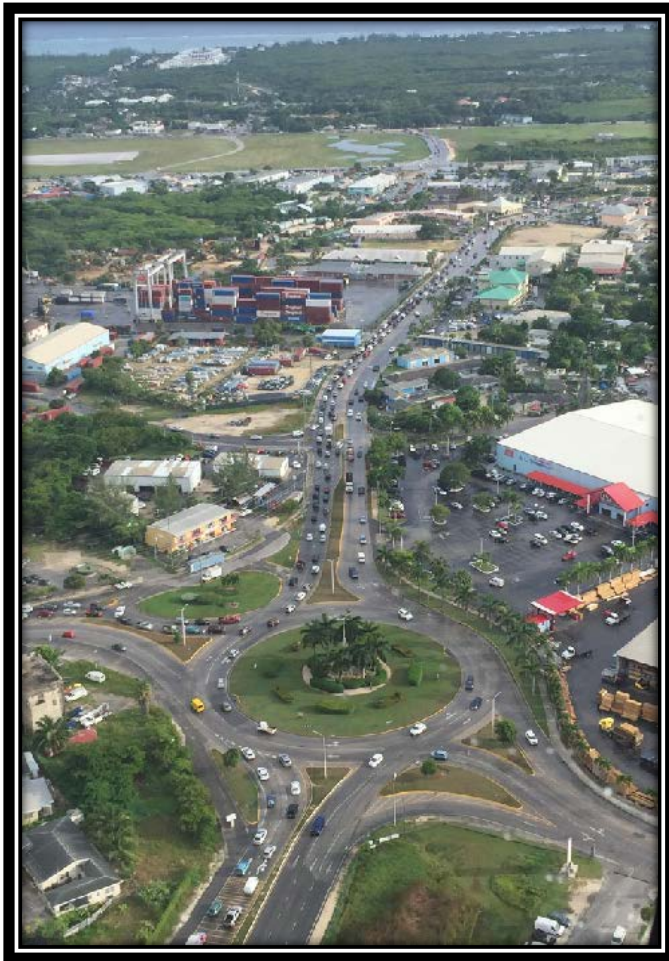
Commitment to our mission will enhance the quality of life, promote economic prosperity, and improve access and mobility for all residents and visitors of the Cayman Islands. We will be a recognized leader in the Caribbean for providing high quality roads and transport related infrastructure.

### **Customers and Location of Activities**

Road users are the primary customers of the National Roads Authority. Income is generated by providing engineering, construction, and maintenance services for fund-holding Government Agencies, approved private sector clients, and any other entity that the Authority agrees to provide services to. Services are provided only in the Cayman Islands.

### **Compliance during the Year**

The NRA operated in general compliance with the Nature scope of activities specified in in the Ownership Agreement for the year.



### ***2019 Significant Events***

- NRA finalized development and roll out of the computer based Travel Demand Model and Traffic Operations Analysis Model.
- Two new major construction projects completed were 1) The Olympic Way Connector and 2) The Elgin Avenue Connector
- Board and Management finalized the initial review of the recommended amendments to the Roads Law and NRA Law
- The NRA held its 2<sup>nd</sup> Annual Road Safety Conference at the Ritz Carlton in October 2019
- Deputy MD Edward Howard served as Acting Managing Director for the entire year 2019

## Section 3 - Strategic Goals and Objectives

### **3.1 Approved Strategic Goals and Objectives**

The key strategic goals and objectives for The National Roads Authority for the 2019 financial year as stated in the Ownership Agreement were as follows:

1. Continue establishment of the Authority, develop and implement effective administrative, financial and information management systems,
2. Identify and seek approval for strategies for financing future road development,
3. Continue the Traffic Improvement and Roads Development Programmes.

### **3.2 Compliance with Strategic Goals and Objectives**

During the fiscal year 2019 the NRA complied with the above approved strategic goals and objectives with the completion of two major construction projects, the new connector road between the CNB Roundabout and Mango Tree and the new connector from Walkers Road to Olympic Way. The NRA also completed some works at the junction of Shamrock/Hirst Road at the new Country Corner shopping complex as well as some reconstruction works on Selkirk Drive and Abbey Way.

Total expenditure for FY2019 budget cycle (Jan 1, 2019 to Dec 1, 2019) was \$20.6M. Capital Projects (Executive Assets) accounted for \$10.6M and \$10M came from the Road Fund as Recurrent Revenue that was used for the day to day operations and routine road maintenance of the NRA over the 12 month period.

**Goal 1: Continue establishment of the Authority, develop and implement effective administrative, financial and information management systems.**

The NRA Management team supported by the Board continue to strive for betterment in the areas of administrative, financial and management information systems.

Sound administration is important as it functions as a connecting link between the senior management and the employees. To that end the NRA continues to strive to provide adequate administrative staffing levels along with the tools and techniques required to ensure that the administrative arm of the Authority is able to carry out its role in achieving a high level of workplace productivity and efficiency. NRA management began in 2019 to actively seek solutions for automating the current paper-based leave tracking system. NRA also launched a new electronic punch clock and time recording system (TRS).

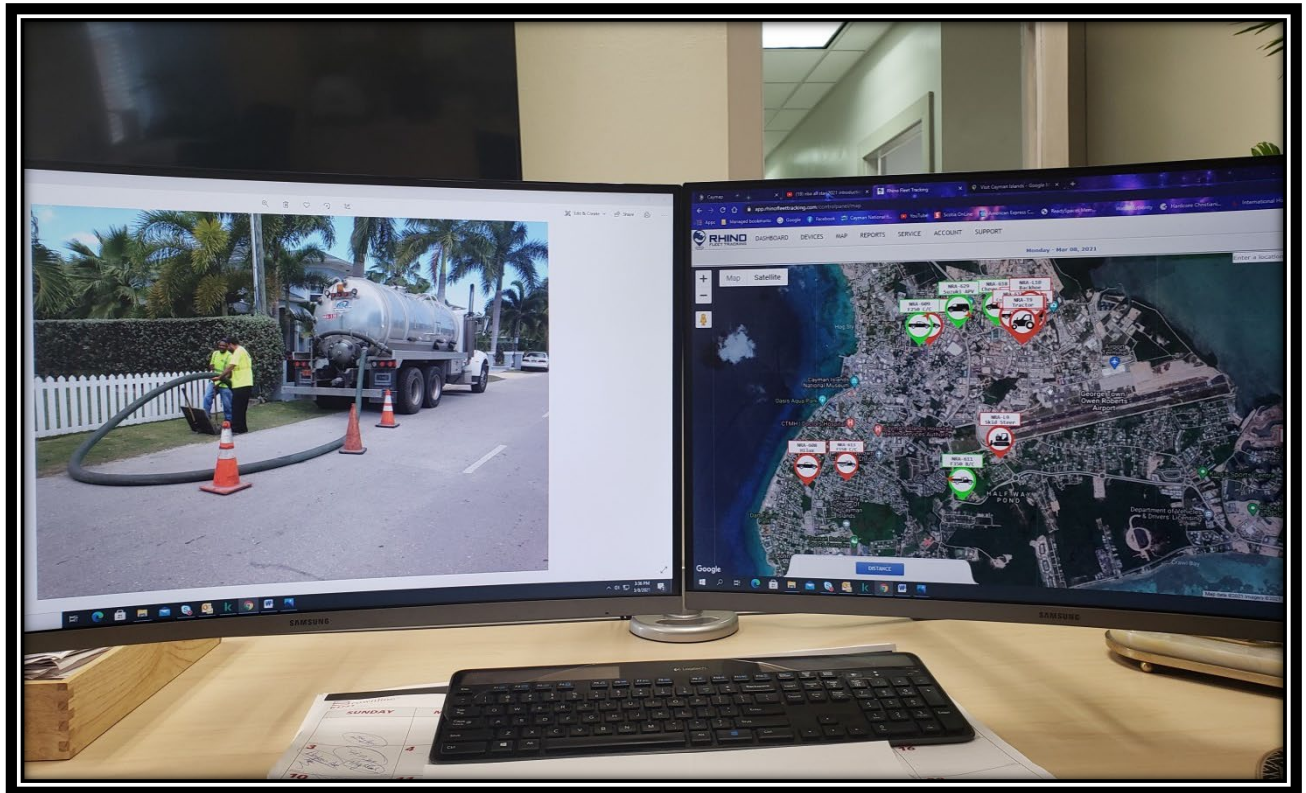
On the finance side the NRA plans to upgrade or replace the current accounting software package which does not fully serve the needs of the Authority in several key areas. The current system has several shortfalls which result in unnecessary manual time consuming production of financials and forecasts.

In 2019 the NRA completed successful implementation of a new GPS fleet tracking system called RHINO. The system provides 2 minute interval tracking of NRA fleet across the island and can generate instant reporting on vehicle usage information as well as reports



on speed, idle time, erratic driving, route navigation, etc. The advantages to having such a system include:

- A reduction in insurance costs
- Up to date geo-location vehicles across the island.
- Tracks driver behavior and vehicle performance
- Helps to improve safety of vehicle and operator



## HUMAN RESOURCES

The NRA boasts an all Caymanian staff complement of 109 employees (89 full-time, 20 temps). The average employee length of service with the NRA is 14 years.

Six percent of staff is educated to a graduate level, a further six percent hold undergraduate degrees, and 87% are educated to a high school diploma level. 93% of all employees have been with the authority for at least 6 years, with 65% having a tenure of 11 years or more. Average annual take home pay for NRA employees is approximately \$42,000, however, the average total annual compensation cost for each employee is approximately \$59,000. This reflects the fact that over 19% of the average employee emoluments go towards healthcare premiums.



## ***Management Team Profile***



Name: Edward Howard

Title: Deputy Managing Director

Qualifications: Bachelors in Civil Engineering - Howard University; Masters in Civil Engineering (Transportation) – University of Illinois Urbana Champaign; MBA (Corporate Finance) – University of Leicester, UK. More than twenty (20) years of educational experience and practical know-how in urban and regional planning, transportation engineering.



Name: Olsen Bush

Title: Chief Financial Officer

Qualifications: Masters in Business Administration- International Collage of the Cayman Islands  
More than 30 years of financial experience in the private and public sector.



Name: Shena Ebanks

Title: Chief Human Resources Officer

Qualifications: Masters in Human Resource Management- University College of the Cayman Islands

Over 10 years of Human Resources experience, Shena holds the dual role of HR and Office Manager.



Name: Brian Chin Yee

Title: Works Manager, Engineering & Operations

Qualifications: Bachelors in Electrical Engineering B.Sc. – Florida Institute of Technology University (1993 -1997)

20 years of engineering experience.



Name: Denis Thibeault

Title: Assistant Director, Transportation & Planning

Qualifications: Bachelor of Environmental Studies in Urban & Regional Planning - University of Waterloo

Over 20 years experience in transportation and planning

**Goal 2: Identify and seek approval for strategies for financing future road development.**

Accomplishments:

The revenue and resources of the Authority comprise of the following:

Monies directed by Law to the Roads Fund, as well as services purchased by Cabinet for the purposes of capital roads improvements. Other revenue sources may include:

- Road user charges collected by the Authority;
- Gifts or bequests received by the Authority;
- Other monies paid and property provided to the Authority by way of grants, rent, interest and other income derived from the investment of the Authority's funds.

Appropriation made by the Government for capital road improvement projects is based on service based budgeting. The Minister of Commerce, Planning and Infrastructure (CP&I) will purchase the services of the Authority (called executive assets) as agreed upon in the Purchase Agreements. The service of the Authority is not only measured in terms of input cost but also in quantity, quality, timeliness and location.

**Goal 3: Continue the Traffic Improvement and Roads Development Programme**

The achievements in this area are highlighted in Section 3.3 which follows:

**3.3 Transportation Planning Activities:**

3.3.1 Transportation Planning Activities: The NRA employs a small core of transportation engineering and planning professionals who report to the Deputy Managing Director and Managing Director and advise on all matters relating to transportation planning, traffic, and roads development and funding.

One of the main tasks of the NRA's transportation unit is to assist in the development of a long term (20-25 yr) national roads plan. From the long term plan a short term plan is developed; this short term plan consists of roads and roads improvements that are deemed as critical within 3 to 5 years.

3.3.2 Recurrent Activities – Some of the main activities of the transportation unit for FY2019 (covering the period of January 1, 2019 to December 31, 2019) were as follows:

- i. In addition to numerous meetings and correspondence with various land developers to advise them on roads and drainage requirements, the transportation unit prepared assessments and provided commentary to the Central Planning Authority on three hundred and fifteen (315) planning applications during 2019.



- ii. The following table provides a breakdown by quarter for the current Fiscal Year:

Quarter	Month	Plan Reviews	SWM/ Drainage Plan Reviews	Inspections
1	January	12	6	4
	February	20	9	8
	March	20	3	5
<b>Sub-Total</b>		<b>52</b>	<b>18</b>	<b>17</b>
2	April	17	3	6
	May	30	12	5
	June	36	10	5
<b>Sub-Total</b>		<b>83</b>	<b>25</b>	<b>16</b>
3	July	37	9	6
	August	18	11	7
	September	24	10	9
<b>Sub-Total</b>		<b>79</b>	<b>30</b>	<b>22</b>
4	October	54	5	10
	November	25	8	5
	December	22	11	4
<b>Sub-Total</b>		<b>101</b>	<b>24</b>	<b>19</b>
<b>Total</b>		<b>315</b>	<b>97</b>	<b>74</b>



- iii. The following table provides a breakdown of the type of developments since July 2019.

<b>Development Type</b>	<b>Plan Reviews</b>	<b>SWM/ Drainage Plan Reviews</b>	<b>Inspections</b>
<b>Commercial</b>	45	15	11
<b>Government</b>	15	2	1
<b>Hotel</b>	4	1	1
<b>Industrial</b>	29	11	1
<b>Institutional</b>	17	7	2
<b>Residential</b>	78	36	25
<b>Subdivisions/ Road Base</b>	92	14	28
<b>Mixed-Used Development</b>	6		
<b>Miscellaneous</b>	32	3	1
<b>Running Total</b>	<b>318</b>	<b>89</b>	<b>70</b>

- iv. One hundred and one (101) due diligence letters were written in response to enquiries from attorneys and real estate agents dealing with land purchases;

3.3.3 Road Gazette Plans (Roads Law 2005R) were either started and/or completed for the following:

- a) Gazette scheme for Lissa Lane West Bay;
- b) Gazettal scheme to open a road link between Ashgo Street and Greenwood Drive in George Town.
- c) Gazette scheme for additional widening needed for a sidewalk on the Elgin Avenue Extension Project.
- d) Gazette scheme for extension of Capella Avenue to South Ramp in Cayman Brac
- e) Gazette scheme for the widening of Crewe Road, Shamrock Road, Hurley Merren Blvd to allow for six travel lanes in the Red Bay/Prospect area

- f) Gazette scheme for the eastward extension of the East-West Arterial to Woodland Drive with a north to south collector road between Shamrock Road and Hirst Rd.
- g) Gazette scheme to delineate and declare Lake Destiny Drive as a public road.
- h) Gazette Scheme to delineate and formalize a section of Sparky Drive and part of Lincoln Drive as public road.
- i) Gazette scheme to delineate and formalize the realigned segment of Further Road as a public road, North Side;
- j) Gazette scheme to delineate and formalize a section of Chisolms Drive, Northside as a public road, North Side.
- k) Gazette scheme to delineate and formalize the terminal section of Windward Road as public road, Newlands
- l) Section 14 scheme to close and vest two cul-de-sacs on Prospect Drive, George Town
- m) Section 14 scheme to close and vest a re-routed segment of Further Road in North Side.

#### 3.3.4 Travel Demand Model and Traffic Operation Analysis Model

The National Roads Authority at the beginning of the fiscal year (July 2015) began the process of developing a traffic model for the island of Grand Cayman. Such a model is necessary to:

- Substantiate the NRA's current and long term planning efforts made under the National Roads Plan;
- Assess the merits of future road network proposals, and,
- Assess the traffic impact of future development proposals.

The National Roads Plan (NRP) is a strategic plan consisting of three parts:-

1. A 25-year road corridor plan (Section 26, Roads Law (2005)). This should be updated every five years.
2. A transportation management strategic document that highlights the NRA's short to long term focus on access management, road safety, mobility, interconnectivity, smart growth, etc.
3. NRA funding mechanisms – this includes focus on the structure of NRA through a look at business process re-engineering, a road financing plan (for both maintenance and new construction); alternative revenue streams, etc.

The traffic model is a key assessment tool in the development of items 2 & 3 of the NRP. The traffic model is comprised of two distinct computerized models; the first being a travel



demand model (macro level) and the second being a traffic operations model/simulation package (micro level).

The travel demand model will be used to predict travel requirements for a future time period (as much as 30 years) based on a set of socio-economic trends and assumptions. The travel demand model predictions guide policy and investment in roads and road related infrastructure. The 2010 Census and subsequent employment and labour surveys provide the bulk of the input data needed for this model. Current traffic counts and other related data will help to refine or calibrate the predictive capabilities of the travel demand model.

The purpose of the Travel Demand Model (TDM) and Traffic Operational Analysis Model (TOAM) is to assist the NRA in developing key assessment tools in creating transportation management strategies for Grand Cayman's short to long-term, focusing on access management, road safety, improved mobility and growth and for providing strategic information on policies to generate a sustainable road financing plan for the long-term.

The TDM will be used to predict travel requirements for a future time period (as much as 30 years) based on a set of socio-economic trends and land development assumptions. The travel demand model predictions will guide policy and investment in roads and road related infrastructure. The 2010 Census and subsequent employment and labour surveys provided the bulk of the input data needed for this model. Land development data from 2010 to 2015 provided from the Planning Department was also utilized. Current traffic counts and other related data helped in refining or calibrating the predictive capabilities of the travel demand model.

The TOAM will be used to analyze and predict current and future traffic behaviour and characteristics on sub-areas of the entire road network of Grand Cayman. The operational model will be used for example, to analyze the performance of a single particular intersection or a whole network of intersections simultaneously. Network areas such as the Central business district (CBD) or the ETH & E-W arterial corridors can also be analyzed to determine current performance as well as future performance based on future traffic volume predictions. The model can also test various improvement alternatives such as lane expansion, intersection upgrades, bypass roads, new corridor alignments.

Summary of the work undertaken towards the development of the Traffic Model in 2019 is as follows:

a. Calibration of the Travel Demand Model (TDM) to the Base Year

Continued efforts from 2018 on this task included finalizing the implementation of AM, Mid-Day, PM and overnight traffic assignment with unique vehicle classes for private vehicle and taxi as well as truck. Matrix adjustment procedures for the TAZ were completed in order to generate that AM and PM Peak Hour conditions of the base year by trip purposes.

b. Compilation of Future Year Zonal Data and Network Elements

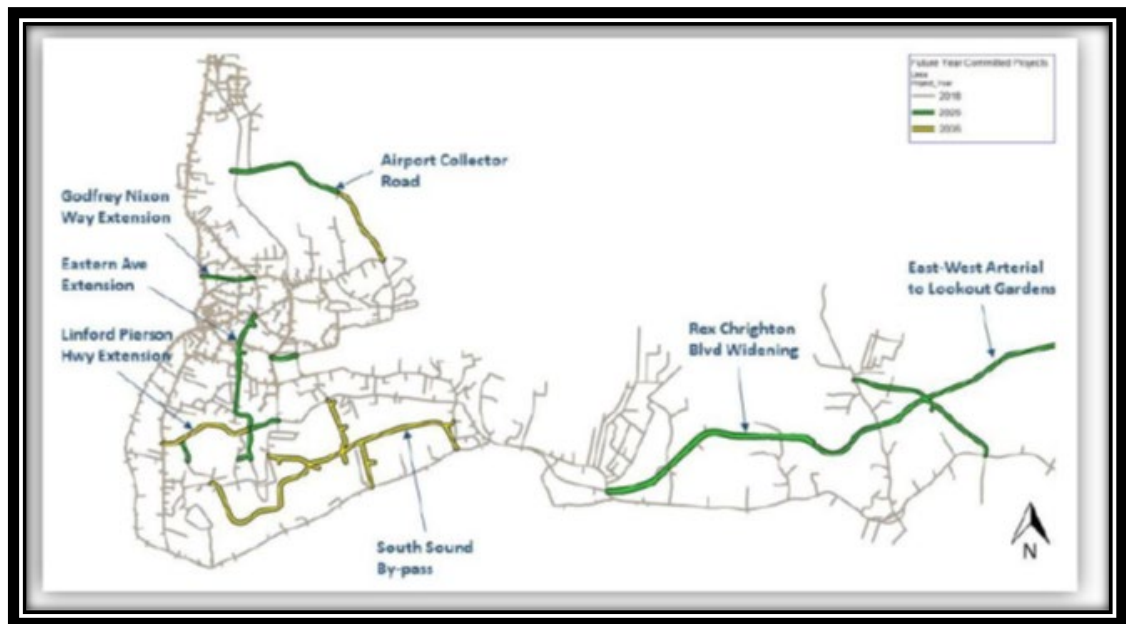
NRA and its Consultants developed 2026 and 2036 future land use scenarios based upon island wide growth patterns from ESO and identified projects known to the NRA were allocated to TAZs and prepared for input to the model. The overall

model inputs (population, households, and anticipated development growth by type) to the Grand Cayman Model for the base year (2015), 2026 and 2036 are summarized in the following table.

YEAR	2015	2026	2036
POPULATION	58,218	79,819	101,113
HOUSEHOLDS	25,629	34,912	44,087
HOTEL ROOMS	3,155	5,140	5,540
BUILDING SF - EDUCATION/RELIGION	2,406,979	2,509,979	2,509,979
BUILDING SF - GOVERNMENT	1,922,667	1,922,667	1,922,667
BUILDING SF - TOURISM LEISURE	375,315	375,315	375,315
BUILDING SF - HOTEL	2,787,549	2,787,549	2,787,549
BUILDING SF - INDUSTRIAL	1,005,295	1,065,295	1,065,295
BUILDING SF - MIXED USE	254,332	421,332	621,332
BUILDING SF - RESTAURANT	481,041	522,441	602,641
BUILDING SF - RETAIL/PROFESSIONAL	9,879,382	11,061,422	12,830,218
BUILDING SF - UTILITIES	648,362	648,362	648,362

c. Future Year (2026 & 2036) Traffic Assignments and scenario modeling

Future year projects were identified and coded into the models. The graphic below gives a summary representation of the future year road projects used in the forecasting of future traffic conditions



Based upon findings of the Future Year (2026 & 2036) Traffic Assignments, two additional scenarios were identified and tested in the model for 2026 and 2036; namely:

- Scenario 1 – Widening of Crewe Road and Shamrock Road/Hurley Merren Boulevard (EWA) to 3-lanes from the Silver Oaks to Chrissie Tomlinson Roundabout.
- Scenario 2 – Closure of Crewe Road at the end of the runway of Owen Roberts International Airport.

d. Calibration and Validation of Baseline Conditions in the TOAM

Link traffic results, along with other relevant modelling parameters, from the TDM model were imported the TOAM for the base year 2015. Based on several days of field observations (measurements of queue length at key intersections, travel speed runs along key routes), signal timing information, driver behavioural observations at roundabouts and signals, and geometric measurements at key major intersections of the road network, calibration and validation of the model for 2018 AM and PM condition were completed.

The following figure illustrates intersections where additional observations were obtained and queue length data were collected in order to observe the operational deficiencies.

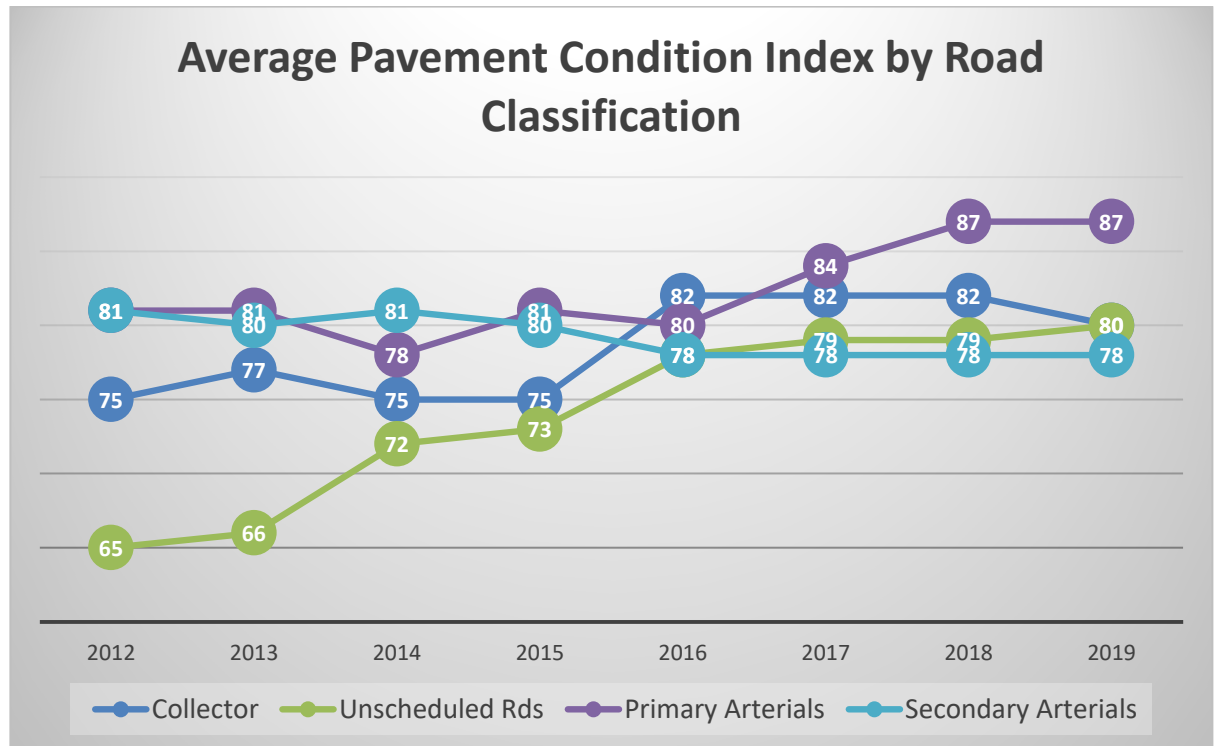


The image below shows a graphical representation of traffic simulation results of the TOAM during the 2018 PM Peak Hour condition which reflect the queues along North Sound Road, Thomas Russel Avenue and Huldah Avenue.



### 3.4 Pavement Management:

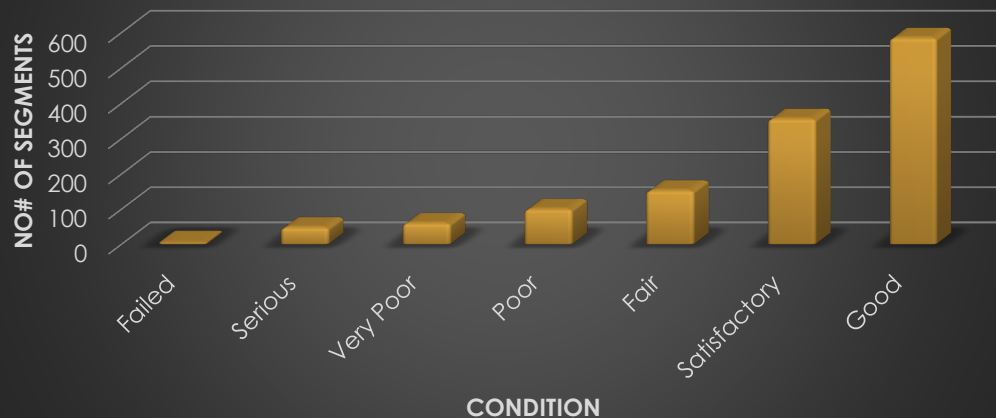
The aim of the NRA's pavement management programme is to monitor and to prescribe maintenance strategies to pavements of varying classifications in the Grand Cayman road network. Primary Arterials are those main roads which carry the majority of roadway traffic throughout the island and as such are prescribed a higher maintenance protocol.



The above chart shows that at the end of FY 2019 all pavement types on Grand Cayman are in an overall 'good' to 'very good' condition. The goal for primary and secondary pavements is that of an average PCI of no less than 80.

Since 2012 the NRA has concentrated on local privately built subdivision roads in an effort to raise the pavement condition index (PCI) from an unsatisfactory level of 65 to above 75 which is representative of 'good' condition. In essence, concentrated efforts on subdivision roads has been effective in raising the average PCI level of these roads from fair to good. The term local private road, however, is a bit misleading as under the Roads Law these roads (with the exception of a few) do not involve restriction of access to the public as a right.

## Condition of Grand Cayman Road Network in 2019



Overall condition rating of the Grand Cayman Road Network in 2019

In 2019 a total of 1324 road segments in the network had condition ratings as follows:

Condition Category	Num Sections
Failed	6
Serious	48
Very Poor	60
Poor	100
Fair	153
Satisfactory	356
Good	585

The majority of subdivision roads built by private developers in Cayman offer unrestricted public access, however, the official ownership of the developed roadway is often not 'transferred' to the Crown; the NRA prefers to classify these not as private roads but as 'unscheduled public roads'. It is important to add this brief explanation because the distinction between public roads and private roads have been blurred by actions of the Government who over the years has cleaned, repaired, installed streetlights, speed humps, and other street furniture without regard to their status. The challenge going forward is to keep the average PCI of private (unscheduled) roads at satisfactory and good levels.



### **3.5 Engineering and Operations Activities:**

A works manager, two engineers, two superintendents, and a fleet manager make up the management staff of the Engineering and Operations unit. They are responsible for engineering design; project budgeting, resource reporting, project costing, fleet operations, and completion of all road construction projects and maintenance undertaken by the NRA. They utilize an equipment fleet worth over \$2 million. Capabilities include sign making and pavement markings, traffic signal maintenance, survey crews with GPS and total station equipment, and computer aided design and drafting (CADD).

In addition to their road construction and maintenance responsibilities, they regulate the importation, transportation, and use of explosives in the Cayman Islands on behalf of the Managing Director in accordance with the Explosives Law and Regulations.



### **3.6 Executive Assets: Capital Works & Road Surface Upgrades**

New Capital Works and rehabilitation of roads surfaces on major arterials are systematically funded via Cabinet as “Executive Assets”. This year’s list of major EA’s funded via Cabinet include:

### **3.6.1 Elgin Avenue-Airport Connector (\$2.1M)**

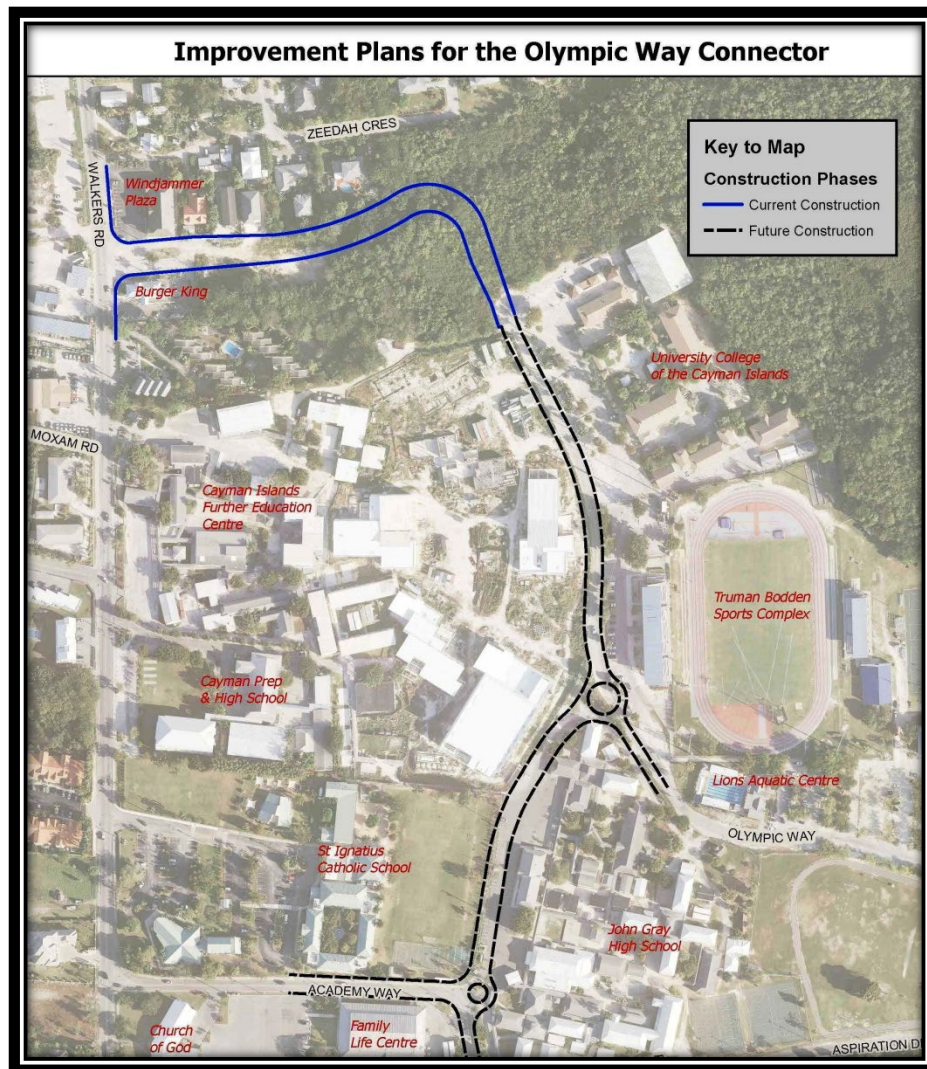
The Elgin Avenue-Airport Connector (aka Mango Tree Connector) refers to a ¼ mile link road that extends between the CNB Roundabout on Elgin Avenue to the section of Owen Roberts Airport closest to the Mango Tree Restaurant. The main scope of the project was to provide an optional route for motorists coming to and from the Industrial Park area. The project included expanded lanes on a section of Crewe Road by Mango Tree Restaurant and the addition of a new 4-lane segment of roadway between CNB Roundabout and the airport. New high fluorescent yellow-green crosswalk signs, enhanced streetlighting and sidewalks are featured on this new connector.



### **3.6.2 Walkers Road - Olympic Way Connector (~\$800K)**

The NRA completed the first phase of a proposed new schools access road system that will allow for relief of school related traffic on Walkers Road by providing alternative schools access via Olympic Way. The phase completed for this fiscal year provided a new connection of Olympic Way and Walkers Road that greatly enhances access to John Grey High School, University College of the Cayman Islands and the Truman Bodden Sports Complex. The NRA is also proud of having been able to have the road substantially complete for it to be utilized for the CARIFTA Games which were held in April 2019. Future expansion of Olympic Way is intended to include a connection through part of the John Grey Campus to intersect with Academy Way by the Family Life Centre. This future phase will allow alternative access for the St Ignatius and Cayman Preparatory Schools.





### **3.6.3 NRA District Roads Rehabilitation Programme**

NRA completed spray 'n' chip upgrades on 82 road segments across all five districts for approximately \$2.9M

Spray n Chip is used extensively by road agencies worldwide as:

1. A semi-permanent surface for minor roads, and
2. A preventative maintenance (surface treatment) for existing paved roads.

Typically roads having low daily traffic volumes (less than 5,000 ADT) will be prime candidates for spray n chip. Some jurisdictions however have experimented with spray n chip (aka Chip Seal) on roads with daily volumes of up to 20,000 ADT.

The most significant benefit of spray n chip is that is between 20% to 25% of the cost of hot mix asphalt so governments are able to get more roads done utilizing spray n chip methods. If done correctly and/or if good quality gravel ('chips') can be sourced then spray n chip roads can last between 5 to 7 years.

The following district roads were reconstructed and/or resurfaced with surface treatments under this programme. The MicroPAVER pavement management database was used to select the roads to be worked on and what type of work would be performed. Explanations of the abbreviations are given below:

Abbreviations:      R&R = Rip and Relay (Reconstruct the Road Base)  
                             Reconst = Reconstruction  
                             SC = Spray and Chip (Surface Treatment)  
                             2<sup>nd</sup> App = Second Application of Spray and Chip  
                             (Surface Treatment)



The NRA's policy is to apply spray n chip surfacing to local access/subdivision roads with low traffic and posted speeds of no more than 25 mph. Spray n Chip application may be applied to primary arterial roads but only as a temporary measure during major construction.

**2019 District Roads Expenditure as at October 31, 2019** was as follows:

	Budget	Invoiced (Oct 31st 2019)
East End	25,000	<b>147,164</b>
North Side	175,000	34,663
Bodden Town	200,000	372,025
George Town	400,000	1,665,171
West Bay	800,000	682,190
<b>TOTAL</b>	<b>1,600,000</b>	<b>2,901,213 *</b>

As of October 31, 2019 NRA had completed \$2.9M in district roads (\$2.1M if we exclude Selkirk Drive which was funded via Ministry's capital works budget).

#### East End Roads FY2019

<b>EAST End (Budgeted 25,000)</b>		
EA36EE005-Queens Hwy shoulders by Morritts	EE	\$ 147,164.40
<b>Total</b>		<b>147,164.40</b>

#### North Side Roads FY2019

<b>North Side (Budgeted 175,000)</b>		
EA36NS013-Botanic Park RD	NS	\$ 34,633.40
<b>Total</b>		<b>34,633.40</b>



## Bodden Town Roads FY2019

<b>Bodden Town (Budgeted 200,000)</b>		
NRA2BT003-Road Shoulders by Moon Bay Condos	BTE	\$ 12,816.41
EA36BT016-Tarpon Springs	BTE	\$ 1,076.34
EA36BT016-BT Road by Tarpon Springs	BTE	\$ 19,124.59
EA36BT023-Merimac Cresc	BTW	\$ 32,874.57
EA36BT014-Leeward Drive/Faye St improvements	NEW	\$ 128,849.63
EA36BT015-Windward ST	NEW	\$ 85,465.34
EA36BT018-Ann ST	NEW	\$ 6,389.18
EA36BT019-Tenfoot CL	NEW	\$ 2,460.61
EA36BT020-Kelli ST	NEW	\$ 10,566.66
EA36BT021-Nancy ST	NEW	\$ 4,968.97
EA36BT022-Leeward DR shoulders	NEW	\$ 1,751.42
EA36BT017-Hirst RD shoulder repairs	SAV	\$ 12,938.77
EA36BT025-Hirst RD by Country Corner Plaza	SAV	\$ 39,926.09
EA36BT027- Pedro Castle RD shoulders by Park	SAV	\$ 12,816.24
<b>Total</b>		<b>372,024.82</b>

Note: Serious issues with saltwater inundation in Newlands (Rackley Canal) as a result of seasonal King Tides led the NRA to increase expenditure in that area.



Botanic Park Road – new spray n chip surface

## George Town Roads FY2019

George Town (Budgeted \$400,000)			
EA36GT031-Crewe RD by Navis CL	GTC	\$ 11,672.25	
EA36GT055-Printers WAY	GTC	\$ 114,697.97	
EA36GT070-School LN	GTC	\$ 1,741.65	
EA36GT073-Maclendon DR	GTC	\$ 142,017.35	
EA36GT054-South Sound RD shoulders Bel Air to Scotiabank	GTE	\$ 175,904.41	
EA36GT067-Bel Air DR	GTE	\$ 133,414.54	
EA36GT071-Old Crewe RD shoulders	GTE	\$ 68,411.30	
EA36GT052-Heather LN	GTN	\$ 3,637.66	
EA36GT053-School Road by Prentos	GTN	\$ 31,465.11	
EA36GT072-North Church St Shoulders by Huldah Ave	GTN	\$ 1,250.00	
NRA2GT015-South Sound Shoulders by horse stables	GTS	\$ 27,903.61	
EA36GT005-South Sound Rd Shoulders by Paradise Condos	GTS	\$ 17,665.50	
EA36GT057-South Sound Community Centre Parking	GTS	\$ 7,819.99	
EA36GT068-Olympic Way by Lions Pool	GTS	\$ 56,798.64	
EA36GT059-John Greer Blvd Shoulders	GTW	\$ 16,169.12	
EA36GT060-Goring Avenue Shoulders	GTW	\$ 5,055.09	
NRA2GT295-Spotts Straight Shoulders	PPT	\$ 8,387.41	
EA36GT061-East-West Art shoulders by Adventure ST	PPT	\$ 37,959.45	
NRA2GT338-Shamrock RD by Red Bay Shoulders	RBY	\$ 3,200.50	
EA148GT-Selkirk Drive	RBY	\$ 800,000.00	funded via Capital
<b>Total</b>		<b>\$ 1,665,171.55</b>	

### Notes:

1. NRA also spent approximately \$128K on new guardrail installations by Frank Hall Homes on Rex Crighton Blvd in the Prospect constituency.
2. Selkirk Drive is classified as a district road however due to the extraordinary rehab/repair costs it was constructed using funds from Ministry's EA148 – Major Capital Works budget





## West Bay Roads FY2019

<b>West Bay (Budgeted 800,000)</b>			
NRA2WB110-Simion CRESC	WBC	\$	11,598.45
NRA2WB218-Lenders CL	WBC	\$	7,718.24
NRA2WB220-Capt Dudley LN	WBC	\$	21,244.36
NRA2WB221-Avoca LN	WBC	\$	6,931.79
NRA2WB222-Mount Pleasant RD by Leonas	WBC	\$	9,128.56
NRA2WB223-Lynette CRESC	WBC	\$	19,574.56
NRA2WB224-Sticky Toffee LN	WBC	\$	5,184.59
NRA2WB225-Olive CL	WBC	\$	7,393.07
NRA2WB226-Pleasant DR	WBC	\$	20,518.87
NRA2WB057-Durango Way	WBC	\$	6,087.79
NRA2WB212-Cinder LN	WBC	\$	8,730.41
EA36WB026-Barkers RD	WBN	\$	18,025.00
EA36WB029-Lissa LN	WBN	\$	30,357.48
NRA2WB053-Barkers RD	WBN	\$	14,384.42
NRA2WB217-Star CL	WBN	\$	23,143.33
NRA2WB219-Allamanda DR	WBN	\$	24,304.06
NRA2WB060-Turtle Cresc	WBN	\$	5,432.26
NRA2WB202-Off Andresen RD (by Rollin)	WBN	\$	20,295.78
NRA2WB203-Starlet Cresc	WBN	\$	36,644.81
NRA2WB204-Getsamay LN	WBN	\$	14,122.11
NRA2WB205-Off Andresen Rd (by Swaby)	WBN	\$	3,197.58
NRA2WB215-Twinflower CT	WBN	\$	19,111.94
NRA2WB216-Caribbean LN	WBN	\$	23,002.66
NRA2WB033-Jibe CL	WBS	\$	5,209.39
NRA2WB038-John Bush RD	WBS	\$	2,066.80
NRA2WB054-Pearlies LN	WBS	\$	5,865.16
NRA2WB067-Regal Ln	WBS	\$	2,449.49
NRA2WB093-Elizabeth ST	WBS	\$	6,162.62
NRA2WB094-Anglin RD	WBS	\$	14,252.50
NRA2WB123-Morgans LN	WBS	\$	7,478.16
NRA2WB124-Capt Blodsit RD	WBS	\$	1,298.28
NRA2WB146-Farrington LN	WBS	\$	5,948.54
NRA2WB208-Lucy Welds CL	WBS	\$	6,750.12
NRA2WB209-Sisal CL	WBS	\$	2,768.61
NRA2WB210-Peace LN	WBS	\$	2,500.28
NRA2WB211-Garvin RD	WBS	\$	58,436.93
NRA2WB214-Mesa CL	WBS	\$	15,127.39
EA36WB024-Batabano RD shoulders	WBS	\$	9,876.47
NRA2WB170-Radiant LN	WBS	\$	7,808.26
NRA2WB015-Birch Tree Hill Rd by Kellys	WBW	\$	56,165.43
NRA2WB062-Fourth AVE	WBW	\$	46,940.91
NRA2WB129-Agua LN	WBW	\$	6,691.56
NRA2WB134-Josephs DR	WBW	\$	8,939.39
NRA2WB201-Ebanks RD	WBW	\$	8,865.57
NRA2WB206-Miss Daisy LN	WBW	\$	26,800.46
NRA2WB207-Jenny Manderson #171	WBW	\$	17,655.62
<b>Total</b>			<b>682,190.07</b>

## Section 4 – Future Goals and Economic Outlook

The future goals of the NRA are not just concerned with continued compliance with the requirements of the PMFL but also with developing strategies for organizational growth going forward.

Through the development of a corporate strategic plan, the NRA can be able to identify the roads infrastructure needs that are most important to these islands. A strategic plan would also allow us to look ahead and make provisions for the necessary investments that will ensure adequate and steady source of funding and other resources necessary to achieve a sustainable road network. The local and tourism economy remain vibrant and the nation's roadways play an important part in maintaining safe and efficient movement of people, goods and services.

The NRA Board of Directors remains committed to the continued development of the NRA and to its efforts to deliver the best roads and road related infrastructure to the people of the Cayman Islands.

Key strategies for ensuring a stronger and better NRA for the foreseeable future include:

- Necessary amendments to the NRA Law and Roads Law;
- Adaptation of the organizational structure to meet future demands;
- Development of effective administrative, financial and management systems
- Attraction of young professional and technical employees that will

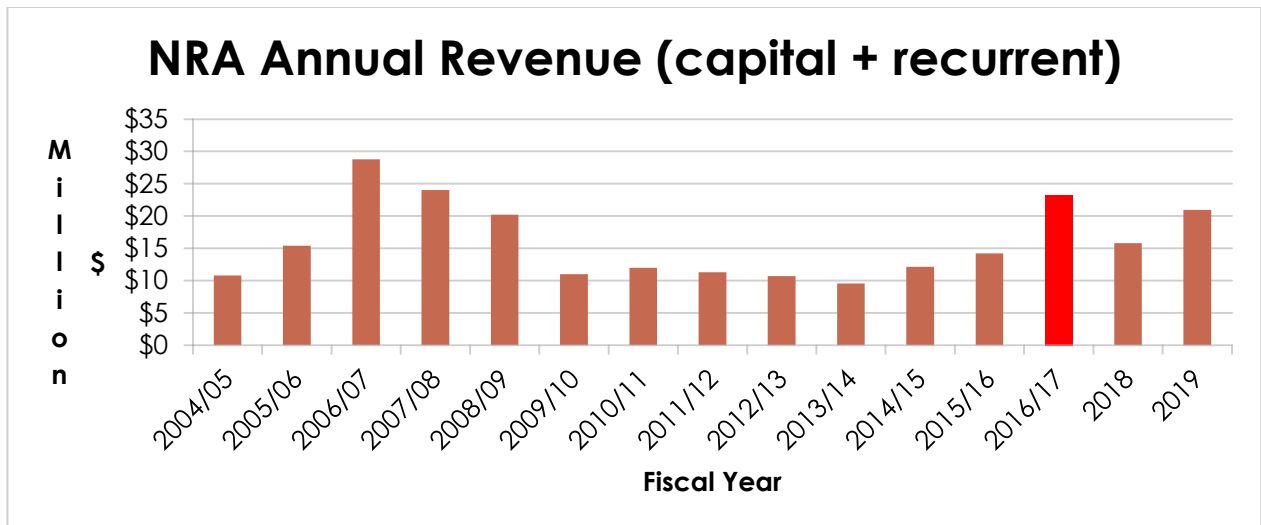
pursue career development with the NRA;

- Removal of the cap restriction on the NRA's Road Fund Revenue to allow for a measured increase in the Authority's operations budget.
- The Road Fund and other road user fees and/or charges to be further established as the dedicated funding stream for recurrent road maintenance activities;
- Commitment from Cabinet for continued investment in necessary capital road improvements (particularly roads in and around the Central Business District and roads providing mainline access between the CBD and eastern districts).



Through the development of its long range corridors plan and the strategies above NRA will be poised to deliver sustainable, reliable, safe and efficient roads for future generations of Caymanians.





In 2015 an amendment to the NRA Law placed a \$10M cap restriction on the recurrent funding for the NRA. Such restriction;

1. Limits the potential of the NRA to address its increasing maintenance budget;
2. Results in an increase of unfunded maintenance projects (backlog);
3. Prevents the NRA from addressing staffing shortfalls;
4. Restricts NRA's ability to adequately address long term liability needs such Post-Retirement Healthcare for its employee.

The NRA as the statutory authority responsible for the maintenance of roads has a mandate to ensure that it delivers to the public on behalf of the Government, roadways that are safe and well maintained.

The cap on the NRA's recurrent revenue has meant that certain key operations and maintenance activities cannot be achieved. The Ministry of Commerce, Planning and Infrastructure has in the interim been able to offset the problem temporarily by funding mostly all of the District Roads rehabilitation projects and the hot mix asphalt programme. The cap however will continue to pose a serious threat to the NRA as personnel, materials and overhead costs continue to rise significantly.

The summary break down of recurrent revenue shortfalls is as follows:

1. Personnel vacancies (\$500K) – Seven key high level vacancies total approximately 500K per annum in personnel costs;
2. 5% COLA (\$250K) – An additional \$250K was required beginning in 2019 to fund a 5% cost of living adjustment for the NRA's current complement of 89 full-time employees.
3. District Road Maintenance NRA 6 (\$1.5M) - The ideal revenue increase for NRA 6 is 2.5M (i.e. a 4.1M annual budget prescribed by Micropaver™ minus current \$1.6M). However, adding \$1.5M to the current \$1.6M yields \$3.1M per annum which

would also be very effective in reducing the maintenance backlog. Logical use of the \$3.1M would also involve HMA surfacing of key district roads to prolong service life.

4. Post Retirement Health Liability (\$1.8M) - The NRA is required to maintain a fund for safeguarding monies for the provision of health insurance for 50+ employees who were civil servants that were impacted by the transfer from PWD to NRA. An actuarial analysis recommends that the NRA reserve an annual amount of \$1.8M for a fund to meet the health insurance needs of these employees upon retirement.

***The total recurrent revenue shortfall for the NRA is around \$4M which means that ideally the NRA needs to have its annual recurrent revenue at a minimum of \$14M with revenue sources to the Road Fund also structured in a way that allows the Authority to adjust to future growth needs. It is imagined however that if the Ministry of Infrastructure assumes long term responsibility for some of the core operations expenses such as 1) The District Roads Maintenance, 2) New Drain-wells, and 3) The Government Street Lighting Programme, the Authority could operate effectively on a recurrent budget of approximately \$12M in 2020 with provisions for cost of living adjustments going forward.***

## Section 5 – Executive Assets & Output Accounts

A summary of the Executive Asset and Output accounts as recorded at the fiscal year ending December 31<sup>st</sup>, 2019 were as shown below:

### NATIONAL ROADS AUTHORITY

#### FUNDS AVAILABLE

#### FOR THE TWELVE MONTHS ENDED 31 DECEMBER 2019

#### 12MONTH BUDGET JAN19-DEC19

	Services to be	Current	Amount	Amount	Total Invoiced	Funds
	provided from NRA Road Fund	Budget	Invoiced B/F	Invoiced This Month	To Date C/F	Available
		\$	\$	\$	\$	\$
Planning & Development of New Public Roads	NRA 5	620,000.00	423,918.19	47,752.09	471,670.28	148,329.72
Grand Cayman District Roads Programme	NRA 6	500,000.00	500,000.00	-	500,000.00	-
Policy Advice on Road Related Matters	NRA 7	-	-	-	-	-
Storm Water Drain Wells	NRA 8	630,000.00	665,574.92	24,550.36	690,125.28	(60,125.28)
Routine Maintenance of Public Roads	NRA 9	5,050,000.00	3,786,422.78	291,738.07	4,078,160.85	971,839.15
Government Street Lighting Programme	NRA 10	1,250,000.00	999,546.92	88,037.00	1,087,583.92	162,416.08
Pavement Management & Other Roads Asset Mangt. Programmes	NRA 11	100,000.00	35,347.81	6,234.00	41,581.81	58,418.19
Road Safety & Roadside Guard Rail Installation Programme	NRA 12	-	-	-	-	-
Explosive & Blasting Management	NRA 13	50,000.00	41,191.87	1,288.98	42,480.85	7,519.15
Arterial Road Surface Rehabilitation	NRA 14	-	-	-	-	-
Provisions for Other Costs	NRA 15	1,800,000.00	1,650,000.00	150,000.00	1,800,000.00	-
		10,000,000.00	8,102,002.49	609,600.50	8,711,602.99	1,288,397.01
		Current Budget	Amount Invoiced B/F	Amount Invoiced This Month	Invoiced To Date C/F	Available
	EA's	\$	\$	\$	\$	\$
Miscellaneous Road Surface Upgrades	EA36	-	-	-	-	-
Various District Roads hot mix overlay		2,700,000.00	-	-	-	-
EA36GUARDRAIL			220,112.34	-	220,112.34	
Southsound Community Beach Parking Lot			11,726.59	-	11,726.59	
EA36GT052 Heather Lane			54,969.53	-	54,969.53	
EA36GT031 Crew Rd Trop.Gdns/Navis Close			9,872.25	-	9,872.25	
EA36GT035/6/7/8 IPL C2018/019			845,236.53	-	845,236.53	
EA36CAPITAL DRAINS PROJECT			216,955.12	24,075.31	241,030.43	
EA36 MISC.EXEC.ASSET ROADWORKS			2,029,046.12	263,606.33	2,292,652.45	(975,600.12)
EA150 Assist DVDL proc.poles/mount hardware EVR system	EA150	500,000.00	66,273.60	1,654.89	67,928.49	432,071.51
EA148 Major Road Works - expansion Projects	EA148	7,712,000.00	749,433.43	-	749,433.43	
EA148GT03 WALKERS RD TO OLYMPIC WAY			20,082.57	140,445.00	160,527.57	
EA148GT01 SHAMROCK/HIRST RD			13,357.54	-	13,357.54	
EA148GT02 NORTH CHURCH ST			2,057,079.90	-	2,057,079.90	
EA148GT05 CNB RAB to Mango Tree connector (EA142GT05 Explorer)			222,793.56	13,930.00	236,723.56	
EA148GT04-Linford Pearson Highway widening (EA142GT04 Explorer)			718,012.76	5,694.78	723,707.54	
EA148GT05 SELKIRK DRIVE/ABBEY WAY			1,152,676.95	186,302.32	1,338,979.27	
EA148 VAR DISTRICT PROJECTS			687,151.15	-	687,151.15	1,745,040.04
EA148GT041 Island Heritage RAB	EA147	900,000.00	595,263.78	-	595,263.78	
EA147WB01 WEST BAY CEMETERY			18,231.02	-	18,231.02	
EA147 MISC DISTRICT PROJECTS			-	130,649.56	115,472.31	40,383.33
EA147GT01-Minor District Projects (NICE project)			-	-	246,121.87	1,241,894.76
		11,812,000.00	9,818,924.30	751,180.94	10,570,105.24	

as at December 31 2019

	<u>2019</u>	<u>2018</u>
<b>ASSETS</b>		
<b>Current Assets</b>		
Cash and cash equivalents	6,977,448	3,912,597
Accounts receivable and prepayments	2,896,147	2,200,053
Inventories	53,852	95,160
<b>Total Current Assets</b>	<u><b>9,927,447</b></u>	<u><b>6,207,810</b></u>
<b>Non-Current Assets</b>		
Property, plant and equipment	<u>2,521,025</u>	<u>2,658,220</u>
<b>Total Assets</b>	<u><b>12,448,472</b></u>	<u><b>8,866,030</b></u>
<b>LIABILITIES AND EQUITIES</b>		
<b>Current Liabilities</b>		
Accounts Payable and accrued liabilities	1,645,406	1,252,609
Employment entitlements	<u>93,497</u>	<u>64,603</u>
<b>Total Current Liabilities</b>	<u><b>1,738,903</b></u>	<u><b>1,317,212</b></u>
<b>Non-Current Liabilities</b>		
Pension Liability	1,041,000	912,000
Post-retirement health liability	<u>24,884,000</u>	<u>15,545,000</u>
<b>Total Non-Current Liabilities</b>	<u><b>25,925,000</b></u>	<u><b>16,457,000</b></u>
<b>Total Liabilities</b>	<u><b>27,663,903</b></u>	<u><b>17,774,212</b></u>
<b>Net Assets</b>	<u><b>-15,215,431</b></u>	<u><b>-8,908,182</b></u>
<b>Net Worth</b>		
Contributed Capital	4,653,535	4,653,535
Accumulated Deficits	<u>-19,868,966</u>	<u>-13,561,717</u>
<b>Total Net Worth</b>	<u><b>-15,215,431</b></u>	<u><b>-8,908,182</b></u>

**National Roads Authority**  
**Operating Statement**  
**31-Dec-19**

		<b><u>2019</u></b>	<b><u>2018</u></b>
<b>SALES</b>			
	Sales of services to Cabinet	10,538,535	5,285,730
	Sales of services to other government agencies	281,888	437,792
	Sales of services to third parties	10,088,496	10,064,312
		<b><u>20,953,909</u></b>	<b><u>15,787,834</u></b>
<b>COST OF GOODS SOLD</b>			
	Labor	2,603,843	2,328,871
	Materials	1,970,681	1,516,264
	Subcontractors	6,384,831	4,008,034
	Hired Equipment	5,487	0
<b>Total Cost of Sales</b>		<b><u>10,964,842</u></b>	<b><u>7,853,169</u></b>
<b>NET REVENUE</b>		<b><u>9,989,067</u></b>	<b><u>7,934,665</u></b>
<b>OPERATING EXPENSES</b>			
	Personnel Costs	3,869,709	3,757,283
	Post Retirement health liability	1,679,000	1,869,028
	Utilities	1,148,044	1,224,110
	Motor Vehicles Expenses (including insurance)	726,737	610,963
	Depreciation	498,984	557,771
	Past service pension	205,829	255,000
	Computer maintenance and fees	167,407	95,682
	Professional Fees	101,490	142,427
	Building maintenance	142,110	61,015
	Telephone	47,670	38,166
	Supplies and consumables	34,885	29,211
	Advertising and promotion	16,900	11,243
	Bank Charges	5,933	8,863
	Insurance	5,933	8,585
	Travel & Subsistence	0	0
	Doubtful Debt Expense	0	0
	Office rental	1,432	0
<b>Total Operating Expenses</b>		<b><u>8,654,316</u></b>	<b><u>8,669,347</u></b>
<b>SURPLUS/DEFICIT</b>		<b><u>1,334,751</u></b>	<b><u>-734,682</u></b>



	2019	2018
<b>CASH FLOWS IN OPERATING ACTIVITIES</b>		
<b>Surplus/Deficit</b>	<b>1,334,751</b>	<b>-734,682</b>
Adjustment for non-cash transactions:		
Depreciation	498,984	557,771
Post Retirement health liability - Defined benefit cost	1,795,000	1,948,000
Past service pension - Defined benefit cost	288,000	327,000
Gain on disposal of property, plant & equipment	<u>-25,000</u>	<u>-10,200</u>
Total	3,891,735	2,087,889
Net change in working capital		
Decrease/(increase) in accounts receivable and prepayments	-696,093	-866,324
(Increase)/decrease in inventories	41,309	-28,408
Increase/(Decrease) in accounts payable and accrued liabilities	421,690	-441,337
Post Retirement health liability - employer contributions	-116,000	-78,000
Past service pension - employer contributions	<u>-141,000</u>	<u>-72,000</u>
<b>Net cash flows (used in)/ from operating activities</b>	<b><u>3,401,641</u></b>	<b><u>601,820</u></b>
<b>CASH FLOWS USED IN INVESTING ACTIVITIES</b>		
Purchase of property, plant & equipment	-361,790	-339,283
Proceeds on sale or disposal of property, plant & equipment	<u>25,000</u>	<u>10,200</u>
<b>Net cash flows used in investing activities</b>	<b><u>-336,790</u></b>	<b><u>-329,083</u></b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Equity Investment	<u>0</u>	<u>0</u>
<b>Net cash flows from financing activities</b>	<b><u>0</u></b>	<b><u>0</u></b>
Net decrease in cash and cash equivalents during the year	3,064,851	272,737
Cash and cash equivalents at the beginning of the year	<u>3,912,597</u>	<u>3,639,860</u>
<b>CASH AND CASH EQUIVALENTS AT END OF YEAR</b>	<b><u>6,977,448</u></b>	<b><u>3,912,597</u></b>

**Capital Maintenance**

<b>Human Capital Measures</b>	<b>2019 Actual \$</b>
Total full time equivalent staff	109
Staff turnover (%)	-
Average length of service (Number)	
Senior management	14.33(3)
Professional staff	14.71(28)
Administrative staff	13.22(50)
Significant changes to personnel management system	None

Note 1: Length of service is calculated based on time of employment with NRA and formerly with PWD.

<b>Physical Capital Measures</b>	<b>2019 Actual \$</b>
Value of total assets	2,876,708
Asset replacements: total assets	Nil
Book value of depreciated assets: initial cost of those assets	
Depreciation: Cash flow on asset purchases	745,466
Changes to asset management policies	None

**Risk Management:**

<b>Key risks</b>	<b>Change in status from previous year</b>	<b>Actions to manage risk</b>	<b>Financial value of risk</b>
Work related injuries to persons	No change	Introduction, training and implementation of safety standards for heavy equipment machinery and workforce personnel.	Undefined: depends on extent of injury
Accidents related to the operation of vehicles and heavy equipment	No change	Implement driver-training courses. HOD to exercise appropriate disciplinary action for each offence or repeating offender, such as loss of authority to drive or financial contribution by driver. Appropriate training in operation of vehicle to reduce operational misuse of the vehicle.	Undefined: depends on extent of damage

## Section 6 - Summarised Financial Statements

*A full set of audited financial statements for The National Roads Authority is provided in the Appendix to this Annual Report.*

A summary of those is as follows.

<b>Operating Statement</b>	<b>2019 Actual \$</b>
Revenue	20,953,909
Operating Expenses	19,619,158
Net Surplus(Deficit)	1,334,751

<b>Balance Sheet</b>	<b>2019 Actual \$</b>
Assets	12,448,472
Liabilities	27,663,903
Net Worth	(15,215,431)

<b>Statement of Cash Flows</b>	<b>2019 Actual \$</b>
Net cash flows from operating activities	3,401,641
Net cash flows from investing activities	(336,790)
Net cash flows from financing activities	—

### Equity Investments

<b>Transaction</b>	<b>2019 Actual \$</b>
EI 8: Equity Investments into National Roads Authority	Nil

### Capital Withdrawals

<b>Transaction</b>	<b>2019 Actual \$</b>
Capital Withdrawals from National Roads Authority.	Nil

## Dividends or Profit Distributions

Transaction	2019 Actual \$
Dividend or Profit Distributions to be made by National Roads Authority.	Nil

## Loans

Transaction	2019 Actual \$
Government Loans to be made to National Roads Authority.	Nil

## Guarantees

Transaction	2019 Actual \$
Government Guarantees to be issued in relation to National Roads Authority.	Nil

## Other Financial Information

Detailed below is information about specific financial transaction required to be included in the Ownership Agreement by the Public Management and Finance Law (2005 Revision).

Related Party Payments (Non Remuneration) made to Key Management Personnel	Nil
Remuneration Payments made to Key Management Personnel	805,904
Remuneration Payments made to Senior Management	316,282
No of Key Management Personnel	14
No of Senior Management	2

Key management includes all of the senior management plus the Board of Directors.

Senior management posts include: Managing Director, Deputy Managing Director, and Chief Financial Officer. During the year 2019 the Deputy Managing Director was Acting Managing Director.



**National Roads Authority**

**Audited Financial Statements**

**December 31, 2019**



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National Roads Authority  
Financial Statements  
31 December 2019

STATEMENT OF RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

These financial statements have been prepared by the National Roads Authority in accordance with the provisions of the *Public Management and Finance Law (2018 Revision)* and referenced to Section 26 (1b) of the *National Roads Authority (2016 Revision)*.

We accept responsibility for the accuracy and integrity of the financial information in these financial statements and their compliance with the *Public Management and Finance Law (2018 Revision)*.

As Chairman and Acting Managing Director, we are responsible for establishing; and have established and maintained a system of internal controls designed to provide reasonable assurance that the transactions recorded in the financial statements are authorised by law, and properly record the financial transactions of the National Roads Authority.


As Chairman and Acting Managing Director we are responsible for the preparation of the National Roads Authority financial statements and for the judgements made in them.

The financial statements fairly present the statement of financial position, statement of financial performance, statement of cash flows and statement of changes in net worth for the year ended 31 December 2019.

To the best of our knowledge we represent that these financial statements:

- (a) completely and reliably reflect the financial transactions of National Roads Authority for the year ended 31 December 2019;
- (b) fairly reflect the financial position as at 31 December 2019 and performance for the year ended 31 December 2019; and
- (c) comply with International Public Sector Accounting Standards as set out by the International Public Sector Accounting Standards Board. Where guidance is not available, the financial statements comply with International Accounting Standards issued by the International Accounting Standards Committee or accounting practice that is generally accepted in the United Kingdom as appropriate for reporting in the public sector.

The Office of the Auditor General conducts an independent audit and expresses an opinion on the accompanying financial statements. The Office of the Auditor General has been provided access to all the information necessary to conduct an audit in accordance with International Standards on Auditing.



John Edward Ebanks  
Chairman  
National Roads Authority

Date- 27<sup>th</sup> April 2020



Edward Howard  
Acting Managing Director  
National Roads Authority

Date- 27<sup>th</sup> April 2020

## **AUDITOR GENERAL'S REPORT**

**To the Board of Directors of the National Roads Authority**

### **Opinion**

I have audited the financial statements of the National Roads Authority (the "Authority"), which comprise the statement of financial position as at 31 December 2019 and the statement of financial performance, statement of changes in net worth and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies as set out on pages 8 to 34.

In my opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Authority as at 31 December 2019 and its financial performance and its cash flows for the year then ended in accordance with International Public Sector Accounting Standards.

### **Basis for Opinion**

I conducted my audit in accordance with International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of my report. I am independent of the Authority in accordance with the International Ethics Standards Board for Accountants' *Code of Ethics for Professional Accountants (IESBA Code)*, together with the ethical requirements that are relevant to my audit of the financial statements in the Cayman Islands, and I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

### **Emphasis of Matter**

As outlined in note 14 of the financial statements, *The Public Authorities Law (2020 Revision)*, Section 47 - *Terms and conditions and remuneration of staff* came into effect on 1 June 2019 and required all Statutory Authorities and Government Companies to comply with its requirements to standardise salaries and benefits. At the date of this report, the process to complete this standardisation has not been completed. My opinion is not modified in respect of this matter.

### **Responsibilities of Management and Those Charged with Governance for the Financial Statements**

Management is responsible for the preparation and fair presentation of the financial statements in accordance with International Public Sector Accounting Standards 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.

Those charged with governance are responsible for overseeing the Authority's financial reporting process.



## AUDITOR GENERAL'S REPORT (continued)

### Auditor's Responsibilities for the Audit of the Financial Statements

My 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 my 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, I exercise professional judgment and maintain professional skepticism throughout the audit. I 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 my 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 I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my 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 disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I have undertaken the audit in accordance with the provisions of section 60(1)(a) of the Public Management and Finance Law (2018 revision). I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.



Sue Winspear, CPFA  
Auditor General

27 April 2020  
Cayman Islands



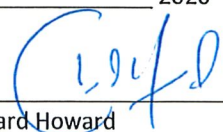
**National Roads Authority**  
**Statement of Financial Position**  
**As at 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

	Note	2019 \$	2018 \$
<b>ASSETS</b>			
<b>Current Assets</b>			
Cash and cash equivalents	3	6,977,448	3,912,597
Accounts receivable and prepayments	4	2,896,147	2,200,053
Inventories	5	53,852	95,160
<b>Total Current Assets</b>		<b>9,927,447</b>	<b>6,207,810</b>
<b>Non-Current Assets</b>			
Property, plant and equipment	6	2,521,025	2,658,220
<b>Total Assets</b>		<b>12,448,472</b>	<b>8,866,030</b>
<b>LIABILITIES AND EQUITY</b>			
<b>Current Liabilities</b>			
Accounts payable and accrued liabilities	7	1,645,406	1,252,609
Employee entitlements	8	93,497	64,603
<b>Total Current Liabilities</b>		<b>1,738,903</b>	<b>1,317,212</b>
<b>Non-Current Liability</b>			
Pension liability	11	1,041,000	912,000
Post-retirement health liability	12	24,884,000	15,545,000
<b>Total Non-Current Liabilities</b>		<b>25,925,000</b>	<b>16,457,000</b>
<b>Total Liabilities</b>		<b>27,663,903</b>	<b>17,774,212</b>
<b>Net Assets</b>		<b>(15,215,431)</b>	<b>(8,908,182)</b>
<b>Net Worth</b>			
Contributed capital	9	4,653,535	4,653,535
Accumulated Deficits		(19,868,966)	(13,561,717)
<b>Total Net Worth</b>		<b>(15,215,431)</b>	<b>(8,908,182)</b>

The accompanying notes on pages 8 - 34 form an integral part of these financial statements.

Approved on behalf of the Board on the 27<sup>th</sup> of April 2020

  
John Edward Ebanks  
Chairman

  
Edward Howard  
Acting Managing Director





**National Roads Authority**  
**Statement of Financial Performance**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

	Note	2019 \$	2018 \$
<b>REVENUE</b>	13	<b>20,953,909</b>	<b>15,787,834</b>
<b>COST OF GOODS SOLD</b>			
Subcontractors		6,384,831	4,008,034
Materials		1,970,681	1,516,264
Labour		2,603,843	2,328,871
Hired equipment		5,487	-
<b>Total Cost of Goods Sold</b>		<b>10,964,842</b>	<b>7,853,169</b>
<b>NET REVENUE</b>		<b>9,989,067</b>	<b>7,934,665</b>
<b>OPERATING EXPENSES</b>			
Personnel costs	10	3,869,709	3,757,283
Post- retirement health liability	12	1,679,000	1,869,028
Utilities		1,148,044	1,224,110
Motor vehicle expenses (including insurance)		726,737	610,963
Depreciation	6	498,984	557,771
Past service pension	11	205,829	255,000
Computer maintenance and fees		167,407	95,682
Professional fees		101,490	142,427
Building maintenance		142,110	61,015
Telephone		47,670	38,166
Supplies and consumables		34,885	29,211
Advertising and promotion		16,900	11,243
Bank charges		8,186	8,863
Insurance		5,933	8,585
Office rental		1,432	-
<b>Total Operating Expenses</b>		<b>8,654,316</b>	<b>8,669,347</b>
<b>SURPLUS /(DEFICIT)</b>		<b>1,334,751</b>	<b>(734,682)</b>

The accompanying notes on pages 8 - 34 form an integral part of these financial statements.



**National Roads Authority**  
**Statement of Changes in Net Worth**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

	Note	Accumulated Surplus (deficits) \$	Contributed Capital \$	Total \$
<b>Balance at 31 December 2017</b>		<b>(16,156,035)</b>	<b>4,541,535</b>	<b>(11,614,500)</b>
Capital Contribution		-	112,000	112,000
2018 deficit		(734,682)	-	(734,682)
Remeasurement of employment benefit obligation	11	494,000	-	494,000
Remeasurement of post-retirement health obligation	12	2,835,000	-	2,835,000
<b>Balance at 31 December 2018</b>		<b>(13,561,717)</b>	<b>4,653,535</b>	<b>(8,908,182)</b>
Capital Contribution		-	-	-
2019 surplus		1,334,751	-	1,334,751
Remeasurement of employment benefit obligation	11	18,000	-	18,000
Remeasurement of post-retirement health obligation	12	(7,660,000)	-	(7,660,000)
<b>Balance at 31 December 2019</b>		<b>(19,868,966)</b>	<b>4,653,535</b>	<b>(15,215,431)</b>

The accompanying notes on pages 8 - 34 form an integral part of these financial statements.

**National Roads Authority**  
**Statement of Cash Flows**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

	Note	2019 \$	2018 \$
<b>CASH FLOWS USED IN OPERATING ACTIVITIES</b>			
<b>Surplus / Deficit</b>		<b>1,334,751</b>	<b>(734,682)</b>
Adjustment for non-cash transactions:			
Depreciation	6	498,984	557,771
Post-retirement health liability – Defined benefit cost		1,795,000	1,948,000
Past service pension – Defined benefit cost		288,000	327,000
Gain on disposal of property, plant and equipment		(25,000)	(10,200)
<b>Total</b>		<b>3,891,735</b>	<b>2,087,889</b>
Net change in working capital			
Decrease in accounts receivable and prepayments		(696,093)	(866,324)
(Increase)/decrease in inventories		41,309	(28,408)
Increase/(decrease) in accounts payable and accrued liabilities		421,690	(441,337)
Post-retirement health liability – Employer contributions		(116,000)	(78,000)
Past service pension – Employer contributions		(141,000)	(72,000)
<b>Net cash flows from operating activities</b>		<b>3,401,641</b>	<b>601,820</b>
<b>CASH FLOWS USED IN INVESTING ACTIVITIES</b>			
Purchase of property, plant and equipment	6	(361,790)	(339,283)
Proceeds on sale of property, plant and equipment		25,000	10,200
<b>Net cash flows used in investing activities</b>		<b>(336,790)</b>	<b>(329,083)</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>			
Equity Investment		-	-
<b>Net cash flows from financing activities</b>		<b>-</b>	<b>-</b>
Net increase in cash and cash equivalents during the year		3,064,851	272,737
Cash and cash equivalents at the beginning of the year		3,912,597	3,639,860
<b>CASH AND CASH EQUIVALENTS AT END OF YEAR</b>	<b>3</b>	<b>6,977,448</b>	<b>3,912,597</b>

The accompanying notes on pages 8 - 34 form an integral part of these financial statements.

**National Roads Authority**  
**Statement of Cash Flows**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

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**1. Establishment and Principal Activity**

The National Roads Authority ("NRA" or "Authority") is an independent Statutory Authority which was created on 1 July 2004 by the National Roads Authority Law, 2004. The Authority reports on its operations to the Ministry of Commerce, Planning & Infrastructure of the Cayman Islands Government.

The NRA was created to administer, manage, control, develop and maintain the Island's public roads and related facilities, such as signals, storm water facilities, roadway lighting, and roadway directional signage. The scope of activities of the NRA include providing policy advice, publication of a National Roads Plan, provision of project and construction management services for the delivery of new road-works and the maintenance and management of the existing road infrastructure.

Section 19 of the *NRA Law 2006 Revision* was repealed effective on July 1, 2014 to make provision for the Authority to be funded from the Roads Fund. The substitution to the section of the law makes way for the Cabinet to authorize the transfer of revenue, not exceeding ten million dollars, to the Authority, via the Road Fund, for the purpose of funding the Authority's annual operating costs, in particular, the construction, upgrading, rehabilitation and maintenance of public roads.

As at 31 December 2019, the NRA had 90 employees (31 December 2018: 90 employees). The NRA is located at 342B Dorcy Drive, P.O. Box 10426, Grand Cayman KY1-1004, Cayman Islands.

**2. Significant Accounting Policies**

*(a) Basis of preparation*

These financial statements have been prepared in accordance with International Public Sector Accounting Standards (IPSAS) issued by the International Federation of Accountants and its International Accounting Standards Board using the accrual basis of accounting. Where additional guidance is required, International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board are used.

Certain new accounting standards have been published that are not mandatory for the 31 December 2019 reporting period and have not been early adopted by the Authority. The Authority's assessment of the impact of these new standards is set out below:

IPSAS 41, Financial Instruments was issued in August 2018 and shall be applied for financial statements covering periods beginning on or after 1 January 2022. IPSAS 41 establishes new requirements for classifying, recognizing and measuring financial instruments to replace those in IPSAS 29, Financial Instruments: Recognition and Measurement. It is anticipated that IPSAS 41 will not have a significant impact on the Authority's financial statements. This will be assessed more fully closer to the effective date of adoption.

The financial statements have been prepared on a going concern basis and the accounting policies set out below have been applied consistently to all periods presented. The financial statements of the Authority are presented in Cayman Island dollars and are prepared on the accrual basis under the historical cost convention.

**National Roads Authority**  
**Statement of Cash Flows**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

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**2. Significant Accounting Policies (continued)**

*(a) Basis of preparation (continued)*

Corresponding amounts

The corresponding amounts are the audited amounts for the year ended 31 December 2018. When presentation or classification of items in the financial statements is amended or accounting policies are changed, comparative figures are restated to ensure consistency with the current year unless it is impracticable to do so.

The significant accounting policies adopted by the NRA in these financial statements are as follows:

*(b) Cash and cash equivalents*

This comprises cash at bank and short term investments with maturity at inception of three months or less.

*(c) Foreign currency translation*

All assets and liabilities denominated in foreign currency are translated to Cayman Islands Dollars at exchange rates in effect at the financial position date. Revenue and expense transactions denominated in foreign currency are translated to Cayman Islands Dollars at exchange rates ruling at the date of those transactions. Gains and losses arising on translation are included in the statement of financial performance.

*(d) Property, plant and equipment/depreciation*

Property, plant and equipment include motor vehicles, heavy equipment, dump trucks, furniture and fixtures and computer hardware and software are stated at cost less accumulated depreciation and impairment losses. Depreciation is calculated on a straight-line basis at annual rates estimated to write off the carrying value of each asset over the period of its expected useful life.

Annual rates are as follows:

Vehicles and Heavy Equipment	4 - 12 Years
Furniture and Fixtures	3 - 15 Years
Computer Hardware and Software	3 - 6 Years
Other Plant and Equipment	3 - 20 Years

*(e) Accounts receivables*

Receivables are stated at original invoice amounts less provision for doubtful debts.

*(f) Allowance for bad debts*

The allowance for bad debts is established through a provision for bad debts charged to expenses. Accounts receivable are written off against the allowance when management believes that the collectability of the amount is unlikely. The allowance is an amount that management believes will be adequate to cover any bad debts, based on an evaluation of collectability and prior bad debts experience.



**National Roads Authority**  
**Statement of Cash Flows**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

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**2. Significant Accounting Policies (continued)**

*(g) Accounts Payable and accrued liabilities*

Accounts payable are recorded at the amount owing after allowing for credit notes and other adjustments.

*(h) Employee entitlements*

*Pension Plans*

The Authority makes pension contributions for its eligible employees to the Public Service Pensions Fund, which is administered by the Public Service Pensions Board. The Fund has both a defined benefit and a defined contribution element.

Under defined contribution plans, the Authority pays fixed contributions and has no obligation to pay further contributions if the fund does not have sufficient assets to pay employee benefits relating to employee service in the current and prior periods. The Authority recognises contributions to a defined contribution plan when an employee has rendered services in exchange for those contributions.

A defined benefit plan is one that defines an amount of benefit to be provided, usually as a function of one or more factors such as age, years of service or compensation. The asset or liability in respect of defined benefit plans is the difference between the present value of the defined benefit obligation at the financial position date and the fair value of plan assets, adjusted for unrecognised actuarial gains/losses and past service cost. Where a pension asset arises, the amount recognised is limited to the net total of any cumulative unrecognised net actuarial losses and past service cost and the present value of any economic benefits available in the form of refunds from the plan or reduction in future contributions to the plan. The pension costs are assessed using the Projected Unit Credit Method. Under this method the cost of providing pensions is charged in the statement of financial performance so as to spread the regular cost over the service lives of employees in accordance with advice of the actuary, (who is due to carry out a full valuation of the plans every year). The pension obligation is measured at the present value of the estimated future cash outflows using discount estimated rates based on market yields on high quality corporate bonds at the time of the accounting date which have terms to maturity approximating the terms of the related liability.

Obligations for contributions to defined contribution and defined benefits pension plans are recognized as an expense in the statement of financial performance as incurred. (See also Note 11).

Amounts incurred but not paid at the end of the reporting period are accrued. Annual leave due, but not taken, is recognized as a liability.

**National Roads Authority**  
**Statement of Cash Flows**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

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**2. Significant Accounting Policies (continued)**

*(i) Revenue recognition*

Revenue from sale of services to other government agencies is recognised when it is earned. Unearned revenue comprises amounts paid to the Authority in advance of work performed and amounts which the Authority has invoiced for in advance of work performed. These unearned amounts are recognized as revenue in the statement of financial performance as work is performed related to the amounts received or billed in advance. Investment revenue is recognised in the period in which it is earned. Donations are recognised at fair value at the time of receipt.

*(j) Expense recognition*

Expenses are recognised when incurred.

*(k) Financial Instruments*

*(i) Classification*

A financial asset is classified as any asset that is cash, a contractual right to receive cash or another financial asset, exchange financial instruments under conditions that are potentially favourable or an equity instrument of another enterprise. Financial assets comprise of cash and cash equivalents and accounts receivable.

A financial liability is any liability that is a contractual obligation to deliver cash or another financial instrument or to exchange financial instruments with another enterprise under conditions that are potentially unfavourable. Financial liabilities comprise of accounts payable, unearned revenue and employee entitlements.

*(ii) Recognition*

The Authority recognises financial assets and financial liabilities on the date it becomes party to the contractual provisions of the instrument. From this date, any gains and losses arising from changes in fair value of the assets or liabilities are recognised in the statement of financial performance.

*(iii) Measurement*

Financial instruments are measured initially at cost which is the fair value of the consideration given or received. Subsequent to initial recognition all financial assets are recorded at historical cost, which is considered to approximate fair value due to the short-term or immediate nature of these instruments.

*(iv) Derecognition*

A financial asset is derecognised when the Authority realises the rights to the benefits specified in the contract or loses control over any right that comprise that asset. A financial liability is derecognised when it is extinguished, that is when the obligation is discharged, cancelled, or expired.

*(v) Credit Risk*

Cash and short term investments are held with substantial financial institutions. Receivables are short term and settled after the year-end.

**National Roads Authority**  
**Statement of Cash Flows**  
**For the year ended 31 December 2019**  
**(Stated in Cayman Islands Dollars)**

**2. Significant Accounting Policies (continued)**

*(k) Financial Instruments (continued)*

*(vi) Interest Rate Risk*

The Authority's income and operating cash flows are substantially independent of changes in market interest rates.

**3. Cash and Cash Equivalents**

	2019 \$	2018 \$
Bank account	3,298,474	2,036,624
Short term deposits	3,678,974	1,875,973
<b>Total Cash and Cash Equivalents</b>	<b>6,977,448</b>	<b>3,912,597</b>

The Board of Directors resolved to fund the post-retirement health liability with annual contributions as advised during 2016 by the Actuaries with an annual minimal amount of \$1,500,000. NRA holds the funds approved by the Board in a term deposit account held with RBC Royal Bank (Cayman Islands). The funds held in the term deposit account do not qualify as a "Plan Asset" as defined by IPSAS 39, Employee Benefits, and therefore have not been offset against the year-end post-retirement health liability of \$24,884,000. Ongoing steps are being pursued by the NRA to place these funds in a qualifying financial vehicle to allow the funds to meet the requirements of IPSAS 39, Employee Benefits.

**4. Accounts Receivable and Prepayments**

	2019 \$	2018 \$
Receivables from Core Government	2,516,981	1,945,077
Receivables from other government agencies	6,893	104,081
Other accounts receivable and prepayments	370,142	148,065
Staff loans	2,131	2,830
<b>Total Accounts Receivable</b>	<b>2,896,147</b>	<b>2,200,053</b>

Receivables from core government include \$168,935 (2018: \$167,379) relating to retentions on road construction contracts.

**5. Inventories**

	2019 \$	2018 \$
Finished Goods - Cayman Rock	2,801	307
Finished Goods - AE60	10,086	52,326
Finished Goods - Crusher Run	24,280	19,492
Finished Goods - 3/8 Washed Chips	5,070	7,723
Finished Goods - Sand	1,219	541
Finished Goods - Concrete Stone	10,396	14,771
<b>Total Inventories</b>	<b>53,852</b>	<b>95,160</b>

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**6. Property, Plant and Equipment**

	<b>Vehicles &amp; Heavy Equipment</b>	<b>Furniture &amp; Fixtures &amp; Office Equipment</b>	<b>IT Equipment</b>	<b>Other Plant &amp; Equipment</b>	<b>Leasehold Improvement</b>	<b>Total</b>
<b>Cost</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
Opening 2016/17	3,474,818	180,133	262,389	3,202,723	273,837	7,393,900
Additions 2018	251,544	838	52,215	34,686	-	339,283
Disposals 2018	(22,500)	-	-	(432,242)	-	(454,742)
As at 2018	3,703,862	180,971	314,604	2,805,167	273,837	7,278,441
Additions 2019	157,776	86,223	38,669	79,121	-	361,789
Asset write-backs	-	-	-	13,858	-	13,858
Asset write-offs	(192,982)	-	(72,742)	-	-	(265,724)
Disposals 2019	(37,760)	-	-	-	-	(37,760)
As at 2019	3,630,896	267,194	280,531	2,898,146	273,837	7,350,604
<b>Accumulated Depreciation</b>						
Opening 2016/17	2,308,286	151,638	241,593	1,541,838	273,837	4,517,192
Depreciation 2018	273,216	5,256	9,348	269,951	-	557,771
Depreciation on Disposal 2018	(22,500)	-	-	(432,242)	-	(454,742)
As at 2018	2,559,002	156,894	250,941	1,379,547	273,837	4,620,221
Depreciation 2019	230,592	5,202	18,154	245,036	-	498,984
Write-backs	-	-	-	13,858	-	13,858
Write-offs	(192,982)	-	(72,742)	-	-	(265,724)
Depreciation on Disposal 2019	(37,760)	-	-	-	-	(37,760)
As at 2019	2,558,852	162,096	196,353	1,638,441	273,837	4,829,579
<b>Net Book Value - 2018</b>	<b>1,144,860</b>	<b>24,077</b>	<b>63,663</b>	<b>1,425,620</b>	<b>-</b>	<b>2,658,220</b>
<b>Net Book Value - 2019</b>	<b>1,072,044</b>	<b>105,098</b>	<b>84,178</b>	<b>1,259,705</b>	<b>-</b>	<b>2,521,025</b>

During 2019, management performed a reconciliation between the asset register maintained by the Finance Department and that maintained by the Fleet Manager. The reconciliation resulted in the asset write-backs and write-offs reflected in the movement schedule. The net book value of the assets written off and the assets written back is \$0 (Nil).

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**7. Accounts Payable and Accrued Liabilities**

	2019 \$	2018 \$
Trade creditors	1,595,558	1,135,975
Wages payable	49,848	116,634
<b>Total Accounts Payable and Accrued Liabilities</b>	<b>1,645,406</b>	<b>1,252,609</b>

Trade creditors include \$168,935 (2018: \$167,379) relating to retentions on road construction contracts. The retentions are generally payable to sub-contractors 6 months after road construction works are completed to the Authority's satisfaction and defects in materials and workmanship, if any, have been corrected.

**8. Employee Entitlements**

The leave entitlements are calculated based on current salary paid to those employees who are eligible for this benefit. During the year, accrued vacation leave amounted to \$93,497 (2018: \$64,603).

**9. Contributed Capital**

During the year, the Authority received no equity injections (2018: \$112,000).

**10. Personnel Costs**

	2019 \$	2018 \$
Salaries and wages	2,001,223	2,107,365
Health Insurance	1,454,889	1,316,787
Employer and Employee pension expenses	218,809	225,835
Vacation due	28,893	17,242
Other personnel costs	165,895	90,054
<b>Total Personnel Costs</b>	<b>3,869,709</b>	<b>3,757,283</b>

**11. Pensions**

Pension contributions for eligible employees of the Authority are paid to the Public Service Pensions Fund (the "Fund"). The Fund is administered by the Public Service Pensions Board ("the Pensions Board") and is operated as a multi-employer plan. Prior to 1 January 2000 the scheme underlying the Fund was a defined benefit scheme. With effect from 1 January 2000 the Fund had both a defined benefit and a defined contribution element, with participants joining after 1 January 2000 becoming members of the defined contribution element only.

Benefit obligations are estimated using the Projected Unit Credit method. Under this method, each participant's benefits under the plan are attributed to years of service, taking into consideration future salary increases and the plan's benefit allocation formula. Thus, the estimated total pension to which each participant is expected to become entitled at retirement is broken down into units, each associated with a year of past or future credited service.



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**11. Pensions (continued)**

The Fund has been valued by the Actuary (Mercer) to the Pensions Board. The defined contribution part of the Fund is not subject to the special actuarial valuations due to the nature of the benefits provided therein.

The Authority paid both the employee and employers contributions. The actual amount of pension expense relating to the defined benefits for staff also includes the effect of the changes in the actuarial determined liability.

In March 2005, the Financial Secretary of the Cayman Islands Government informed the Authority that the decision to keep the unfunded past service liability a central liability of the Government had been reversed and the Authority recognizes the unfunded past service liability as a liability in its financial statements.

*The amounts recognized in the statement of financial position is as follows:*

	<b>2019</b>	<b>2018</b>
	<b>\$000</b>	<b>\$000</b>
Defined benefit obligation	5,903	4,759
Fair value of plan assets	4,862	3,847
Funded status	1,041	912
Net liability	1,041	912

*The change in defined benefit obligation is as follows:*

	<b>2019</b>	<b>2018</b>
	<b>\$000</b>	<b>\$000</b>
Defined benefit obligation at end of prior year	4,759	5,130
Service Cost	253	290
Interest expense	200	180
Cash flows	(144)	(39)
Remeasurements	835	(802)
Defined benefit obligation at end of year	5,903	4,759

*The change in fair value of plan assets is as follows:*

	<b>2019</b>	<b>2018</b>
	<b>\$000</b>	<b>\$000</b>
Fair value of plan assets at end of prior year	3,847	3,979
Interest Income	165	143
Cash flows – employer and participant contributions	(3)	33
Remeasurements	853	(308)
Fair value of plan assets at end of year	4,862	3,847

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**11. Pensions (continued)**

*The net defined benefit liability (asset) reconciliation:*

	2019 \$000	2018 \$000
Net defined benefit liability as of beginning of year	912	1,151
Defined benefit cost included in the Profit & Loss	288	327
Total remeasurements included in the Statement of Changes in Net Worth	(18)	(494)
Cash flows	(141)	(72)
Net defined benefit liability as of end of year	1,041	912

*The components of defined benefit cost are as follows:*

	2019 \$000	2018 \$000
Service Cost	253	290
Net interest cost		
Interest expense on DBO	200	180
Interest (income) on plan assets	(165)	(143)
Total net interest cost	35	37
Defined benefit cost included in Profit & Loss (P&L)	288	327
Effect of changes in demographic assumptions	(26)	(47)
Effect of changes in financial assumptions	1,279	(810)
Effect of experience adjustments	(418)	55
(Return) on plan assets (excluding interest income)	(853)	308
(Return) on reimbursement rights (excluding interest income)	-	-
Changes in asset ceiling/onerous liability (excluding interest income)	-	-
Total remeasurements included in the Statement of Changes in Net Worth (SCNW)	(18)	(494)
Total defined benefit cost recognized in the P&L and SCNW	270	(167)

*The sensitivity analysis on defined benefit obligation is shown below:*

	2019	2018
1. Discount rate		
a. Discount rate – 25 basis points	6,252	5,025
b. Discount rate + 25 basis points	5,579	4,512
2. Inflation rate		
a. Inflation rate – 25 basis points	5,589	4,519
b. Inflation rate + 25 basis points	6,240	5,016
3. Mortality		
a. Mortality - 10% of current rates	6,053	4,862
b. Mortality + 10% of current rates	5,765	4,665

*The expected cash flow for the following year is as follows:*

	Amount (\$000)
Expected employer contributions	92      101

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**11. Pensions (continued)**

*The significant actuarial assumptions are presented below:*

Weighted-average assumptions to determine defined benefit obligations

	<b>2019</b>	<b>2018</b>
1. Effective discount rate for defined benefit obligation	3.50%	4.50%
2. Rate of salary increase	2.50%	2.50%
3. Rate of price inflation	2.00%	2.00%
4. Rate of pension increases	2.00%	2.00%
5. Post-retirement mortality table	RP-2014 scaled back to 2006 using Scale MP-2014 then generationally Projected using Scale MP-2019	RP-2014 scaled back to 2006 using Scale MP-2014 then generationally Projected using Scale MP-2018
6. Cost Method	Projected Unit Credit	Projected Unit Credit
7. Asset valuation method	Market Value	Market Value

Weighted-average assumptions to determine defined benefit cost

	<b>2019</b>	<b>2018</b>
1. Effective rate for net interest cost	4.20%	3.50%
2. Effective discount rate for service cost	4.55%	3.85%
3. Effective rate for interest on service cost	4.40%	3.70%
4. Rate of salary increase	2.50%	2.50%
5. Rate of price inflation	2.00%	2.00%
6. Rate of pension increases	2.00%	2.00%
7. Post-retirement mortality table	RP-2014 scaled back to 2006 using scale MP-2014 then generational projected from 2006 using Scale MP-2018	RP-2014 scaled back to 2006 using scale MP-2014 then generational projected from 2006 using Scale MP-2016

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**11. Pensions (continued)**

***Plan Assets***

The Defined Benefit assets as well as Defined Contribution assets of the Plan are held as part of the Public Service Pensions Fund ("the Fund") and managed by the PSPB. The assets of two other pension plans are pooled together to constitute the Fund. The assets are notionally allocated to each of the three participating pension plans through an internal accounting mechanism that tracks, for each accounting period, actual cash flows and allocates investment income and expenses in proportion to the opening value of assets allocated. Based on the data provided, the gross rate of return earned by the Fund for the fiscal 2019 was 26.66% and 4.13% for fiscal 2018. Similar internal accounting is used for developing each participating entity's share of the asset portfolio of the Fund.

The valuations are based on the asset values as at 31 December 2019 as well as asset value as at 31 December 2018 provided by PSPB, along with cash flow and other supplemental asset information. The assets are held in trust by CIBC Mellon.

The Fund currently has investment policy with a target asset mix of 80% equities and 20% bonds. As at 31 December 2019, the Fund was invested as follows:

<b>Plan Assets by Asset Category</b>	<b>2019</b>		<b>2018</b>	
	<b>(\$000)</b>	<b>Percentage</b>	<b>(\$000)</b>	<b>Percentage</b>
Global equities securities	680,288	79%	523,688	79%
Debt securities	167,692	20%	134,985	20%
Cash	10,444	1%	5,056	1%
<b>Total</b>	<b>858,424</b>	<b>100%</b>	<b>663,729</b>	<b>100%</b>

For fiscal 2019, the Defined Contribution portion of the Fund totaled to \$392,935,800 and \$361,762,700 as at 31 December 2018 as provided by PSPB. The share of the Fund that has been notionally allocated to NRA with regards to its participation in the Defined Benefit Part of the Plan is \$4.862 million as at 31 December 2019 (2018 \$3.847 million).

**The Actuarial Assumptions**

The actuarial assumptions have been approved by the Financial Secretary, the main sponsor of the Plan. The principal financial and demographic assumptions used at 31 December 2019 and 31 December 2018 are shown in the table below. The assumptions as at the reporting date are used to determine the present value of the benefit obligation at that date and the pension expense for the period.

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**11. Pensions (continued)**

**Turnover Rates at sample ages:**

<b>Age</b>	<b>Males</b>	<b>Females</b>
20	7.5%	12.5%
25	5.0%	12.5%
30	3.5%	7.5%
35	2.5%	4.5%
40	1.5%	2.5%
45	0.5%	5.0%
50	0.0%	0.0%

**Retirement Rates:**

<b>Age</b>	<b>%</b>
Below 55	0%
55-59	8%
60	60%
61-64	8%
65	100%

<b>Measurement Date</b>	<b>2019</b>	<b>2018</b>
Discount rate		
-BOY benefit obligation disclosure	4.50%	3.80%
-BOY benefit obligation disclosure	3.50%	4.50%
-Following year current service cost	3.60%	4.55%
-Rate used to determine interest on defined benefit obligation and plan assets for following year expenses	3.15%	4.20%
-Rate used to determine interest on current service cost for following year expenses	3.40%	4.40%
Increases in pensionable earnings	2.50%	2.50%
Rate of Pension Increases	2.00%	2.00%



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**11. Pensions (continued)**

Mortality		
BOY disclosure and current year expense	RP-2014 generationally projected using Scale MP-2014, then generationally projected from 2006 using Scale MP – 2018.	RP-2014 generationally projected using Scale MP-2014, then generationally projected from 2006 using Scale MP – 2016.
EOY disclosure and following year expense	RP-2014 scaled back to 2006 using Scale MP-2014, then generationally projected using Scale MP-2019	RP-2014 scaled back to 2006 using Scale MP-2014, then generationally projected using Scale MP-2018
Disability	None	None
Turnover Rates	See turnover rates in table above	See turnover rates in table above
Retirement	See retirement rates in table above	See retirement rates in table above
Assumed life expectations on retirement	Retiring today (member age 57) 28.66 Retiring in 25 years (at age 57): 30.93	Retiring today (member age 57) 28.80 Retiring in 25 years (at age 57): 31.08
Liability Cost Method	Projected unit credit method	Projected unit credit method
<b>Measurement Date</b>	<b>2019</b>	<b>2018</b>
Asset Value Method	Market Value of Assets	Market Value of Assets
Commutation of pension	All members commute 25% at retirement	All members commute 25% at retirement

There have been no changes in actuarial assumptions since the prior valuation other than the changes to the principal assumptions shown in the table above.

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**12. Defined benefit liability: Post-retirement health liability**

The National Roads Authority provides health care benefits to staff members that transferred from Public Works Department in accordance to the NRA law. The benefit is in the form of continuation of their health insurance coverage on the medical plan in force for active employees. The premiums for this health insurance coverage are paid for by the National Roads Authority for all eligible retirees until the end of their lives. This coverage falls within the definition of a defined benefit by the International Public Sector Accounting Standards and as such represents a future liability of the National Roads Authority. The National Roads Authority is required to use the actuarial valuation method to determine the present value of its health insurance benefit obligations for its former workers as well as future retirees and the related current service costs. International Public Sector Accounting Standards IPSAS 39 directs that funded or unfunded post-employment benefits must be recognized in the statement of financial position (in the case of net defined liability or asset) and the statement of financial performance (for the annual expense).

These actuarial valuations use several financial and demographic assumptions to determine the liability and current expense of the benefits which will be honoured on behalf of the retirees. Financial assumptions include, the discount rate, estimated future costs of the medical premiums, and the claims rate for the medical plans. Demographic assumptions include estimated mortality and benefits levels.

The Authority commissioned Mercer actuaries of Canada to provide this service and the results of their assessment are included hereunder. The National Roads Authority has a present value net defined benefit obligation of \$24,884,000 at the end of the financial year 31 December 2019 (2018: \$15,545,000). The details of the valuation and the assumptions used are reproduced hereunder in accordance with IPSAS 39.

The Board of Directors resolved to fund the post-retirement health liability with annual contributions as advised during 2016 by the Actuaries with an annual minimal amount of \$1,500,000. NRA holds the funds approved by the Board in a term deposit account held with RBC Royal Bank (Cayman Islands). The funds held in the term deposit account do not qualify as a "Plan Asset" as defined by IPSAS 39, Employee Benefits, and therefore have not been offset against the year-end post-retirement health liability of \$24,884,000. Ongoing steps are being pursued by the NRA to place these funds in a qualifying financial vehicle to allow the funds to meet the requirements of IPSAS 39, Employee Benefits.

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**12. Defined benefit liability: Post-retirement health liability (continued)**

Plan Name Financial year ending on:	National Roads Authority	
	31 Dec 2019 \$	31 Dec 2018 \$
<b>A. Change in defined benefit obligation</b>		
1. Defined benefit obligation at end of prior year	15,545,000	16,510,000
2. Service cost		
a. Current service cost	1,121,000	1,347,000
b. Past service cost	-	-
c. (Gain) / loss on settlements	-	-
3. Interest expense	674,000	601,000
4. Cash flows		
a. Benefit payments from plan assets	-	-
d. Benefit payments from employer	(116,000)	(78,000)
5. Other significant events		
6. Remeasurements		
a. Effect of changes in demographic assumptions	1,597,000	(155,000)
b. Effect of changes in financial assumptions	5,030,000	(2,713,000)
c. Effect of experience adjustments	1,033,000	33,000
7. Effect of changes in Foreign exchange rates	-	-
8. Defined benefit obligation at the end of year	<u>24,884,000</u>	<u>15,545,000</u>
<b>B. Change in fair value of plan assets</b>		
1. Fair value of plan assets at end of prior year	-	-
2. Interest income	-	-
3. Cash flows		
a. Total employer contributions		
i. Employer contributions	-	-
ii. Employer direct benefit payments	116,000	78,000
iii. Employer direct settlement payments	-	-
b. Participant contributions	-	-
c. Benefit payments from plan assets	-	-
d. Benefit payments from employers	(116,000)	(78,000)
e. Settlement payments from plan assets	-	-
f. Settlement payments from employer	-	-
g. Administrative expenses paid from plan assets	-	-
h. Taxes paid from plan assets	-	-
i. Insurance premiums for risk benefits	-	-
4. Other significant events	-	-
a. Increase / (decrease) due to effect of any business combinations/ divestures or transfers	-	-
b. Increase / (decrease) due to plan combinations	-	-
5. Remeasurements	-	-
a. Return on plan assets (excluding interest income)	-	-
6. Effect of change in foreign exchange rates	-	-
7. Fair Value of plan assets at end of year	<u>-</u>	<u>-</u>
<b>C. Amounts recognized in the statement of financial position</b>		
1. Defined benefit obligation	24,884,000	15,545,000
2. Fair value of plan assets	<u>-</u>	<u>-</u>
3. Funded status	24,884,000	15,545,000
4. Effect of asset ceiling/onerous liability	-	-
5. Net defined benefit liability/(asset)	<u>24,884,000</u>	<u>15,545,000</u>

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**12. Defined benefit liability: Post-retirement health liability (continued)**

Financial year ending on:	31 Dec 2019 \$	31 Dec 2018 \$
<b>D. Components of defined benefit cost</b>		
1. Service cost	1,121,000	1,347,000
a. Current service cost	-	-
b. Reimbursement service cost	-	-
c. Past service cost	-	-
d. (Gain) / loss on settlements	-	-
e. Total service cost	1,121,000	1,347,000
2. Net interest cost		
a. Interest expense on Defined Benefit Obligation (DBO)	674,000	601,000
b. Interest /(income) on plan assets	674,000	601,000
c. Total net interest cost	-	-
3. Remeasurements of Other Long Term Benefits	-	-
4. Administrative expenses and/or taxes (not reserved within DBO)	-	-
5. Defined benefit cost included in Profit and Loss (P&L)	1,795,000	1,948,000
6. Remeasurements (recognized in the Statement of Changes in Net Worth (SCNW))		
a. Effect of changes in demographic assumptions	1,597,000	(155,000)
b. Effect of changes in financial assumptions	5,030,000	(2,713,000)
c. Effect of experience adjustments	1,033,000	33,000
d. Total remeasurement included in the Statement of Changes in Net Worth	7,660,000	(2,835,000)
7. Total defined benefit cost recognized in the P&L and SCNW	9,455,000	(887,000)
<b>E. Net defined benefit liability/(asset) reconciliation</b>		
1. Net defined benefit liability/(asset)	15,545,000	16,510,000
2. Defined benefit cost included in P&L	1,795,000	1,948,000
3. Total remeasurement included in OCI	7,660,000	(2,835,000)
4. Other significant events		
a. Net transfer in/(out) (including the effect of any business combinations/divestitures)	-	-
b. Amounts recognized due to plan combinations	-	-
5. Cash Flows		
a. Employer contributions	-	-
b. Employer direct benefit payments	(116,000)	(78,000)
c. Employer direct settlements payments	-	-
6. Credit to reimbursements	-	-
7. Effect of changes in Foreign exchange rates	-	-
8. Net defined benefit liability/(asset) as of end of year	24,884,000	15,545,000
<b>F. Define benefit obligation</b>		
1. Defined benefit obligation by participant status		
a. Actives	19,045,000	14,364,000
b. Vested deferred	-	-
c. Retirees	5,839,000	1,181,000
d. Total	24,884,000	15,545,000

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**12. Defined benefit liability: Post-retirement health liability (continued)**

Financial year ending on	31 Dec 2019	31 Dec 2018
<b>G. Significant actuarial assumptions</b>		
<i>Weighted-average assumptions to determine defined benefit obligations</i>		
Discount rate	3.60%	4.55%
Health care cost trend rates		
Immediate trend rate	5.00%	5.00%
Ultimate trend rate	5.00%	5.00%
Year rate reaches ultimate trend rate	N/A	N/A
Post- retirement mortality assumption	RP-2014 Projected w/MP-2019	RP-2014 Projected w/MP-2018
<i>Weighted-average assumptions to determine defined benefit cost</i>		
Effective discount rate for defined benefit obligation		
Effective rate for net interest cost	4.55%	3.85%
Effective discount rate for service cost	4.35%	3.65%
Effective rate for interest on service cost	4.60%	3.90%
Health care cost trend rates	4.60%	3.85%
Immediate trend rate	5.00%	5.00%
Ultimate trend rate	5.00%	5.00%
Year rate reaches ultimate trend rate	N/A	N/A
Post- retirement mortality assumption	RP-2014 Projected w/MP 2018	RP-2014 Projected w/MP 2016
<b>H. Sensitivity analysis</b>		
<i>Present value of defined benefit obligations</i>		
Effective Discount rate - 25 basis points	1,593,000	953,000
Effective Discount rate + 25 basis points	(1,471,000)	(882,000)
Health care cost trend rates – 100 basis points	(5,145,000)	(3,153,000)
Health care cost trend rates + 100 basis points	6,886,000	4,186,000
Post- retirement mortality assumption + 10%	(1,141,000)	(665,000)
<b>I. Expected cash flows for following year</b>		
a. Expected employer contributions	185,000	116,000
b. Expected contributions to reimbursement rights		
c. Expected total benefit payments		
Year 1	185,000	116,000
Year 2	236,000	145,000
Year 3	279,000	176,000
Year 4	306,000	209,000
Year 5	334,000	244,000
Next 5 years	2,504,000	1,868,000

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**12. Defined benefit liability: Post-retirement health liability (continued)**

*The Actuarial Assumptions*

The actuarial assumptions as at the reporting date are used to determine the present value of the defined benefit obligation (DBO) at that date and the defined benefit cost for the following year. We have used actuarial assumptions selected by NRA, which are consistent with the assumptions used to determine the results for the Cayman Islands Government's ("CIG") Post Retirement Healthcare Program. The principal financial and demographic assumptions used at 31 December 2019 and 31 December 2018 are shown in the table below:

Economic Assumptions	Postretirement Healthcare	Basis of Development – Accounting Specific Assumptions
Discount rate benefit obligation(p.a)		IAS 19 para. 83 determined by reference to market yields on high quality corporate bonds (consistent with the term of the benefit obligations) at the fiscal year end date.
- 31 December 2018	4.55% per annum	Mercer US Above Mean Yield Curve (referencing US corporate bond yields) used to determine discount rates due to strong economic and currency links between the US and Cayman Islands.
- 31 December 2019	3.60% per annum	
Discount rate next year service costs(p.a)		
- 31 December 2018	4.60% per annum	
- 31 December 2019	3.70% per annum	
Administrative expenses	Included in projected premiums	
Rate of Medical Inflation (p.a)	5.00%	Based on an analysis of historical claims information and long-term medical inflation expectations.

Demographic Assumptions	Postretirement Healthcare	Basis of Development – Accounting Specific Assumptions
Current mortality rates 31December 2017 31 December 2018	RP-2014 Mortality Table scaled back to 2006 using MP-2014	Recent mortality studies in the U.S. and Canada shows that people are living longer. New mortality tables have been issued by U.S. and Canada. The mortality table has been updated to better reflect actual mortality improvement rates experienced in the US over the last 20 years.
Mortality improvements 31 December 2018 31 December 2019	Scale MP-2018 Scale MP-2019	Broad consensus amongst longevity experts that mortality improvement will continue in the future. Scale MP-2014 was released October 2014. In the U.S, the latest future mortality improvement scale issued by the Society of Actuaries is Scale MP-2019. The prior valuation used scale MP-2018.
Turnover rates	Age & gender based rates – see below	
Disability rates	None	
Retirement Age as per Public Service Pension Plan	Age & gender based rates – see below	
Material assumption	80% married, wife 3 years younger	
Current healthcare claims cost assumption	Based on CIG 2020 premium rates Health \$12,830 per participant Dental \$1,500 per participant	The National Roads Authority provides 100% coverage for employees, spouses and dependants and also retires and retires spouses' premiums.
Healthcare coverage – future pensioners	Male 27% single, 73% family Female 50% single, 50% family	Based on CIG experience
Healthcare utilization changes due to age	Mercer standard healthcare aging assumptions for medical and dental	Based on analysis of healthcare utilization for Mercer clients in Canada and US and by reference to Society of Actuaries studies.



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**12. Defined benefit liability: Post-retirement health liability (continued)**

**Turnover Rates**

Age	Males	Females
20-24	7.5%	12.5%
25-29	5.0%	12.5%
30-34	3.5%	7.5%
35-39	2.5%	4.5%
40-44	1.5%	2.5%
45-49	0.5%	0.5%
50 +	0.0%	0.0%

**Retirement Rates:**

Age	%
Below 55	0%
55-59	8%
60	60%
61-64	8%
65	100%

The actuarial valuation results showed that a liability of \$24,884,000 existed at 31 December 2019, represented by accumulated liability of \$15,545,000 as at 31 December 2018 and service costs and adjustments totaling \$9,339,000 for the year ended 31 December 2019, resulting in a closing liability of \$24,884,000 at 31 December 2019.

**13. Related Party Transactions**

The Authority provided Services to Road Users on behalf of the Government relating to the development and maintenance of the public roads within the Cayman Islands funded through the Roads Fund which amounts to \$10 million under the Ownership Agreement (2018: \$10 million). During this year, the Authority also delivered Capital Expenditure Projects of \$10.6 million (2018: \$5.3 million) to the Government for the construction of roads under the Ownership Agreement. The Authority also engages the services of other government departments of the Cayman Islands Government.

Sales to unrelated third parties of \$88,496 (2018: \$64,312) include services for drain wells and curbs, installation of signs, paving and trench reinstatement services.

	<b>2019</b>	<b>2018</b>
	<b>\$</b>	<b>\$</b>
Sales of services to Cabinet	10,583,525	5,285,730
Sales of services to other government agencies	281,888	437,792
Roads Fund and sales to third parties	10,088,496	10,064,312
<b>Total</b>	<b>20,953,909</b>	<b>15,787,834</b>

Upon creation of the Authority on 1 July 2004, no movable properties were vested to the Authority. Henceforth, the Public Works Department (PWD) allowed the Authority to use its

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**13. Related Party Transactions (continued)**

vehicles and heavy equipment for road construction and maintenance free of charge. As at 31 December 2019, the Authority owes PWD the amount of \$28k (2018: \$14k) for support services extended by the latter such as office and workshop accommodation, tenant's requirements, utilities, accounting services, service parking and compound security.

During the year, the Authority purchases goods and services worth \$53k (2018: \$39k) from companies partially owned or controlled by one of its Board members.

The remuneration of directors and other members of key management personnel during the year was \$806k (2018: \$945k). There were 15 personnel categorized in 2019 broken down as 6 key management personnel and 9 Directors (2018: 7 key management personnel and 9 Directors).

**14. Contingencies**

i) Section 47 of The Public Authorities Law, (2020 Revision), (the "PAL"):

Section 47 of the PAL came into effect on 1 June 2019. The section requires public authorities to use the same salary scale as determined by the Cayman Islands' Cabinet and requires the remuneration of employees of a public authority to be adjusted to reduce any differences between the public authorities' and public service's pay grades.

The Cayman Islands Government's Portfolio of the Civil Service had not completed its evaluation of NRA's salary grade versus that of the public service. As such, management could not adjust for the impact of section 47 of the PAL in these financial statements. Management is also unable to derive an estimate of the potential impact of the evaluation on its financial statements and as such, no resultant provisions have been made in these financial statements.

ii) Sections 39(2) and 39(3) of the PAL:

The Authority is required to comply with The Public Authorities Law, (2020 Revision), (the "PAL"). Amongst other matters, the PAL requires that where a public authority has surplus cash reserves for a period of more than ninety days, the surplus shall be paid to core government unless otherwise directed by Cabinet, after written consultation with the Board. The PAL also requires that a public authority pay dividends in accordance with the formulae established by the Minister of Finance and Economic Development (the "Ministry") after written consultation with the Board, unless otherwise directed by Cabinet.

For the 2019 financial year, NRA's total assets exceeded its total liabilities and as such it has been exempted from the requirement to pay dividends based on section 19(e) of the "Policy for the payment of annual dividends by statutory authorities and government companies (SAGCs)" approved by Cabinet on 8 January 2019.

NRA is also exempted from the requirement to pay surplus cash reserves to core government for the 2019 financial year based on an exemption granted by the Cayman Islands' Cabinet of Ministers in a meeting held on 11 February 2020.

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**14. Contingencies (continued)**

iii) Section 28(1) of the National Roads Authority Law (2016 Revision):

Under section 28(1) of the National Roads Authority Law (2016 Revision), an annual payment to the core government may be due. At the date of these financial statements there has been no request made.

iv) Litigations, claims and assessments

At the date of the audit opinion, the Authority was involved in pending/ threatened litigations, claims and assessments relating to a dispute with an ex-employee who is seeking damages for an injury sustained at work arising from alleged negligence by the Authority; and a dispute with a third party alleging accidental damage of power lines by NRA during field works. The potential provisions/ contingent liabilities have not been disclosed in these financial statements so as not to prejudice the position of the Authority in the disputes but will be disclosed in the financial statements of the Cayman Islands Government's Entire Public Sector.

**15. Financial Risk Management**

The Authority is exposed to a variety of financial risks including interest rate risk, credit risk and liquidity risk. The Authority's risk management policies are designed to identify and manage these risks, to set appropriate risk limits and controls, and to monitor the risks and adhere to limits by means of up to date and reliable information systems. These risks are managed within the parameters established by the Financial Regulations.

*Interest Rate Risk*

The Authority is subject to interest rate risk on the cash placed with a local bank which attracts interest. No interest payments are charged to customers on late payments on accounts receivable. The Authority is exposed to interest rate risk on its short term. The total interest earned during the year ended 31 December 2019 was \$3,001 (2018: \$972).

*Credit Risk*

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Authority. Financial assets which potentially expose the Authority to credit risk comprise cash and cash equivalents and accounts receivable.

The Authority is exposed to potential loss that would be incurred if the counterparty to the bank balances fails to discharge its obligation to repay. All bank balances are held with one financial institution (RBC Royal Bank (Cayman Islands)) located in the Cayman Islands which management considers to be financially secure and well managed.

The Authority is also exposed to a significant concentration of credit risk in relation to accounts receivables, majority of which are due from other Government entities. No credit limits have been established and no collateral is required from the Authority's debtors. None of these assets are impaired and management considers these debts to be recoverable in full.

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**15. Financial Risk Management (continued)**

The carrying amount of financial assets recorded in the financial statements represents the Authority's maximum exposure to credit risk.

*Liquidity Risk*

Liquidity risk is the risk that the Authority is unable to meet its payment obligations associated with its financial liabilities when they fall due. The ability of the Authority to meet its debts and obligations is dependent upon its ability to collect the debts outstanding to the Authority in a timely basis. As at 31 December 2019 and 31 Dec 2018, all of the financial liabilities were due within one month of the financial position dates.

**16. Financial Instruments- fair values**

As at 31 December 2019 and 31 December 2018, the carrying amount of cash deposits, accounts receivable, accounts payables and employee entitlements approximate their fair value due to their short-term maturities. Fair values are made at specific points in time, based on market conditions and information about the financial instrument. These estimates are subjective in nature and involve uncertainties and matters of significant judgement and therefore cannot be determined with precision. Changes in assumptions, economic conditions and other factors could cause significant changes in fair value estimates.

**17. Commitments**

There are no commitments as at 31 December 2019.

**18. Events Occurring After the Reporting Date (31st December 2019)**

In December 2019, a novel strain of coronavirus was reported to have surfaced in China. The global efforts to contain the spread of the coronavirus began to cause significant disruption in the global and local economies from January 2020 to date. While the disruption is currently expected to be temporary, there is considerable uncertainty around the duration. Therefore, while NRA expects this matter to negatively impact its operating results, the related financial impact and duration cannot be reasonably estimated at this time. At 31 December 2019, \$4k in accounts receivable was outstanding from entities not related to the Cayman Islands Government.

In addition, on the basis of management assessment and forecasts, management believes that the risk that NRA would not be able to meet its obligations as they become due is low and that NRA will continue as going concern for the foreseeable future.

Management is not aware of any other events after the reporting date which will have an impact on the financial statements at 31st December 2019.

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19. Explanations of major variances against budget

*Statement of Financial Position*

	2019 Actual	2019 Original Budget	2019 Final Budget	Variance Original vs Actual
	\$	\$	\$	\$
<b>ASSETS</b>				
<b>Current Assets</b>				
Cash and cash equivalents	6,977,448	4,077,316	4,077,316	(2,900,132)
Accounts receivable and prepayments	2,896,147	554,087	554,087	(2,342,060)
Inventories	53,852	65,950	65,950	12,098
<b>Total Current Assets</b>	<b>9,927,447</b>	<b>4,697,353</b>	<b>4,697,353</b>	<b>(5,230,094)</b>
<b>Non-Current Assets</b>				
Property, plant and equipment	2,521,025	2,877,192	2,877,192	356,167
<b>Total Assets</b>	<b>12,448,472</b>	<b>7,574,545</b>	<b>7,574,545</b>	<b>(4,873,927)</b>
<b>LIABILITIES AND EQUITY</b>				
<b>Current Liabilities</b>				
Accounts payable and accrued liabilities	1,645,406	995,301	995,301	(650,105)
Employee entitlements	93,497	50,128	50,128	(43,369)
<b>Total Current Liabilities</b>	<b>1,738,903</b>	<b>1,045,429</b>	<b>1,045,429</b>	<b>(693,474)</b>
<b>Non-Current Liability</b>				
Pension liability	1,041,000	3,933,986	3,933,986	2,892,986
Post-retirement health liability	24,884,000	19,164,000	19,164,000	(5,720,000)
<b>Total Non Current Liabilities</b>	<b>25,925,000</b>	<b>23,097,986</b>	<b>23,097,986</b>	<b>(2,827,014)</b>
<b>Total Liabilities</b>	<b>27,663,903</b>	<b>24,143,415</b>	<b>24,143,415</b>	<b>(3,520,488)</b>
<b>Net Assets</b>	<b>(15,215,431)</b>	<b>(16,568,870)</b>	<b>(16,568,870)</b>	<b>(1,353,439)</b>
<b>Net Worth</b>				
Contributed capital	4,653,535	4,541,535	4,653,535	(112,000)
Accumulated Deficits	(19,868,966)	(21,110,405)	(21,110,405)	(1,241,439)
<b>Total Net Worth</b>	<b>(15,215,431)</b>	<b>(16,568,870)</b>	<b>(16,456,870)</b>	<b>(1,353,439)</b>

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**19. Explanations of major variances against budget (continued)**

**Statement of Financial Position**

**Cash and Cash Equivalents**

Cash increase of \$2.9m resulted from the preserving of an additional \$1.8m at RBC for funding the post-retirement medical liability from the Authority's annual funding. In addition a further \$1.1m was conserved from the appointing of resources to capital works directed by the Ministry. These works allowed offsetting overhead costs by related additional Ministry revenue.

**Accounts receivable and prepayments**

The \$2.3 million variance in the actual Accounts Receivable when compared to the budget directly relates to non-budgeted billings to the Ministry of Commerce, Planning and Infrastructure (CPI) as a result of CPI's directives to complete Executive Assets (EA) works fully paid by the CPI beyond the scope of NRA's 12 month fiscal budget. The related invoices were settled in full prior to the issuance of these financial statements.

**Property, plant and equipment**

Property Plant and Equipment was \$356k under the budget due to equipment anticipated from Board of Directors approval of the need to upgrade/acquire equipment not acquired as at year-end.

**Accounts payable and accrued liabilities**

Accounts payable were \$650k over budget primarily due to balances of payments on goods and services delivered near year end resulting from late works performed on behalf of CPI. These payments to primary vendors have been settled in unison with payment receipts from CPI subsequent to period end.

**Pension liability**

Pension liability experienced a positive shift based on changes in actuarial report assumptions resulting in a decrease of \$2.89M when compared to budget. This movement relates to OCI activity which deviated from previous trend.

**Post-retirement health liability**

Post-retirement health liability experienced a greater than expected negative shift based on changes in actuarial report assumptions resulting in an increase of \$5.7M when compared to the budget. This negative movement was driven by remeasurements recognized in OCI.

**Net worth**

NRA received additional equity contribution in 2018 to fund a 5% cost of living adjustment to the Authority's employee salaries approved by Cabinet. This was not reflected in the original budget prepared for the 2018 and 2019 financial years hence the \$112k difference.



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**19. Explanations of major variances against budget (continued)**

***Statement of Financial Performance***

	2019	2019 Original Budget	2019 Final Budget	Variance Original vs Actual
	\$	\$	\$	\$
<b>REVENUE</b>	<b>20,953,909</b>	<b>10,335,184</b>	<b>10,335,184</b>	<b>(10,618,725)</b>
<b>COST OF GOODS SOLD</b>				
Subcontractors	6,384,831	945,327	945,327	(5,439,504)
Materials	1,970,681	995,957	995,957	(974,724)
Labour	2,603,843	2,395,005	2,395,005	(208,838)
Hired equipment	5,487	19,586	19,586	14,099
<b>Total Cost of Goods Sold</b>	<b>10,964,842</b>	<b>4,355,875</b>	<b>4,355,875</b>	<b>(6,608,967)</b>
<b>NET REVENUE</b>	<b>9,989,067</b>	<b>5,979,309</b>	<b>5,979,309</b>	<b>(4,009,758)</b>
<b>OPERATING EXPENSES</b>				
Personnel costs	3,869,709	3,351,566	3,351,566	(518,143)
Post- retirement health liability	1,679,000	1,500,000	1,500,000	(179,000)
Utilities	1,148,044	1,200,000	1,200,000	51,956
Motor vehicle expenses (including insurance)	726,737	491,365	491,365	(235,372)
Depreciation	498,984	556,466	556,466	57,482
Past service pension	205,829	166,000	166,000	(39,829)
Computer maintenance and fees	167,407	125,000	125,000	(42,407)
Professional fees	101,490	105,000	105,000	3,510
Building maintenance	142,110	59,500	59,500	(82,610)
Telephone	47,670	38,000	38,000	(9,670)
Supplies and consumables	34,885	35,850	35,850	965
Advertising and promotion	16,900	27,500	27,500	10,600
Bank charges	8,186	8,400	8,400	214
Insurance	5,933	6,525	6,525	592
Office Rental	1,432	-	-	(1,432)
<b>Total Operating Expenses</b>	<b>8,654,316</b>	<b>7,671,172</b>	<b>7,671,172</b>	<b>(983,144)</b>
<b>Surplus/ (Deficit)</b>	<b>1,334,751</b>	<b>(1,691,863)</b>	<b>(1,691,863)</b>	<b>(3,026,614)</b>

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**19. Explanations of major variances against budget (continued)**

Several categories were presented in summary within the Ownership Agreement whilst being presented in detailed form by NRA in their Financial Statements and throughout the course of the year. The ownership agreement figures shown below represent the budget actually approved by the Legislative Assembly, compared with the detailed Financial Statement figures. Note however the total Revenue and Expenses remained the same in both formats.

**Reconciliation of Ownership Agreement and the Statement of Financial Performance**

	2019 Approved Budget \$	Financial Statements 2019 \$
<b>REVENUE</b>	<b>10,335,184</b>	<b>10,335,184</b>
<b>COST OF GOODS SOLD</b>		
Labour	-	2,395,005
Materials	-	995,957
Subcontractors	-	945,327
Hired equipment	-	19,586
<b>Total Cost of Goods Sold</b>	<b>-</b>	<b>4,355,875</b>
<b>NET REVENUE</b>	<b>10,335,184</b>	<b>5,979,309</b>
<b>OPERATING EXPENSES</b>		
Personnel costs	5,746,571	3,351,566
Post- retirement health liability	1,500,000	1,500,000
Utilities	-	1,200,000
Motor vehicle expenses (including insurance)	-	491,365
Depreciation	556,466	556,466
Past service pension	166,000	166,000
Computer maintenance and fees	-	125,000
Professional fees	-	105,000
Building maintenance	-	59,500
Telephone	-	38,000
Advertising and promotion	-	27,500
Bank charges	-	8,400
Insurance	-	6,525
Travel & Subsistence	-	-
Supplies and consumables	4,058,010	35,850
<b>Total Operating Expenses</b>	<b>12,027,047</b>	<b>7,671,172</b>
<b>SURPLUS/ (DEFICIT)</b>	<b>(1,691,863)</b>	<b>(1,691,863)</b>

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**19. Explanations of major variances against budget (continued)**

**Statement of Financial Performance**

**Revenue**

Revenue saw a positive variance of \$10.6M when compared to budget, the primary drivers being \$10.3M executive asset works which were completed on the directive of the Ministry of Commerce, Planning and Infrastructure and \$250k in works related to Island wide Cleanup projects. These projects were not included in initial budgeted works.

**Cost of Sales**

The \$6.6 million budget variance in cost of sales is primarily driven by costs incurred in completing the additional works as detailed in the revenue section above.

**Personnel costs**

The \$518k budget variance in personnel costs reflect a cost of living adjustment (270k) to salaries awarded to all employees effective 1 July 2018 (hence reflected for 12 months in the 2019 reported balances) along with increased health insurance cost (175k) resulting from a shift in insurers (CINICO) billing mechanism. Additional works on the Capital projects also impacted the increase in this area.

Budgeted Post-retirement healthcare costs and past service defined benefit pension costs were based on Actuarial estimates of cost to be charged to the statement of financial performance with adjustments based on receiving 2019 Actuarial reports hence the budget variances of \$179k and \$40k respectively.

Motor vehicles expenses increased over budget by \$235k due to additional fuel and maintenance expenses related to additional works performed over and above the budget (as highlighted in the revenue section above).