



**PARLIAMENT OF THE REPUBLIC OF
TRINIDAD AND TOBAGO**

TENTH PARLIAMENT

EIGHTH REPORT

**OF THE
JOINT SELECT COMMITTEE ON
MINISTRIES, STATUTORY AUTHORITIES
AND STATE ENTERPRISES
(GROUP 2)**

ON

WATER RESOURCES AGENCY (WRA)

**Ordered to be printed with the Minutes of Proceedings
and Notes of Evidence**

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TABLE OF CONTENTS

<u>ABBREVIATIONS</u>	5
<u>THE COMMITTEE</u>	7
<u>Establishment</u>	7
<u>Membership</u>	7
<u>Secretariat Support</u>	8
<u>Powers</u>	8
<u>INTRODUCTION</u>	9
<u>Background</u>	9
<u>Objectives of the inquiry</u>	9
<u>Conduct of the Inquiry</u>	9
<u>THE EVIDENCE</u>	11
<u>OBSERVATIONS/FINDINGS</u>	26
<u>RECOMMENDATIONS</u>	28
<u>APPENDIX I</u>	32
<u>APPENDIX II</u>	37
<u>APPENDIX III</u>	49

ABBREVIATIONS

ABBREVIATION	MEANING
BSc	Bachelor of Science Degree
CBO	Community-Based Organization
COSTATT	College of Science, Technology and Applied Arts of Trinidad and Tobago
EIA	Environmental Impact Assessment
EMA	Environmental Management Authority
IWRM	Integrated Water Resources Management
MET	Meteorological Services of Trinidad and Tobago
MOU	Memorandum of Understanding
MSc	Masters of Science Degree
NGO	Non-governmental Organisations
NIWRM	National Integrated Water Resources Management
NIWRMP	National Integrated Water Resources Management Policy
ODPM	Office of Disaster Preparedness and Management
THA	Tobago House of Assembly
TTMS	Trinidad and Tobago Meteorological Services
UNESCO-IHE	United Nations Educational, Scientific and Cultural Organization -Institute for Water Education
UWI	University of the West Indies
WASA	Water and Sewerage Authority
WRA	Water Resources Agency
WRMS	Water Resource Management Strategy
WRMU	Water Resource Management Unit

THE COMMITTEE

Establishment

Section 66 of the Constitution of Trinidad and Tobago declares, that not later than three months after the first meeting of the House of Representatives, the Parliament shall appoint Joint Select Committees to inquire into and report to both Houses in respect of Government Ministries, Municipal Corporations, Statutory Authorities, State Enterprises and Service Commissions, in relation to their administration, the manner of exercise of their powers, their methods of functioning and any criteria adopted by them in the exercise of their powers and functions.

Motions related to this purpose were passed in the House of Representatives and Senate on September 17, 2010 and October 12, 2010, respectively, and thereby established, inter alia, the *Joint Select Committee to inquire into and report to Parliament on Ministries with responsibility for the business set out in the Schedule as Group 2, and on the Statutory Authorities and State Enterprises falling under their purview with regard to their administration, the manner of exercise of their powers, their methods of functioning and any criteria adopted by them in the exercise of their powers and functions.*

The business as well as the entities which fall under the purview of your Committee is attached as *Appendix I*.

Membership

The current membership of your Committee is as follows:

- Dr. James Armstrong - Chairman
- Dr. Victor Wheeler - Vice Chairman
- Dr. Tim Gopeesingh, MP
- Mr. Clifton De Coteau, MP
- Dr. Bhoendradatt Tewarie
- Mr. Collin Partap, MP

- Mr. Kevin Ramnarine
- Dr. Lincoln Douglas, MP
- Mrs. Lyndira Oudit
- Ms. Alicia Hospedales, MP
- Mr. Fitzgerald Jeffrey, MP
- Dr. Lester Henry

Secretariat Support

- Mrs. Jacqueline Phillip-Stoute - Secretary
- Ms. Candice Skerrette - Assistant Secretary
- Ms. Candice Williams - Graduate Research Assistant

Powers

Standing Orders 71B of the Senate and 79B of the House of Representatives delineate the core powers of the Committee which include *inter alia*:

- to send for persons, papers and records;
- to adjourn from place to place;
- to appoint specialist advisers either to supply information which is not otherwise readily available or to elucidate matters of complexity within the Committee's order of reference; and
- to communicate with any other Committee of Parliament on matters of common interest.

INTRODUCTION

Background

In recognising the value and importance of management of the country's water resources, the Government of Trinidad and Tobago, in 1966, engaged the services of a Canadian team of experts to set up a body to monitor the water resources of the country. In that year, the Water Resources Survey was formed to meet the objectives emerging from the experts. The Survey was conducted by M.M. Dillon.

Evolving from an amalgamation of the Water Resources Survey and the Hydrology Section of the Drainage of the Ministry of Works, in 1970-1971, the Water Resources Agency (WRA) was created.

Objectives of the inquiry

- To understand the WRA'S role alongside the Water and Sewerage Authority (WASA) in managing the country's water resources
- To comprehend WRA's reporting relationship with the Ministry of Public Utilities
- To determine the relationship between WRA and its key stakeholders
- To determine the general cost and process of treating water in Trinidad and Tobago before it could be considered safe for human consumption
- To recognise some of WRA's accomplishments and activities
- To identify some of the challenges that exist in the industry
- To ascertain whether the WRA has an effective and efficient system in place to deal with supplying the nation with water

Conduct of the Inquiry

On Friday May 11, 2012 representatives of the WRA were invited to a public hearing. Prior to this, notice was given as to the general objectives of the inquiry and written submissions were requested from the Company. These responses provided the basis for the supplementary questions pursued at the hearing.

At a public hearing held on Friday May 11, 2012 the Water Resources Agency was represented by:

Mr. Victor Jones	Deputy Permanent Secretary
Mr. Terrance Jurawan	Permanent Secretary
Mr. Ganga Singh	Chief Executive Officer, WASA
Mr. Wayne Clement	Manager, Water Resources Management
Ms. Judy Francis	Manager, Licensing and Regulations Department (WRA)
Mr. David Samm	Senior Hydrologist (WRA)
Ms. Alisia Quaccoo	Manager, Monitoring and Evaluation Unit
Mr. Hollis Hinds	Director Economic, Research, Policy and Planning Division
Ms. Sharon Archie	Manager, Operations (WRA)

Several issues raised at the hearing warranted detailed responses which were subsequently submitted in written form to your Committee.

The draft of this Report was considered and approved with amendments at the meeting of the Committee held on Friday December 14, 2012.

The Minutes of the meetings of the Committee with regard to this inquiry are attached as ***Appendix II***.

The Notes of Evidence are attached as ***Appendix III***.

THE EVIDENCE

Introduction

The WRA was developed in an attempt to manage the country's water resources. A formal relationship of the WRA with the WASA was recommended by a Cabinet Minute (No. 729) dated, March 18, 1976. Since then, the WRA has been functioning as a division within the WASA as shown in the 1999 Cabinet-approved Structure on *page 11*.

Mission Statement

WRA's mission is:

“To effectively manage the country's water resources and promote conservation development and protection of these resources for sustainable use in a cost effective and integrated manner to support socio-economic growth.”

This is achieved using the National Integrated Water Resources Management Policy (NIWRMP) which was approved by the Government of Trinidad and Tobago on March 17, 2005.

In an attempt to achieve this mission, WRA also collaborates with a number of stakeholders:

- ✚ the Environmental Management Authority (EMA);
- ✚ the Ministry of Works and Transport Drainage Division;
- ✚ the Ministry of Food Production;
- ✚ the Land and Marine Resources;
- ✚ the Ministry of Public Utilities;
- ✚ the Office of Disaster Preparedness and Management (ODPM); and
- ✚ the Meteorological Services of Trinidad and Tobago (MET)

Water Resources Functions are to:

- ✚ manage the country's water resources for sustainability using the Integrated Water Resources Management (IWRM) approach; and
- ✚ promote development, conservation and protection of water resources.

The Water Resources Management Objectives are to:

- ✚ undertake water resources monitoring and assessment with respect to quantity and quality;
- ✚ undertake water allocation, regulation and licensing of water abstraction;
- ✚ undertake water resources planning, investigations and development;
- ✚ promote and coordinate the implementation of IWRM; and
- ✚ develop and maintain a National Water Resources Database and Information System.

National Integrated Water Resources Management Policy

It was realised that legislation governing the management of water resources in Trinidad and Tobago was fragmented and that a policy was necessary for the efficient management of these resources. A policy which emanated from recommendations proposed by the Integrated Water Resources Management Strategy was approved by Cabinet in 2005.

This policy is presently being reviewed.

The Integrated Water Resources Management Approach

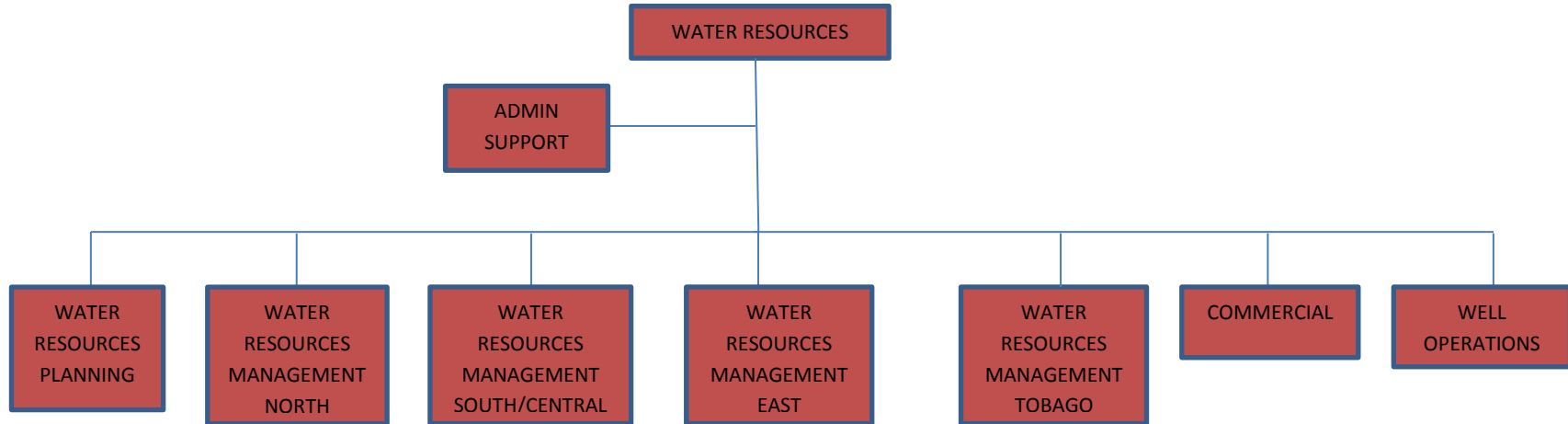
The Integrated Water Resources Management Approach is the international best practice used for managing the water sector and water resources. It brings together national stakeholders, aids with the identification of all challenges and risks and finds solutions using best practices.

The WRA is part of the Integrated Water Resources Management Stakeholders meetings which are held every quarter with all State agencies, government organisations, NGOs and CBOs. At these meetings discussions are held on plans, projects and initiatives that are presently being undertaken as well as those to be embarked on in the future.

Additionally, WRA is involved in community stakeholder meetings as a means of having discussions with local communities before plans can be made.

WRA's Organisational Structure

WRA comprises eight (8) departments as illustrated by the following organisational chart:



Human Resource Development Plan

Recognising the need to build capacity, the WRA has established a continuous in-house training programme to encourage training in specific areas from time to time. This programme is facilitated by senior members of staff.

Additionally, the Government of Trinidad and Tobago has established overseas and in-house training and exchange programmes to facilitate Water Resources Management capacity building:

- In 2001, the Associate Degree in Water Resources Management and Technology was started at College of Science, Technology and Applied Art of Trinidad and Tobago (COSTAATT)
- In 2006, the Bachelor of Science Degree (BSc) in Water Resources Management and Technology and Water and Wastewater Management and Technology at COSTAATT
- In 2010, the Masters of Science (MSc) in Water and Wastewater Management and Technology at the University of the West Indies (UWI)
- In 2010, UNESCO – IHE on the Capacity Building for Water Programs in Higher Education in the Caribbean facilitated:
 - 5-day course in Groundwater Modeling
 - 5-day course in Water Distribution Systems Management
 - 5-day course in Modeling Waste Water Treatment Plants
 - 5-day course in Advanced Groundwater Data Collection and Analysis
 - 5-day course in Advanced Surface Hydrological Data Collection And Analysis
 - 5-day course in Advanced Hydrological Data Collection And Analysis
 - 5-day course in Flood Control Measures

The following Table shows the number of persons trained in the Water Sector.

Programme	WASA/WRA	Other	Total
Associate Degree	28	40	68
BSc Degree	15	28	43
MSc Degree	4	1	5
Short Courses	17	44	61

From the above table, thirty four (34) WASA/WRA employees were certified in the Associate degree, Bachelor's degree and Masters Programmes. All 34 persons are presently employed at WASA.

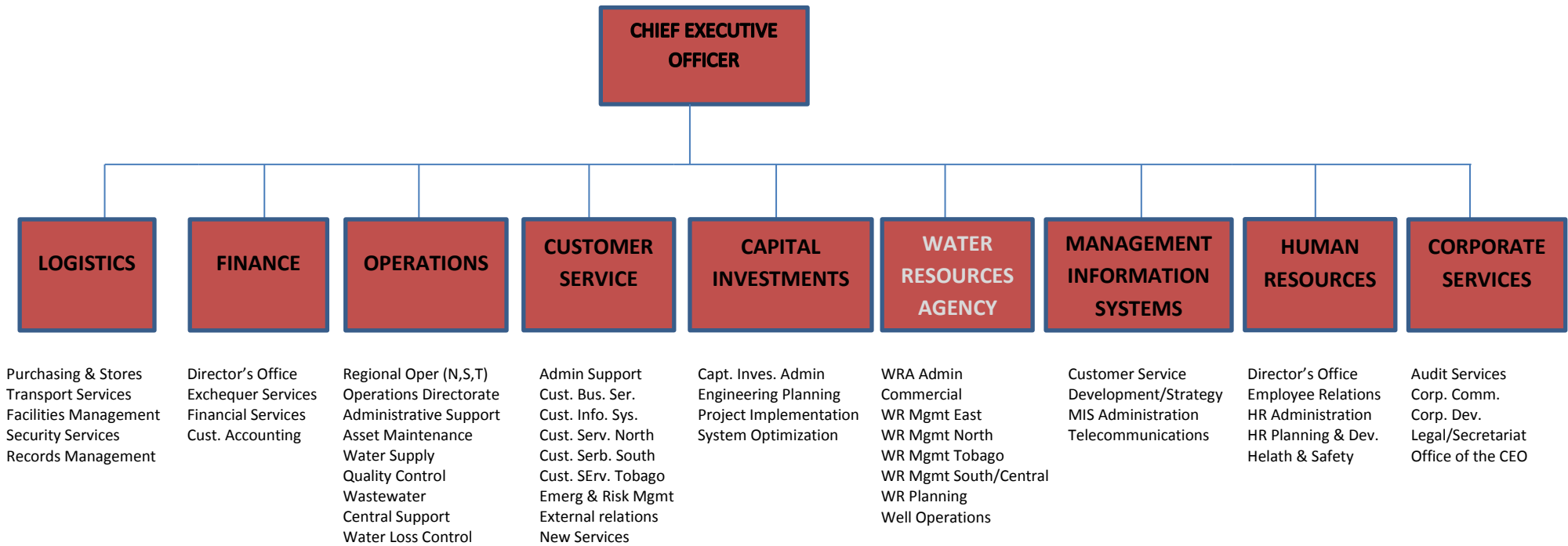
WASA did not incur any cost for training in the Associate Degree, BSc Degree and the MSc Degree programmes however, the cost incurred for the UNESCO/IHE short courses was US\$13,260.40 or TT\$ 84,866.94.

The following table shows the employee population of WRA (2001-present)

Years	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Population		59	60	58	91	100	92	107	125	103	99

There are areas however, which require specialist skills that are at present deficient. Many disciplines within WRA lack sufficient numbers and the compensatory package is uncompetitive. Some of these positions require targeted scholarships.

Relationship between WRA and WASA



The relationship between WASA, WRA and the Ministry of Works

The WRA is not responsible for paving roads after pipes are repaired that is the duty of WASA. The leaks associated with the existing 7,000 km pipeline infrastructure within Trinidad and Tobago have resulted in a pipeline replacement programme for 100 kilometres of pipeline a year.

WRA and WASA's relationship with the Ministry of Public Utilities

The WRA reports to the Chief Executive Officer of WASA through the Operations Division. WASA reports to the Ministry of Public Utilities.

A Memorandum of Understanding (MOU) was signed between the Trinidad and Tobago Meteorological Services Division of the Ministry of Public Utilities (TTMS) and WASA in 2009. Its overall purpose was to outline the basis for cooperation and collaboration between the TTMS and the WRA in the area of data sharing for the enhancement of expertise and services and bolstering of research, development and capacity building objectives mutually beneficial to both parties and in the best interest of Trinidad and Tobago.

Financial Operations

The WRA prepares estimates and receives its funding from allocations to WASA from the Ministry of Finance. This does not allow it to be autonomous.

The table below shows WRA's Revenue and Expenditure (2005-2011):

Year	Revenue				Expenditure		
	Salaries	Wages	Data & Information	Abstraction Charges	Recurrent	PSIP	CAPEX
2004/05	\$11,423,440.04	\$ 676,153.13	\$ 75,132.06	\$ 4,056,725.27	\$1,157,131.81		\$ 157,480.00
2005/06	\$10,027,802.21	\$ 720,871.10	\$ 68,741.57	\$21,396,557.33	\$1,390,787.71		\$ 62,009.00
2006/07	\$10,426,986.40	\$ 806,572.72	\$ 81,686.60	\$ 2,859,392.53	\$2,005,854.04		\$ 307,592.12
2007/08	\$14,260,961.85	\$1,711,277.94	\$126,257.95	\$2,250,834.11	\$1,399,573.18		\$3,696,369.96
2008/09	\$13,319,776.06	\$1,297,467.30	\$91,155.01	\$3,016,088.96	\$2,601,838.59	\$100,000.	\$4,075,451.44
2009/10	\$13,297,830.42	\$1,484,550.20	\$67,501.64	\$2,244,787.97	\$ 953,774.41	\$300,000.	\$1,196,928.40
2010/11	\$13,071,641.64	\$1,488,400.52	\$72,907.11	\$ 419,837.84	\$1,523,415.16	\$500,000.	\$ 824,123.16

Water Resource Management Strategy (WRMS)

The WRMS was commissioned by the Government of Trinidad and Tobago in August 1997. The Strategy identified the following as the five (5) critical issues for addressing sustainable use of the water resources of the country:

1. The implementation of the concept of IWRM, to attain sustainable development of the nation's water resources.
2. The need to establish an effective and financially autonomous institutional framework that facilitates an efficient water resources management.
3. Meeting the growing demand for water
4. The protection of environmental quality and ecological systems
5. The development of capacity and tools to support decision making

While it is not the responsibility of the WRA to address the above critical issues, the Water Resources Management Unit (WRMU), was mandated by Cabinet in 2000 to implement the Action Plan to achieve the objectives. The following table shows actions undertaken by WRMU:

CRITICAL ISSUES	ACTIONS UNDERTAKEN
<p>1. The implementation of the concept of IWRM, to attain sustainable development of the nation's water resources</p>	<ul style="list-style-type: none"> • Development of a National Integrated Management Water Resources Policy (NIWRMP 2005) • Commencement of the review of the NIWRMP (2005) • Preparation of a report on Integrated Management of Watersheds and the Coastal Zone • Establishment of a framework for stakeholder interaction (Formation of IWRM Committee 2009) • Formalization of cooperation with the Meteorological Services of Trinidad and Tobago and the University of the West Indies through Memoranda of Understanding • Enhancement of IWRM in Trinidad and Tobago through Regional Project on Cooperative Strengthening of National Institutions

<p>2. The need to establish an effective and financially autonomous institutional framework that facilitates an efficient water resources management</p>	<ul style="list-style-type: none"> • Collaboration with Attorney General Office for the drafting of legislation for a Water Resources Management Bill • As part of a Government Appointed Steering Committee, preparation of a report on the pertinent issues concerning the removal of the WRA out of WASA • Preparation of reports by Consultants on the establishment of an autonomous body responsible for the management of water resources functions
<p>3. Meeting the growing demand for water</p>	<ul style="list-style-type: none"> • Preparation of an assessment of the potential water availability within the WRMU Hydrometric Areas • Conduct of a training workshop towards the establishment of a groundwater information system
<p>4. The protection of environmental quality and ecological systems</p>	<ul style="list-style-type: none"> • Development of a framework for reporting on the status of the Water Resources of the country • Establishment of a framework for a National Water Quality Database
<p>5. The development of capacity and tools to support decision making</p>	<ul style="list-style-type: none"> • The establishment of overseas and in-house training and exchange programmes to facilitate Water Resources Management capacity building

Water Practice Awareness

The WRA has a division within the Authority called the Public Education Centre. This Centre invites schools to programmes whereby they are taught about water use efficiency, demand management and watershed assessment.

In 2011, the WRA through its Public Education Centre held campaigns in Toco/Matelot and several other areas in order to inform and educate citizens of this country.

In an effort to bring all stakeholders, NGOS, CBOs, communities and individuals awareness of the watersheds, the issues affecting and the impact on the water resources, the WRA is setting up a new initiative called “Adopt a River”.

Landslides

WASA officials indicated that there is a perceived correlation in the public between land slippage and pipe breakage. In order to dispel this perception, WASA monitors areas prior to landslips and visits areas affected by landslides.

However, the failure to deal with run-off water by homeowners, as well as other factors can also cause pipe breakage.

WASA is looking at technical solutions involved with discontinued use of PVC and ductile iron pipes in some areas and usage of high density polyethylene. This will be done in collaboration with the Ministry of Works.

WASA Bill Payments

According to this country's existing law, once an individual lives within a quarter mile radius of a standpipe that person must make WASA bill payments.

The commercial department deals with persons who receive bills but do not have water services.

WASA went on a programme to collect arrears from customers. The company collected \$83 million of the \$563 million of total accounts receivables within two (2) months.

Flood mitigation

One of the aspects of water resource management is flood management. The WRA collects information, works in collaboration with the Drainage Division, the ODPM and other agencies with respect to flood mitigation and flood maps. Data collected is analysed in order to assess areas that are prone to flooding, factors that exacerbate flooding and solutions are proffered.

WRA focuses on river flooding caused by natural occurrences and the carry capacity of the rivers. If river flooding is as a result of upper watershed activities, WRA works with the particular State agency to seek redress.

Over-land flooding is handled by the Drainage Division.

Agricultural Initiatives

Water becomes critical for agriculture particularly during the dry season. In order to deal with this problem, the WRA has collaborated with several State Agencies in farming communities on a ‘the dry season planning’ initiative. This initiative is reviewed annually by the Operational Division within WASA, the WRA and the MET.

Additionally, at present, there is an initiative with the Ministry of Food Production to determine the feasibility of whether surface or ground-water source is necessary for the geology of different areas.

Illegal Water Extractors

There are currently ninety-nine (99) registered extractors.

The WRA has actively investigated illegal extractors’ reports and has had success in getting persons into compliance.

In 2010, there were at least forty four (44) applications during the dry season.

Quality and Supply of water in Trinidad and Tobago

When compared to international benchmarks, Trinidad and Tobago is not considered a water-scarce country. However, the challenge is where the demand centres are when compared to where the water is available.

In Trinidad, there are fifty five (55) watersheds and in Tobago, fifteen (15). Analysis conducted over a period of time has indicated that the quality of water within the watersheds has deteriorated. In an attempt to reverse this alarming situation, the ‘Adopt a river’ initiative is assisting in identifying the issues faced. Some of these threats include:

- Quarrying
- Agricultural pesticides
- Use of toxic chemicals
- Human activities e.g. Using the river as a garbage disposal
- Unplanned housing and industries outside the ambit of water pollution rules

A significant part of the population receives a scheduled supply of water. This is impacted by electricity outages, problems at the water source and breakdown of the water treatment and desalination plants.

Water Consumption Patterns

The study on the water consumption pattern of Trinidad and Tobago was based on sectoral demands and not geographic location. The table below shows the water demand analysis for the period 1997-2025 for Trinidad and Tobago.

CATEGORY	Millions of Cubic Meters/year (MCM/Yr)						
	1997	2000	2005	2010	2015	2020	2025
Domestic	118	120	142	160	170	184	203
Industrial Major	36.5	51.2	65.6	78.7	91.8	101.7	111.6
Industrial Minor	9.2	9.7	10.6	11.5	12.6	13.7	15
Irrigated Agriculture			127		242		392
Unaccounted for water	123	90.7	54.6	62.5	68.7	75.3	82.4

Enforcement Authority

The WRA operates primarily under the WASA Act in terms of enforcement.

The Ministry of Energy and Energy Affairs as well as the Drainage division has the responsibility for quarrying and the EMA has the authority to manage and enforce quarrying.

The Drainage Division and Regional Corporations have some responsibility and authority when river courses, drainage and canals are blocked.

Spatial Planning

Development projects received from the Town and Country are sent to the EMA to determine whether or not it requires an Environmental Impact Assessment (EIA). When an EIA is required, the WRA is expected to review the contents of the EIA studies, the impact of the proposed development on the water resources and measures to provide adequate protection to water resources.

WASA admitted that there is a lack of collaboration between water stakeholders and industrialization. The WRA admitted that there was a need for forward planning in terms of the location of industrial activities and the location of housing.

There is a time lag, as infrastructure should be ahead of the planned process of development. This is a critical role that would be addressed by the Water Resources Management Authority.

Tobago Stream Flow Network

The rainfall gauges and stream flow gauges within the Tobago network have been in a state of disrepair. Some of the technology utilized was old and there is currently a new technological system being implemented in Tobago.

The Tobago watersheds have been deteriorating and meetings are scheduled with the Tobago House of Assembly (THA) to identify challenges and how they can be addressed.

Further, the Committee was advised that housing developers are responsible for water sewerage; however WASA can make its expertise available if requested.

Accomplishments and Administrative Activities

The accomplishments and activities of the WRA during the period 2005-2011 are:

Annual/On-going

- Hydrological studies for Water Development Projects (17 projects)
- Groundwater well siting to support development programmes (61 Assessments)
- Technical data support for National development projects
- Dry Season Water Management
- Preparation of Technical Reports for Water Availability

- Publication of Annual Data Reports (2009-2011)
- Establishment of partnerships with other regulatory state organisations
- Public awareness of the regulatory and licensing processes for water abstraction
- Reinstallation of Tobago Stream flow Network (2010)
- Upgrading of the Hydrological network from mechanical to automated gauges
- Intensive Dry Season monitoring and Flood monitoring Programme
- Execution of activities under the Water Resources Management Unit (6)

Policy/Legislative

- Recommendations for inclusion in the proposed Water Resources Management Legislation
- Review of the National Integrated Water Resources Management Policy
- Establishment of a website for dissemination of the National Integrated Water Resources Management Policy (2006), reviewed in (2010)
- Developed and implemented a guiding Framework for the Water Allocation Process
- Development of a Wellfield Management Policy (2011)
- Development of a Water Allocation Policy (2011)
- Standard Operating Procedures (2011)

Completed

- Published Annual Data Reports (2005-2008)
- Published the State of the Water Resources Report (2005)
- Developed of an Early Warning Flood Monitoring System (2005)
- Designed and implemented a Real-Time Water Quality Monitoring System for the Caroni River Basin (2011)
- Developed and implemented a Guiding Framework for the Water Allocation Process, showing the necessary system, process and procedures (2010)
- Regained possession of the Trinidad Pot Gauge network (2010)
- Execution/implementation of strategies under the Water Resources Management Project
- Design and Implementation of an Associate Degree, BSc in Water Resources Management and Technology and a BSc in Water Wastewater Management at COSTAATT
- MSc Degree in Water and Wastewater Management at UWI
- Established MOU with COSTAATT, UWI and the MET

OBSERVATIONS/FINDINGS

Consequent on the written submissions and the oral evidence received from the WRA, your Committee has made particular note of the following aspects of its operations:

1. LEGAL/REGULATORY FRAMEWORK

WRA is presently a division of WASA. However, WRA's officials as well as Members of the Committee believed that it was in the best interest of all to link WRA with all environmental agencies. Subsequent to this inquiry, Ministries and Entities by the Government of Trinidad and Tobago were reshuffled. This saw the formation of the Ministry of the Environment and Water Resources under which oversight for all Environmental and Water Resources agencies including the Water and Sewerage Authority (WASA) now fall.

Additionally, the Integrated Water Resource Management Strategy Report of Delft Hydraulics and Lee Young and Partners of 2000 conveyed that WRA should not be located as a department of WASA. According to the Dillon Report of 1966, it is believed to be a conflict of interest to have a regulator under the operational provider. There seems to be a serious problem where the agency (WRA) that is supposed to have an overarching responsibility is actually subsumed as a department of the agency for which it is responsible (WASA).

Bill Payments

The law states that citizens who live within quarter of a mile of a public standpipe must make WASA payments. However, there are various reasons why this should not be so:

- i. Living within a specific area does not guarantee that people actually access the water from the public standpipe. It is therefore unfair for citizens who do not access the water to make WASA payments.
- ii. A "public standpipe" suggests that this standpipe is open to all individuals, even those not in the quarter mile radius. Why then should others be allowed to use it and not pay?
- iii. The Public Standpipe Regulation prohibits certain activities by standpipes and is therefore a hindrance in the use of water from standpipes.

2. ENFORCEMENT AUTHORITY

WRA has no enforcement authority over blocking of rivers or quarrying. This is the responsibility of the Ministry of Energy and Energy Affairs, the EMA, Regional Corporations and the Drainage Division.

3. REPAIRS TO ROADS

It has been noted that throughout Trinidad and Tobago, a major recurring issue facing most citizens is the length of time taken to repair roads after works have been done to pipelines.

4. HUMAN RESOURCES

While the government has intervened to assist with in-house training for WRA, there seems to still be a shortage of specialist skills such as geologist, hydro geologist and hydro physicist.

Students are unaware of these tertiary level possibilities and usually go into areas of studies that are saturated.

RECOMMENDATIONS

Consequent on the evidence received during this inquiry, your Committee wishes to make the ensuing recommendations with regard to the operations of the WRA:

1. LEGAL/REGULATORY FRAMEWORK

The Committee agrees with the recommendation of Delft Hydraulics and Lee Young and Partners of the World Bank who suggested that WRA should evolve into a Water Resource Management Authority that would regulate and oversee all the water resources of Trinidad and Tobago.

Bill Payments

There needs to be some revision of the existing Water and Sewerage Act to better regulate the use of standpipes and WASA payments.

2. ENFORCEMENT AUTHORITY

A National Integrated Water Resources Management Policy should be implemented by the beginning of 2013 to effect the legislation for a Water Resource Management Authority that would have monitoring and enforcement powers.

3. REPAIRS TO ROADS

More attention should be placed on strengthening the relationship between WASA and the Ministry of Works and Infrastructure to repair roads after work has been done on pipelines. As an aid, it is recommended that programmes similar to the PURE programme and the Pipeline Replacement programme be implemented to deal with this problem.

4. HUMAN RESOURCES

It is recommended that the Ministry of Public Administration focus more scholarships in the Water Resources field to achieve better regulation of the country's water sector.

Furthermore, there is need for better career guidance in secondary schools to educate children about their career options and the existence of career opportunities in the water resource field such as geologist, hydro geologist and hydro physicist.

Moreover, it is WRA's duty to provide better compensation packages to attract and retain staff in this field.

Your Committee respectfully submits this Report for the consideration of the Parliament.

Sgd.

Dr. James Armstrong
Chairman

Sgd.

Dr. Victor Wheeler
Vice Chairman

Sgd.

Dr. Bhoendradatt Tewarie
Member

Sgd.

Dr. Tim Gopeesingh, MP
Member

Sgd.

Mr. Clifton De Coteau, MP
Member

Sgd.

Mr. Collin Partap, MP
Member

Sgd.

Mr. Kevin Ramnarine
Member

Sgd.

Dr. Lincoln Douglas, MP
Member

Sgd.

Mrs. Lyndira Oudit
Member

Sgd.

Ms. Alicia Hospedales, MP
Member

Sgd.

Mr. Fitzgerald Jeffrey, MP
Member

Sgd.

Dr. Lester Henry
Member

December 14, 2012

APPENDIX I

BUSINESS ENTITIES

List of Ministries, Statutory Authorities and State Enterprises that fall under the purview of this Committee:

1. Local Government

- Trinidad and Tobago Solid Waste Management Company Limited
- Community Improvement Services Limited
- East Port of Spain Development Company Limited
- Palo Seco Agricultural Enterprises Limited
- Rural Development Company of Trinidad and Tobago

2. National Security

- Defence Force Commissions Board
- Defence Council
- National Drug Council
- Strategic Services Agency
- Youth Training Centre Board of Management

3. Office of the Prime Minister

- Sport and Culture Board of Management

4. People and Social Development

- Social Welfare District Boards
- Trinidad and Tobago Association in Aid of the Deaf
- Trinidad and Tobago Blind Welfare Association

5. Planning and the Economy

- Advisory Town Planning Panel
- Caribbean Industrial Research Institute (CARIRI)
- Chaguaramas Development Authority
- Council for Innovation and Competitiveness
- Economic Development Board
- National Population Council

6. Public Administration

- Telecommunications Authority of Trinidad and Tobago (TATT)
- Government Human Resources Services Limited (GHRS)

7. Public Utilities

- Regulated Industries Commission
- Water and Sewerage Authority (WASA)
 - Water Resource Agency
- The Trinidad and Tobago Electricity Commission (TTEC)
- The Trinidad and Tobago Postal Corporation (TTPOST)
- Telecommunications Services of Trinidad and Tobago Limited (TSTT)

8. Science, Technology and Tertiary Education

- Accreditation Council of Trinidad and Tobago (ACTT)
- Board of Industrial Training
- College of Science, Technology and Applied Arts (COSTAATT)
- Eastern Caribbean Institute of Agriculture and Forestry (ECIAF)
- John S. Donaldson Technical Institute
- National Institute of Higher Education (Research, Science and Technology)
- National Training Agency
- San Fernando Technical Institute
- Teachers Training Colleges
- Trinidad and Tobago Hospitality and Tourism Institute
- University of the West Indies
 - Open Campus
- University of Trinidad and Tobago:
- Metal Industries Company Limited (MIC)
 - Government Vocational Centre
- National Information, Communication, Technology Limited (iGovTT)
- Youth Training and Employment Partnership Programme Limited (YTEPP)

9. Sport

- National Stadia Board of Management
- Regional Complexes
- Trinidad and Tobago Boxing Board of Control
- Sport Company of Trinidad and Tobago Limited

10. Tobago Development

- Tobago Regional Health Authority

11. Tourism

- Zoological Society of Trinidad and Tobago
- Tourism Development Company Limited

12. Trade and Industry

- Betting Levy Board
- Trinidad and Tobago Bureau of Standards
- Trinidad and Tobago Racing Authority
- Weights and Measures
- Evolving TecKnologies and Enterprise Development Company Limited (e-TecK)
- Export-Import Bank of Trinidad and Tobago Limited
- Trinidad and Tobago Free Zones Company Limited
- Business Development Company Limited
- Point Lisas Industrial Estate
- Trinidad and Tobago Entertainment Company Limited (TTent)
- Trinidad and Tobago Film Company
- Caribbean Leasing Company Limited (CLCL)
- National Flour Mills
- Premier Quality Services Limited (PQSL) subsidiary of TTBS

13. Works and Infrastructure

- National Infrastructure Development Company Limited (NIDCO)
- National Maintenance Training and Security Company Limited (MTS)

14. Transport

- Airports Authority of Trinidad and Tobago
- Air Transport Licensing Authority
- Pilotage Authority
- Port Authority of Trinidad and Tobago
- Public Transport Services Corporation
- Transport Board
- Trinidad and Tobago Civil Aviation Authority
- Caribbean Airlines Limited
- The Vehicle Maintenance Corporation of Trinidad and Tobago Limited
- National Helicopter Company Limited
- Point Lisas Port Development Corporation Limited (PLIPDECO)
- LIAT (1974) Limited

15. Gender, Youth and Child Development

- Adoption Board
- Children's Authority
- Interdisciplinary Child Development Centre
- Princess Elizabeth Home for Handicapped Children
- Trinidad and Tobago Association for Retarded Children

APPENDIX II

MINUTES OF PROCEEDINGS

**MINUTES OF FIFTEENTH MEETING OF THE JOINT SELECT COMMITTEE OF PARLIAMENT
APPOINTED TO INQUIRE INTO AND REPORT ON GOVERNMENT MINISTRIES (GROUP 2),
STATUTORY AUTHORITIES AND STATE ENTERPRISES FALLING UNDER THOSE MINISTRIES,
HELD IN OFFICE OF THE PARLIAMENT, TOWER D, PORT OF SPAIN INTERNATIONAL WATERFRONT
CENTRE, #1A WRIGHTSON ROAD, PORT OF SPAIN
ON FRIDAY, MAY 11, 2012 AT 9:30 A.M.**

PRESENT

Dr. James Armstrong	Chairman
Dr. Victor Wheeler	Vice-Chairman
Dr. Lincoln Douglas, MP	Member
Mr. Fitzgerald Jeffrey, MP	Member
Mr. Clifton De Coteau, MP	Member
Mrs. Lily Broomes	Secretary
Ms. Candice Skerrette	Assistant Secretary
Ms. Candice Williams	Graduate Research Assistant

ABSENT

Mrs. Lyndira Oudit	Member (excused)
Dr. Bhoendradatt Tewarie	Member (excused)
Dr. Lester Henry	Member (excused)
Dr. Tim Gopeesingh, MP	Member (excused)
Ms. Alicia Hospedales, MP	Member (excused)
Mr. Collin Partap, MP	Member
Mr. Kevin Ramnarine	Member

REPRESENTATIVES OF WATER RESOURCES AGENCY

Mr. Terrance Jurawan	Permanent Secretary
Mr. Victor Jones	Deputy Permanent Secretary
Mr. Ganga Singh	Chief Executive Officer, WASA
Mr. Wayne Clement	Manager, Water Resources Management
Ms. Judy Francis	Manager, Licensing and Regulations Dept. (WRA)
Mr. David Samm	Senior Hydrologist, (WRA)
Ms. Alisia Quaccoo	Manager, Monitoring and Evaluation Unit
Mrs. Mauricia Pegus	Sen. Research Analyst

INTRODUCTION

1.1 The Chairman called the meeting to order at 9:51 a.m.

1.2 Members were informed that Mrs. Lyndira Oudit, Ms. Alicia Hospedales, Dr. Lester Henry, Dr. Bhoendradatt Tewarie and Dr. Tim Gopeesingh had asked to be excused from the day's proceedings.

CONFIRMATION OF MINUTES

2.1 The following corrections were made to the Minutes:

- Page 3: Item 7.3 (a) Bullet 6
Insert “,” after “review”
- Page 4: Item 7.3 (c) Bullet 3
Insert “,” after “Tobago”
- Page 5: Item 7.3 (f) Bullet 3
Delete “on course” and insert “being implemented according to schedule”
- Page 6: Item 7.3 (i) Bullet 4
Insert “,” after “this Ministry”
- Page 7: Item 7.3 (l) Bullet 1
Delete “increased” and insert “increase”
- Page 8: Item 7.3 (p) Bullet 4
Delete “in progress” and insert “being addressed”
- Page 9: Item 7.3 (q) Bullet 4
Insert “,” after “NADAPP”
Insert “,” after “Health”
- Page 9: Item 7.3 (r) Bullet 2
Delete “type” and insert “types”
Delete “courts” and insert “court”

2.2 The motion for the confirmation of the Minutes, as amended, was moved by Mr. Fitzgerald Jeffrey and seconded by Dr. Victor Wheeler.

2.3 The Minutes, as amended, were thereby confirmed.

MATTERS ARISING FROM THE MINUTES

3.1 Members were advised of the following:

- Submissions were received from Trinidad and Tobago Solid Waste Management Company Limited (SWMCOL) and circulated to the Committee in soft copy (cd format) via letter dated April 29, 2012.
- Additional information requested from National Drug Council (NDC) on April 23 2012 was given a deadline of May 10, 2012. NDC indicated that the submission will be sent by May 11, 2012.

OTHER BUSINESS

4.1 Ministerial Response to the First Report of the Committee on Palo Seco Agricultural Enterprises Limited (PSAEL) was laid in the House of Representatives on April 27, 2012 and in the Senate on May 1, 2012. This Response was circulated to Members via letter dated April 29, 2012.

4.2 Copies of the Draft Fifth and Sixth Reports on the Tobago Regional Health Authority and East Port of Spain Development Company Limited were circulated to Members via letter dated April 29, 2012. The Committee agreed to forward its written comments to the Secretary by May 31, 2012.

4.3 The Committee agreed that its next meeting would be held on June 8, 2012 at 10:00 a.m. This meeting is to be in camera to finalize the draft Fifth and Sixth Reports.

PRE-HEARING DISCUSSIONS

5.1 The Committee agreed that clarity should be sought from WRA officials on the relationship and structure between the Water Resources Agency and the Water and Sewerage Authority of Trinidad and Tobago (WASA).

SUSPENSION

6.1 The meeting was suspended at 10:12 a.m.

(Members proceeded to the J. Hamilton Maurice Room, Mezzanine Floor)

HEARING WITH THE OFFICIALS OF WATER RESOURCES AGENCY (WRA)

7.1 The meeting resumed in the J. Hamilton Maurice Room at 10:16 a.m.

7.2 The Chairman welcomed officials of WRA. Introductions were exchanged.

7.3 Detailed below are the matters raised and the responses which emanated from the discussion with the representatives of WRA:

Relationship between WRA and WASA

- WRA is currently a division of WASA, although it is the regulating agency. WRA officials also conveyed that it would be in the best interest to locate WRA together with the environmental agencies.
- The Dillon Report of 1966 indicated that it would be a conflict of interest to have a regulator under the operational provider.
- Further, the Integrated Water Resource Management Strategy Report of Delft Hydraulics and Lee Young and Partners of 2000 also conveyed that WRA should not be located as a department of WASA. This report also recommended that WRA be evolved into a Water Resource Management Authority that would regulate all water resources within Trinidad and Tobago.

(a) WRA Historical Background

- In 1997, a Water Resources Management Study was commissioned by the Government of Trinidad and Tobago. One (1) of the recommendations of this study was the transfer of WRA responsibilities from the WASA location to the Ministry of the Environment. This was done by Cabinet Note No. 57 of January 12, 2000.
- In 2000, a Steering Committee was established to identify and make recommendations for the transfer and establishment of the Water Resources Management Authority. This was done by Cabinet Note No. 57 of January 12, 2000.

- In 2000, Cabinet Note No. 89 of June 7, 2000 included an implementation of the action plan to achieve the objectives of the Water Resource Management Strategy.
- In 2001, Cabinet Note No. 90 of July 12, 2000 established the Water Resource Management Unit (WRMU) under the Ministry of Works, Infrastructure and Local Government to implement the action plan.
- In 2002, the WRMU was transferred to the Ministry of Public Utilities and the Environment. Further, Mr. Seth Tyler was procured as the consultant for the development of the National Integrated Water Resources Management Policy and Mr. Roland Baptiste was procured as a consultant to formulate a framework for integrated water resources management.
- In 2005, the national Integrated Water Resources Management approach was adopted.

(b) **Moruga/Tableland Water Problems**

- The Desalination Plant in La Lune never functioned because of sand intrusion. The proper seasonal study was not conducted and an intake pipe should have been located.
- Within the next eighteen (18) months there will be water supply improvements within the Marac area.

(c) **Integrated Water Resources Management (IWRM) Approach**

- The IWRM Approach is the international best practice used for managing water sector and water resources. It embodies bringing all stakeholders together nationally, identifying all challenges and risks and finding solutions using best practices.

(d) **Challenges and Successes**

- The WRA has an input in most projects that require a CEC; most WASA projects are referred for a WRA input since this ensures the project has sustainability. Water is provided for the project and it does not impact negatively on the water resources of the country.
- The WRA also sits on many planning committees and hosts quarterly integrated water resources management stakeholder meetings. This allows for prioritization and scheduling of projects.
- The WRA has been a part of the WASA team for community stakeholder meetings.

(e) **Coordination between WASA and Ministry of Works and Infrastructure**

- The leaks associated with the existing 7,000 km pipeline infrastructure within Trinidad and Tobago have resulted in a coherent pipeline replacement programme. This utilization of heavy equipment in paving works exacerbated the nature of the pipeline.
- Road restoration of highways was executed by contractors recommended by the PURE Programme.
- There is currently a pipeline replacement programme to replace 100km of pipeline per year.

(f) **National Integrated Water Resources Management Policy**

- This policy was approved by Cabinet in 2005 and emanated from the Integrated Water Resources Management Strategy recommendations.
- It was realized that legislation governing water resources management was fragmented and a policy was necessary to efficiently manage water resources.
- This policy is currently being reviewed and comments were requested from different stakeholders.

(g) **WRA Objectives**

- The Committee was informed that the water management objectives are being achieved.
- WRA is involved in many projects and collected information is analyzed to inform changes in climate and ground and water resources. Given the volume of data and analysis as well as the meetings for different projects, WRA is able to provide information and sustain many projects.

(h) **Water Practice Awareness**

- The Public Education Center (PEC) invites schools for programmes on water use efficiency, demand management and watershed assessment.
- In 2011, a campaign was held in Toco/Matelot and in 2010 in Cumaca, to inform and educate the community.
- The “Adopt a River” initiative is a collaborative effort with stakeholders such as NGOs, CBOs, communities and the business sector. The objective is to bring attention to watersheds and management of thereof.

(i) **Landslips**

- WASA officials indicated that there is a perceived correlation in the public between land slippage and pipe breakage. In order to dispel this perception, WASA visits areas affected by landslips and monitors landslips prior to pipe breakage.
- However, the failure to deal with run-off water by homeowners as well as other factors can also cause pipe breakage.
- WASA is looking at technical solutions involved with discontinued use of PVC and ductile iron pipes in these areas and encourages usage of high density polyethylene. This will be done in collaboration with the Ministry of Works and Infrastructure.

(j) **WASA Bill Payments**

- The existing law is once an individual lives within a half mile radius of a standpipe that person must make WASA bill payments. In cases where a person is receiving a bill without water services, the commercial department checks to see whether the person is receiving water and what is the scheduled water supply received per week.
- WASA was able to collect \$83 million in accounts receivables within two (2) months out of \$563 million of total accounts receivables.

(k) **Flood Mitigation Position**

- WRA collects information, works together with the drainage division, the ODPM and other agencies in the areas of flood mitigation and flood maps. Collected data is analysed from

flood events to assess areas that are prone to flooding, factors that exacerbate the flooding and solutions are then targeted in the particular watershed. In many cases, flooding is caused by either reforestation or poor drainage.

- There is more focus on river flooding in the areas of sedimentation and changes in the bed level of the river. If the river flooding is as a result of upper watershed activities, the WRA works with the particular state agency to seek redress.

(l) **Agricultural Initiatives**

- The WRA deals with water allocation for agriculture, particularly in the dry season. The “dry season planning” initiative is done in collaboration with different state agencies and farming communities. This ongoing plan is reviewed annually by WASA’s operational division, the meteorological services of Trinidad and Tobago and the WRA.
- The WRA is collaborating with the Ministry of Food Production to determine the feasibility of whether surface or ground-water source is necessary for the geology of different areas.

(m) **Regulation of Illegal Water Extractors**

- There are currently ninety-nine (99) registered extractors. The WRA has actively investigated illegal extractors reports and has had success in getting persons into compliance. In 2010, there were at least forty four (44) applications during the dry season.

(n) **Water Quality**

- Although, Trinidad and Tobago is not considered a water-scarce country by international standards, there continues to be water demand from different sectors and water availability challenges.
- There are fifty-five (55) watersheds in Trinidad and fifteen (15) in Tobago being monitored by the WRA which indicate that there has been a decline in water quality. In particular, the western catchment watersheds have deteriorated.
- There are many threats to water quality such as quarrying, agricultural pesticides, human activities, unplanned housing and industries that operate outside the ambit of water pollution rules.

(o) **Guanapo Landfill**

- This landfill is not directly impacting groundwater, however the Guanapo leachate and overland flows into a tributary and impacts the ability to treat water in the Caroni Treatment Plant.

(p) **Enforcement Authority**

- The WRA operates primarily under the WASA Act in terms of enforcement.
- The Ministry of Energy and Energy Affairs as well as the Drainage division has the responsibility for quarrying and the EMA has the authority to manage and enforce quarrying.
- The drainage division and regional corporations has some responsibility and authority when river courses, drainage and canals are blocked. Officials recommended that the National Integrated Water Resources Management Policy should be implemented to effect legislation for a Water Resource Management Authority that would have the monitoring and enforcement powers.

(q) **Human Resources**

- Within the WRA, there are areas which require specialist skills that are at present deficient. Many disciplines within WRA lack sufficient numbers and the compensatory package is uncompetitive when compared to the oil and gas industry. Some of these positions require targeted scholarships.
- The UNESCO-IHE in-house short courses on the Capacity Building for Water Programs in Higher Education in the Caribbean were funded by UNESCO.
- The skills gaps are being addressed by the associate degree in COSTATT and the master's program at the UWI. These programs are funded by the Government of Trinidad and Tobago.
- The WASA Cabinet structure of 1999 provides for 2033 persons to be employed and following the 2001 VSEP process it was 2033 persons. Staffing has increased to 4300 monthly and daily paid employees and 300 NSDP workers. There is a need for restructuring to increase capacity in operations and technical competence.

(r) **Water Supply**

- The Committee was informed that a significant part of the population received a scheduled water supply. This schedule may be impacted by electricity outages, problems at the water source, breakdown of the water treatment and desalination plant. Investigations conducted on the possible collusion between turn cocks and truck contractor has refuted this allegation.

(s) **La Brea Area Water Demand Analysis**

- The south-western part of Trinidad is a water-stressed area because the sources of water are not available in large amounts in this area and thus, the desalination plant was the thinking. This plant was delayed because of an untapped abandoned oil well and permission was required to place an intake pipe in the seabed. The regulatory requirements have been completed and the intake should be in place within the next four (4) months.
- Industrialization is a high user of water and for instance, it takes three (3) tones of water from WASA to produce a ton of ammonia or methanol. Officials conveyed that water must be treated as a precondition to industrialization and should be priced accordingly.

(t) **Spatial Planning**

- Development projects received from the Town and Country are sent to the EMA to determine whether or not it requires an Environmental Impact Assessment (EIA). When an EIA is required, the WRA is expected to review the contents of the EIA studies, the impact of the proposed development on the water resources and measures to provide adequate protection to water resources.
- WASA admitted that there is a lack of collaboration between water stakeholders and industrialization. For instance, there has been significant development beyond three hundred (300) feet elevation where the WASA tank is located. The WRA admitted that there was a need for forward planning in terms of the location of industrial activities and the location of housing.
- There is a time lag, as infrastructure should be ahead of the planned process of development. This is a critical role that would be addressed by the Water Resources Management Authority.

(u) **Tobago Streamflow Network**

- The rainfall gauges and stream flow gauges within the Tobago network have been in a state of disrepair. Some of the technology utilized was old and there is currently a new technological system being implemented in Tobago.
- The Tobago watersheds have been deteriorating, and meetings are scheduled with the Tobago House of Assembly (THA) to identify challenges and how they can be addressed.
- Further, the Committee was advised that housing developers are responsible for water sewerage; however WASA can make its expertise available if requested.

(v) **Cultural view of Water**

- There is a need for increased emphasis on water and water pricing. Since 1993 there has been no water increase and since 2008 there has been an application for water rate increase before the RIC.

(w) **Coastal Water**

- A coastal zone assessment was conducted in the past and needs to be updated. However, WRA's expertise in this area is limited.

REQUESTED INFORMATION

8.1 Officials of the Water Resources Agency gave an undertaking to furnish the Committee with the following:

- (i) The Human Resource Development Plan within the Status Report (*dated April 2012, page 9 refers*) stated 64 out of 177 persons obtained the Associate Degree/B.Sc./M.Sc. or Short Course certification since 2001:
 - What is the employee population since 2001?
 - Are these sixty four (64) certified persons still employed at WASA?
 - What was the cost of identified training for each grouping?
 - What were the "five (5) critical issues" identified by the Water Resource Management Strategy of 1997 and what has the WRA done to deal with the remaining three (3) issues?
- (ii) The geographical assessment of the water consumption patterns of Trinidad and Tobago
- (iii) Information relating to the registration of a Memorandum of Understanding (MOU) to commit two (2) parties to a sustainable project

ADJOURNMENT

9.1 There being no other business, the Chairman thanked the Officials from the Water Resources Agency and Members of the Committee for their attendance and adjourned the meeting to ***Friday June 8, 2012 at 10:00 a.m.***

9.2 The meeting was adjourned at 12:07 p.m.

I certify that these Minutes are true and correct.

CHAIRMAN

SECRETARY

May 11, 2012

APPENDIX III

NOTES OF EVIDENCE

VERBATIM NOTES OF MEETING OF THE JOINT SELECT COMMITTEE OF PARLIAMENT APPOINTED TO REPORT ON MINISTRIES, STATUTORY AUTHORITIES AND STATE ENTERPRISES (GROUP 2) HELD IN THE CONFERENCE ROOM, THE ARNOLD THOMASOS ROOM, SIXTH FLOOR, TOWER D, THE PORT OF SPAIN INTERNATIONAL WATERFRONT CENTRE, 1A WRIGHTSON ROAD, PORT OF SPAIN, ON FRIDAY, MAY 11, 2012 AT 9.50 A.M.

PRESENT

Dr. James Armstrong	Chairman
Dr. Victor Wheeler	Vice-Chairman
Dr. Lincoln Douglas	Member
Mr. Clifton De Coteau	Member
Mr. Fitzgerald Jeffrey	Member
Mrs. Lily Broomes	Secretary
Miss Candice Skerrette	Asst. Secretary.
Miss Candice Williams	Graduate Research Asst.

ABSENT

Miss Alicia Hospedales	Member
Mr. Collin Partap	Member
Dr. Tim Gopeesingh	Member
Dr. Bhoendradatt Tewarie	Member
Mr. Kevin Ramnarine	Member
Mrs. Lyndira Oudit	Member
Dr. Lester Henry	Member

Mr. Chairman: I would like to call the meeting to order, and this is the meeting of the Joint Select Committee appointed to enquire into and report to Parliament on Ministries with responsibility in areas listed as Group 2, and on the statutory authorities and state agencies falling under these Ministries. This morning we are dealing with the Water Resources Agency.

Before we start can I ask you kindly to turn on your mics when you are speaking, and to turn it off when you are finished, and if we can also turn off all cell phones at this time.

What I would like to do is to ask the representatives of the Water Resources Agency to kindly introduce yourselves. Where would we start?

[Introductions made]

Mr. Victor Jones	Deputy Permanent Secretary
Mr. Terrance Jurawan	Permanent Secretary
Mr. Ganga Singh	Chief Executive Officer, WASA
Mr. Wayne Clement	Manager, Water Resources Management
Ms. Judy Francis	Manager, Licensing and Regulations Dept.
Mr. David Samm	Senior Hydrologist, (WRA)
Ms. Alisia Quaccoo	Manager, Monitoring and Evaluation Unit
Mr. Hollis Hinds	Dir. Economic, Research, Policy and Planning Div.
Ms. Sharon Archie	Manager, Operation, (WRA)

Mr. Chairman: I would like to start by asking the WRA to kindly explain to us the relationship between WRA and WASA because that is not very clear in the report that was actually submitted, and for public information we would also like to start by clarifying that. Who would address that issue?

Mr. Clement: If I may. In 1966, or thereabout, the Government of Trinidad and Tobago at the time was approaching the World Bank for funding, and the World Bank at that time indicated to the Government they needed to have a collection of data and information to inform some of the projects they were proposing.

10.20 a.m.

The World Bank recommended that the Government hire consultant firm to carry out, to train, to equip and to formulate water resources survey, which would carry out monitoring and collection of data and information to inform any planning initiatives or any project that they may want to put forward.

In around 1970-1971, the recommendation from the consultant was that—and the consultant firm of M.M. Dillon was the firm that was responsible for carrying out that initial water resources survey, establishing the survey, training, local counterparts staff, to carry out the activities and also to engage equipment acquire and install for hydrological monitoring. It was also felt, one of the recommendations from that consultancy was that there was a need to bring the drainage hydrology department which was carrying out similar but not extensively, some of the work of their department together with the water resources survey to form the water resources agency. This agency was reporting directly at that time to the executive director of the Water and Sewage Authority.

Mr. Chairman: Sorry, if I can clarify that then. The hierarchical relationship then, is that you are saying, that the WRA was reporting and is it still reporting to WASA. Is that the hierarchical relationship?

Mr. Clement: Okay, to continue the agency is a division of the Water and Sewage Authority.

Mr. Chairman: Okay fine.

Dr. Douglas: From looking at the mission statement of the WRA as a manager of water, it would seem

to me a little conflicting or inconsistent for the authority to be purporting to the user of water or the—do you experience that same conflict that I am experiencing or how do you experience that?

Mr. Singh: Hon. Chairman, hon. Member, the De Leon report in 1966, in setting up the WRA, indicated that it was a conflict of interest to have a regulator together with an operational provider. If we were to fast track to 1999-2000 with the integrated water resource management strategy report done by Delft hydraulics/DHV and Lee Young and Partners under the World Bank for US\$2 million. They said it was untenable for the WRA to be located as a department of the Water and Sewage Authority. The recommendation that emerged out of that report was for the WRA to be evolved into a Water Resource Management Authority that would regulate and look after all the water resources of our twin island Republic and that was the recommendation as of 2000. However, we are still where we are today. No, but I agree with you.

Dr. Douglas: What hinders the transition then?

Mr. Singh: The reports indicate that there is a conflict of interest—that the location is untenable, because the Water and Sewage Authority has to deal with day-to-day operations and therefore as a division of the Water and Sewage Authority the work of the WRA is tailored to meet the expedient needs of WASA and other users of the WRA, they come second in line.

Dr. Douglas: But it would seem to me that the work of the WRA is a far more overarching, and extensive operation than being at the beck and call of WASA per say as it is located here within the framework of the organizational chart.

Mr. Singh: I agree with you and that was consistent with a position we took way back in 2000, and it is something that we have to look at in terms with a clarity of vision for long term planning as to how we deal with the water resources of the country, how we deal with effective water shed management or how we deal with other areas and that really is the role of the WRA or any evolution that might take place. It is inappropriately located as a department of the Water and Sewage Authority.

Mr. Chairman: Can I just get some clarification on that? Is any action being taken really to redress that situation? Because it seems to be a very serious anomaly really where the agency that is supposed to have an overarching responsibility is actually subsumed as a department of the agency that it is responsible for. Is there anything that is happening actively to say, well look this is being addressed and it is going to change next month, next week. Where are we on that then?

Mr. Singh: Mr. Chairman, I think that it would be remiss of me if I do not give you an appreciation of the historical evolution on where we are today. So that you have in 1997, the study, a Water Resource Management Study commissioned by the Government and it was completed in 1997-1999. This is a World Bank study. Delft hydraulics, BHB out of Holland and Lee Young and Partners in Trinidad. That Water Resource Management Study, one of the recommendations was the transfer of the responsibility of

the WRA from where it was located in WASA to the Ministry of the Environment. That was done by way of a Cabinet Note No. 57 of January 12, 2000.

In 2000, there was an establishment of a steering committee to identify all pertinent issues and to make recommendations for transfer and establishment of the Water Resource Management Authority. That is by way of Cabinet Note 57 of 2000. Cabinet Note 10.89 of June 7, 2000, spoke about an implementation of an action plan to achieve the objective of the water resource management strategy. In 2001, by Cabinet Note 12.90 of July 12, 2000 there was the establishment of a Water Resource Management Unit (WRMU) under the Ministry of Works Infrastructure and the Ministry of Local Government to implement the action plan that emerged out of the integrated Water Resource Management Study done by the World Bank team.

In 2001, two senior officers of the Water Resources Agency, Dr. Steve Fletcher and Mr. Keith Meade were seconded to the Water Resource Management Unit. In 2002 the Water Resource Management Unit was transferred to the Ministry of Public Utilities and the Environment. By just by way of history for the benefit of Members of the committee, in 2001 public utilities as a Ministry no longer existed and the Water and Sewage Authority function was placed under the portfolio of the Ministry of Works and Infrastructure and Local Government, so that is why the unit was located there. In 2002 the Ministry of Public Utilities and the Environment re-emerge and the unit was not retransferred.

I am just giving you a chronology. In 2002, the development of a draft inter-agency coordination framework for integrated water resources management in Trinidad and Tobago. In 2002 also the development of bid packages for the procurement of consultants to develop a national water resource management policy and a legislative framework to govern water resources management. In 2002, the Ministry also procured a consultant Mr. Seth Tyler for the development of the National Integrated Water Resource Management Policy. In 2002, the Government procured consultant Mr. Roland Baptiste to formulate a framework for integrated water resources management—October 2002. In 2003, subvention provided by the Ministry of Public Utilities to the Water Resources Management Unit is processed by the financial system of the water and sewage authority.

In 2004, development of draft proposal for a suitable administrative arrangement for the operations of the proposed water resources management authority with regards to Tobago. In 2004, development of the draft on administrative arrangements to facilitate the meteorological services and the proposed water resources regulatory body; 2005, the adoption of the national integrated water resource management—[*Interruption*]

Mr. Chairman: Sorry, Mr. Ganga Singh, I appreciate the information that you are giving us, perhaps we could return to that a little later. Right now we are simply trying to clarify the relationship between the two and the management administrative functions and so on. So, perhaps if we could get back to Dr.

Douglas and then we would return to the chronological sequencing.

Mr. De Coteau: I am really very thankful for the historical analysis and the chronological sequencing that you give. But I would really want to pose a question, I mean like the—this water resource agency is like a sort of orphan. I mean no father, no ownership. Where do they think that they should really be? Where, should you all be? Under whose portfolio? Where would be the relevance? From what I am hearing I mean, I find that the Ministry of Housing and the Environment or somewhere would be suitable. I put this on my back, but where should you all be. Are you all comfortable where you all are?

Mr. Singh: Speaking as the CEO of WASA I do not think that the proper location of the Water Resources Agency should be a department of the Water and Sewage Authority. As a citizen I think that it is in the best interest of the country that we locate the WRA and whatever it evolves into, together with the environment and other agencies that would complete the water loop—the whole hydrological cycle being located in that environment.

So to answer your question, it remains as it was located in 1966 in 2012 as a department of the Water and Sewage Authority. Notwithstanding the various studies that indicated that it ought to be relocated more appropriately. It is by virtue of the fact that no one is establishing paternity for it that we have adopted it as our department.

Mr. De Coteau: Thank you, Mr. Chairman. It reminds me so much of my constituency Moruga/Tableland that I would really pose some questions to them in due course.

Mr. Chairman: Dr. Douglas, were you finished or you want to continue?

Dr. Douglas: Yes.

Mr. Chairman: Mr. De Coteau could you continue then.

Mr. De Coteau: Thank you Chair. Chair, you see I am looking at all this research and the advice that the WRA would have to give. Just for the identification of members, I am the Member of Parliament for Moruga/Tableland. Unlike the WRA, we seem to be a forgotten area for them. For instance, was the WRA—did they have any input in the desalination plant that was placed in La Lune? What is the status of that if you all are aware of that plant? Why is it up to this date they cannot get water to the people of Marac in Moruga? Why is it? I mean I would really like to know because the members of my constituency they are all looking out, because I told them I was going to be dealing with WASA today not knowing I was going to deal with some embryonic thing of WASA—WRA. But somewhere along the line you all would have had some kind of advisory input into that desal plant. What is the status? Why was it placed? Why was it so inefficient? Why did they establish a plant in La Lune with short pipe that was only drawing in sand? It is functioning no more. When would the people of Marac get water supply for their area? They are asking me that as the Member of Parliament. Since 1956 they have been trying. When are they going to get pipe bone water?

Mr. Singh: I want to thank the hon. Member for the question. The desal plant never function for the simple reason that you enunciated. It was done about four years ago and the proper study was not done of the seasonal types and the extent to which the intake pipe ought to have been located. Therefore, at the startup of the plant you had significant sand intrusion and it never worked. That plant is really—it is scrapped now in a real sense. Also, the provider of the plant, Haji, packed their bags and left the country and therefore that plant really cannot function in its current state. It will only be cannibalized for certain parts.

With respect to the second question, as to when the people of La Lune/Marac will be getting a proper water supply. As you know we are looking closely at that area the whole Mayaro area, the whole La Lune/Moruga area. We are doing some work, pressure valving and so on in the La Lune area and they have improve. But the Marac area we are looking to do some wells in order to bring water supplies into that area. I would say within the next year and a half they will have significant improvement. Significant focus is being placed on that area, all the margins that hitherto did not have water.

Dr. Wheeler: On the document that you supplied under 1.2, “Water resources functions” says: “To manage the countries water resources for sustainability used in the integrated water resources management approach”. Could someone just explain a bit more what this means?

Mr. Clement: Thank you, Sir. The integrated water resources management approach is an international best practice used for managing water sector and water resources worldwide. What it said is that water impacts on all aspects and spheres of life, and therefore before you can make decisions that impact people’s existence, people’s livelihood you have to involve all the stakeholders in the discussions. So it embodies, bringing together all the stakeholders that has an interest in water in particular areas and nationally and sitting down and identifying what are the challenges, what are the risk and trying to find solutions using a best practice method and approach which embodies discussion, it embodies analysis, future planning and also available data.

So it is a kind of embryonic way of treating any issues any planning initiative that you may have, forward thinking approach addressing the issue. It is something that we practice at the Water Resources Agency. It is what drives our mission.

Dr. Wheeler: How would this new approach, how successful have you been in being able to implement the discussions as you say before our—*[Interruption]*

Mr. Clement: We have had our challenges as was intimated earlier with respect to our location, where we sit within the Water and Sewage Authority. However, most of any project that is being planned has to go through any policy approaches which entails maybe, they may have to be applied for a CEC, and as part of that CEC process the Water Resources Agency has an input. Most projects are passed through to WASA which will then be referred to us and then we would have an input to what is being planned and

what we can do with respect to improving the project, ensuring its sustainability, ensuring that there is water provided for it, and to ensure that it does not have anything negative impact on the water resources of the country. The Water Resources Agency also sits on a number of other planning committees, Ministry of Energy, Minerals advisory committee and a number of others where we are informed.

We also have what is called an integrated water resources management stakeholders meeting every quarter—every three-months. So where we meet with all the State agencies, Government organizations, some NGOs, CBOs and we discuss plans, projects and initiatives that are on the ground or that are being planned and have an input or discussion. So we can prioritize, we can put into a schedule as to how we can provide information to ensure that these projects are sustainable.

Dr. Wheeler: Does your consultation involve going into the communities where anything is being planned to have discussion with the local communities or it is just with the technical stakeholders from what you are mentioning?

Mr. Clement: No, we are also involved in community stakeholder meetings and I can cite the Caparo/Mamoral area, we were involved in that initiative and we had been involved in many others where we would meet as a member of the WASA team, we would support on any initiatives and attending to any stakeholders interaction or meetings that are conducted.

Dr. Wheeler: Just another slight question. We know that it has been said that there is lack of coordination between WASA and the agency responsible for repairing roads. So when you repair a pipe in a road, the road is dug up then it is not properly paved after. Sometimes you have leaks appearing in a road that has been newly paved. Is your agency involved in dealing with this issue?

Mr. Clement: No Sir. It is the operations and arms of WASA, the Water and Sewage Authority.

Mr. Singh: Dr. Wheeler, the road restoration has historically been a challenge and we are putting some focus on it. If you were to back up a bit you would recognize that in the pipeline infrastructure we have about 7,000 km of pipeline infrastructure of different ages in the country in terms of the chronology as to when it was set down. In the absence of plan approach the utilities are located and what used to be in many instances the tracks and in some instances the road network has expanded to even cover up the utility infrastructure.

The Beetham is a good example. The expansion of the Beetham, the expansion of the Priority Bus Route when previously you had train lines. So a lot of the utility infrastructure in the absences of the utility grids or utility reserve exist within the roadway and with the old pipe line network and the leaks as a result of the lack of a coherent programme of pipeline replacement you are going to have that.

The issue of restoration, we utilized—in terms of the major highways—contractors recommended by the Ministry of Works in the PURE programme. In areas where WASA restores the roads in terms of emergency leaks and so on we have paid a significant attention to having a standard operating procedure

as to how we repair. But the fact of the matter is that given the nature of our pipeline infrastructure it is easier to pave and in many instances when they pave and the heavy equipment is used it further exacerbates the nature of the pipeline.

We have gone on a programme to have a coherent programme of pipeline replacement. Any self-respecting utility needs to replace a 100 kilometers of pipe line a year and we have embarked on that kind of programme.

Mr. Chairman: Just one thing I want to clarify, in respect to that policy issue that was raised, because, forgive me but I am still a little confused as to whom we are really speaking with. It seems that we are really talking to two agencies. One, is the WRA who we are supposed to be speaking to today and the other is WASA. Am I correct? We are now talking to two different entities here, although you sit in the same—and notwithstanding the problems in terms of implementation recommendations to rectify that anomaly. So that is one concern that I need to clarify.

The other has to do with the policy issue and the policy document as indicated of 2005, and how that policy supposed to be implemented or oversight of that. Is that by the WRA and in turn, WASA? How is that supposed to work and why a policy of 2005, has that been up dated? How are you operating now really? I am sorry, but I am still not clear on the relationship between the two, and we are going back and forth between WASA and the WRA. Who is the most senior person here with respect to the WRA? Mr. Clement, could you clarify that for us.

Mr. Clement: Okay, I will attempt to, Sir—Mr. Chair. The Integrated Water Resources Management Policy is a policy that emanated from recommendations coming out of the strategy that Mr. Ganga Singh spoke about. This policy was completed and submitted for approval and Cabinet approved this policy in 2005. One of the recommendations from the strategy was the formulation of a Water Resources Management Unit, whose purpose would be to effect all the recommendation of the action plan coming from the strategy and from the steering committee that was set up by Cabinet. Included in this, was the need for legislation, because of the fact that there was a fragmentation of legislation that governs water resources management in Trinidad and Tobago.

There are many different pieces of legislation in different organizations and agencies that impact on the proper or efficient and effective management on water resource. So the policy was to bring all of that together in terms of a thinking, a philosophy and then to provide for the development of a legislation to bring that in to one body so that we could have a more efficient management of our resource. At this time we are in the process of reviewing this policy, we have been submitting and requesting comments from the different stakeholders with respect to what they see as the basis as changes necessary for the way forward and we are also engaged in making recommendations for inclusions into the legislation.

Mr. Chairman: Thank you very much.

Mr. De Coteau: Based on what Mr. Clement said, Chair, can I ask if it is in his opinion that they are fulfilling their original objectives efficiently and effectively or do they believe there is room for improvement.

Mr. Clement: There is always room for improvement. However, given the context of where we are and the challenges that we face, we believe that we are achieving our objectives as stated by our mission statement. We are involved in many of the projects, plans and one of the major components of that is the ability to collect and analyze information to be able to inform on the changes that are taking place within the climatic sphere and also on the ground in terms of our ground resources or water resources. So we feel that given the volume of data and information in the analysis that we conduct, and the meetings with the different projects and project teams, then we are able to provide information to inform and to help to sustain many of these projects.

Mr. De Coteau: Mr. Chair, just give me two shots again, this was based on what Dr. Wheeler had asked, and it is one that was repaired by one of our colleague. Since its inception, how many public consultation workshop has the WRA had to sensitize and raise awareness of sound water use practice, reducing discharge of effluent into water courses and recycling potable water for agricultural use.

10.50 a.m.

Mr. Clement: Thank you, Sir. The Water Resources Agency has a division within the Authority. The Authority has, what is called, a Public Education Centre, and in that Public Education Centre there is a section that deals primarily with water resources management. And we use that mechanism, that facility and the Public Education Centre invites schools to come in and they from time to time have programmes that speak to water use efficiency, demand management, watershed assessments, et cetera.

We conducted, through different other programmes in different parts of the country, last year we had a camp in Toco/Matelot, year before that we had one in Cumaca, and different areas where we try to inform and educate the communities. We are also involved, and we are presently engaged in setting up what is called an “Adopt-a-River Initiative” which is another project championed by Mr. Ganga Singh, the CEO, to help us to bring all the stakeholders and all the communities, NGOs, CBOs and every individual to become aware of the watersheds and the issues that are impacting their watershed and how it is impacting their water resources, and to help us at WASA, Water Resources, the community and the country to be able to provide good, clean portable water for the future. So, we are engaged continuously in education, in informing through different medians, through different attendance at different fora, and even at local and international stakeholder meetings.

Mr. De Coteau: Chair, again because of the whole incestuous nature of this WRA and WASA, I want to take the opportunity as well to pose this question, according to the records of the Ministry of Works and Infrastructure there are approximately 477 landslips in Trinidad. Fortunately or unfortunately in the

constituency of Moruga/Tableland there are 202, and there is the general perception that wherever you see a landslip you can put your head on the block that it was created by WASA—some broken lines. When one considers the statement by the CEO of the age of these lines, how do you reconcile that statement and the perception that is held by the people?

There is one school of thought by WASA, that when the land moves it fractures the pipe, but the general feeling is that it is poor, what you would say it is management that causes it and knowing they just neglect it. The water is leaking, it is reported and nothing happens, and as a result, the next thing you know, there is a big sink hole and someone house goes. Is there any advice given? How do you reconcile this, because this is indeed a challenge to the constituency of Moruga/Tableland, the constituency of Princes Town and the constituency of Tabaquite. Collectively, we have all the landslips, and trust me I have seen it, the WASA line is broken, house moves.

Mr. Singh: Mr. Chairman, I think what the hon. Member has indicated is the general perception. What we are in fact doing now in order to refute that perception is that we are going into the areas, we have created geographical areas and we are going into the areas affected by landslips and monitoring those landslips before the pipe breaks and informing the Ministry of Works and Infrastructure, because it becomes a chicken and egg situation—the land moves the pipe breaks or the pipe breaks and then the land moves, so it is a geotechnical question in many instances of what happened first.

In many instances also, the house owners and there is run-off water given the geology—and the failure to deal properly with the run-off water further exacerbates the situation. We are looking at also technical solutions, the non-utilization of PVC nor ductile iron pipes in that area, but high density polyethylene given the geology of the area that we are able to—there is more flex built in with the high density polyethylene. But it is an area, it is something that we are engaging with and collaborating with the Ministry of Works and Infrastructure, but there are instances where there are landslips in where we do not have a pipeline infrastructure because of the geology of the area. So each situation has to be deal with because of its particular circumstances, and to make any kind of generic assertion sometimes does injustice to both the Ministry of Works and Infrastructure and the Water and Sewerage Authority, but it is something that we are addressing.

Mr. De Coteau: I have been at many community meetings and members of the constituency are saying, “MP we are getting WASA bill but we are not getting any service, why should we pay these bills for services that we are not getting?” What do you say to members of the public when they bring that to your attention?

Mr. Singh: In a different incarnation, I too, was faced with that kind of question. You have to treat each assertion on the facts before it, because there is always an indication if they can get a rebate or if they could get away with not paying they would not pay. However, the fact of the matter is that according to

the existing law once you exist within half a mile of a standpipe you have to pay.

The question is, when such an assertion is made and the matter is brought before us, our commercial department then deals with our various internal issues and they check to see whether or not that person was receiving water, whether it is a scheduled supply of one day per week, two days per week, five days per week; but the fact of the matter is they are receiving water from somewhere. We have a lot of illegal connections, but in the specific instance we treat with each individually.

We had some \$563 million in receivables, people not collecting, people not paying their bills because we were not disconnecting. We went on a programme and we have so far significant moneys have been collected \$83 million in two months. So, therefore, people will pay when they get the supply. The supply has improved. The supply is not a 24/7 throughout; we have a ministerial mandate for 24/2 and this year 24/5; there are areas that are getting 24/7, but people must pay their bills because they are receiving a supply and if they do not receive a supply then we can ensure that what they are saying is true and if that is so then they get a rebate if there are paying.

Mr. Jeffrey: With all the issues surrounding flood mitigation over the years, how is the WRA position to assist in national development, rain, agriculture, heavy industries as well as meeting the basic needs of the country?

Mr. Clement: In particular as you mentioned flooding, one of the aspects of water resources management is flood management, and the agency collects a significant amount of information and work together with the drainage division and many other agencies—including the office of Disaster Preparedness and Management—to develop flood mitigation, flood maps that shows inundation areas; we collect data and analyze the flood events; we also look to see what areas were not particularly flood prone in the past and are now becoming flood prone; what is exacerbating it and what is causing it, and we try to address these issues with in the particular watershed by identifying the issues and then targeting the solutions for those issues.

In some cases it may be reforestation because of denegation or removal of the forest cover. In certain areas it may be poor drainage. We are more particularly involved in what is called “river flooding” as opposed to over-land flooding. Over-land flooding is more handled by the drainage division based on their engineering works. We are concerned about river flooding which is caused by natural occurrences and the carry capacity of the rivers in the watershed. So, we look at sedimentation and heavy sediments, changing the bed level of the river system and creating flooding and what could be causing that. It might be activities in the upper watershed and then we try to work with the particular state agency to seek redress for those particular issues. With respect to the rest of your question my colleague here will answer.

Ms. Francis: With respect for the agricultural initiatives: at Water Resources Agency my section deals

with water allocation, and in particular during the dry season that is when water for agriculture becomes critical. There is an initiative, the dry season planning, which takes place where there is collaboration with the different state agencies and, in particular, with the farming communities. What we have found though, is that when there is a wet dry season they would not turn up. However, when it is critical then they would turn up. These plans are ongoing. Every year it is reviewed under the WASA's operational division and the Water Resources Agency along with the metrological services, they provide us with forecast of rainfall information. So, in collaboration with these different farmers and different agencies we are able to sit and to come up with a plan in terms of allocating water to the different farming units.

Even at present there is an initiative with the Ministry of Food Production, Land and Marine Resources itself. They are looking at food security, and they have identified to us a number of areas in which they plan to undertake intensive agriculture and we are collaborating it with them in terms of determining the feasibility of whether a surface source or a ground-water source would be necessary given the geology of the different areas as well as the river network within the areas.

Mr. Jeffrey: This brings me to my second question, in terms of regularizing the legal water apparatus, what progress has been made in that regard?

Ms. Francis: When we look at our—if I should say—water abstraction base, at present we have about 99 registered abstractors, and if we look back over the years we can safely say that because of our active pursuit of investigations in—when we get reports that there is the legal abstraction taking place, because of the process that is entrained, which means that, once we get a report we have to go out and undertake an investigation and because of those actions we are quite successful in getting persons to comply, and as we make them aware of how their actions affect the water resources, and in a wider area the national community.

When we show them that there is one source of water, it comes from the rain, and all sectors, all communities and all persons need to use it, we are able to also appeal to their corporate responsibility. We have been successful in having them come on board and come into compliance with the regulatory and licensing process. In particular, let us say like 2010 when there was this severe drought we had over 44 applications. So, persons were getting the message and because it was really hitting them directly they knew that there was this agency that was responsible so they came in.

Dr. Douglas: Mr. Chairman, I have quite a number of questions and I am trying to separate out WASA from my mind, because if I include WASA it would increase my questions exponentially almost, because, WASA to me is more than water and everything, but I really want to stick with the issue of managing water in Trinidad and Tobago.

When I explore the management of water and I look at your objectives which really gives the definition of management about basically determining the quantity of water we have in the country, the

quality of water we have in the country, the investigation, enforcement, all that kind of thing; I really want to find out from you, your evaluation of how much water we have in this country. Do we have sufficient water for Trinidad and Tobago, and when I say sufficient I just do not mean for today, but in your estimation—well, let me ask them one by one rather than piling them up.

What is your knowledge of the quantity of water and the quality of water we have in Trinidad?

Mr. Clement: Trinidad and Tobago by international standards is not considered a water-scarce country. Trinidad has sufficient water based on that international benchmark. However, our challenges are: demand and availability; where the demand centres are and where the water is available.

Dr. Douglas: Based on your—is getting the water to the people?

Mr. Clement: Well, yes. In addition, we have demand from different sectors. We have the agricultural demand, we have the industrial demand, we have the potable-domestic demand and we have to leave enough for the environment. So, our challenge is balancing and managing for equitable allocation of this resource, which is not finite. I mean, it is finite, it is not inexhaustible, but, based on international standards we are above the standard. Of course, the challenges with respect to quality which impacts on the quantity—so, we have a lot of anthropogenic activities that are taking place within our watersheds that posing a serious challenge for us in terms of the impact on the quality of the water that we have and, of course, WASA and Water Resources Agency is challenged to treat that water to make it suitable and available for all the other users.

Mr. Chairman: If I could just tack on something to that from an earlier meeting that we had and it has been raised again with respect to the meeting that we had with SWMCOL, it was indicated to us—at least one of our Members at that time raised the issue of contamination of water, from particularly with respect to the Guanapo landfill, and it was reported to us that we have had discussions with the WRA and they have said that there is no migration of/or any problem affecting the water supply, now that you are here could you kindly comment on that?

Mr. Clement: If I may just clarify, Mr. Chairman, your statement there: you said that it was said that there was not contamination?

Mr. Chairman: That is right. That is what was said.

Mr. Clement: By SWMCOL or by the WRA?

Mr. Chairman: What it says here, what happened was, the question was raised, it was put to SWMCOL and SWMCOL said, well, we have had discussions with the WRA and they have said that the migration is not affecting the supply of the ground water because the supplies are different, they are isolated.

Mr. Chairman: Okay. So, the ground water reserve where WASA gets its potable water is different from the one that Guanapo is cited on?

Mr. Clement: Thank you, Sir. Just for clarification, the Guanapo dump or waste disposal site as it is

commonly known is located in an area that is not impacting directly on our ground water, where we abstract water from. However, the Guanapo leachate and over-land flows do get into a tributary of the Caroni River and then, of course, we have to treat it at the Caroni plant.

We also have a Guanapo intake, but this is upstream of the location of the Guanapo landfill site. So, it is not directly impacting our intake in the Guanapo area, but it is impacting our Caroni River system and our ability to treat that water lower down at the Caroni Arena Treatment Facility.

Mr. Chairman: Thank you. Dr. Douglas.

Dr. Douglas: Thank you, Mr. Chairman, because that was my follow-up question. But in general what is your evaluation of the quality of water that we have in Trinidad and how much does it impact on your ability to manage bringing it to standard quality?

Mr. Clement: Okay, we did a study some years back that looked at—and we monitor on the watershed. We use the watershed as our area of monitoring. There are 55 watersheds in Trinidad and 15 in Tobago, and when we looked at the analysis that we conducted over a period of time and we looked at what was generated from that analysis, it indicated to us that there was a change taking place within the watersheds in terms of quality. The quality of the water was deteriorating.

In particular, in the western catchment, the western watersheds, we are seeing that the water quality has reached to an alarming—within the watershed on a general level. What we are doing at this time, however, is part of this adopt-a-river initiative is to try and reduce or change that, to bring it back into a pristine type watershed situation. So, we are identifying what the issues are, what the parameters are, what is causing it and we are trying to address that.

Dr. Douglas: What are the issues? What are the threats to our water?

Mr. Clement: We have threats from many different points of view. We have quarrying that is also posing a very serious threat to the sediment loading of our rivers and the quality of the water; we have agriculture pesticides and the use of toxic chemicals in the treatment or in the use for irrigation and agriculture; we also have human activity, using the river as a garbage disposals mechanism; we have unplanned housing, also playing a particular and significant role in affecting our quality; we have industries in some cases that are outside the ambit of the water pollution rules and that are creating some concern for us. So, these are some of the issues that we are grappling with at this time.

Dr. Douglas: One of the things that you have mentioned there, very familiar to me in most of the areas that I am living or operating in. For example, I live in Maracas, St. Joseph and there is a lot of quarrying up there. I am also from Arima and there is a lot of quarrying up on the northern side there too, as well as unplanned development, agriculture, all of these things are things that I am familiar with and personal to me in the sense that people within my constituency or in my neighbourhood are complaining about—

Also mentioned under your objectives of management has to do with enforcement and

investigation. I was wondering about your investigative capacity and how you go about that, and what kind of authority you have in that regard?

Mr. Clement: Thank you, Sir. With respect to enforcement, we operate under the Water and Sewerage Authority Act and we also, from time to time, would use the other Acts and instruments in other Ministries and agencies, but primarily the Water and Sewerage Authority Act is what governs our operation at this time. Of course, as we have all said here today has its challenges in the sense that as an agency with national focus we are limited in some cases in terms of what we can and cannot do—

Dr. Douglas: Let me ask the question more directly: if a man blocks the river or if a man is quarrying and the quarrying is polluting the river, do you have the authority to stop him?

Mr. Clement: No, we do not.

Dr. Douglas: Who has the authority to stop him or her?

Mr. Clement: The Ministry of Energy and Energy Affairs at this time has the responsibility for quarrying in the country and they together with the Environmental Management Authority have some responsibility for those areas.

Dr. Douglas: This is a real problem because I know people who block the river, who are blocking up the drains; they build their house on the drain, they build their house over the river and nobody seems to have any recourse. What do you think could be done or should be done to give you more power to your investigations and your findings to making it a reality? Do you have any recommendation? I do not know if it is a fair question.

Mr. Clement: The drainage division also has some responsibility and authority for blocking of river courses and drainage, canals and things like that. The regional corporation has limited but some responsibility too, because they also manage some of those smaller tributaries. What we would recommend is that this National Integrated Water Resources Management Policy, should be implemented and the recommendation from the consultant to effect legislation, embody it within one authority to look at these issues and to give them the teeth to go out and monitor, enforce and to manage properly with a view to understanding what the issues are, what we can do to correct them and what has to be done to correct them.

Dr. Douglas: Could I continue, Mr. Chairman?

Mr. Chairman: Sure. Yes.

Dr. Douglas: Do you feel that you have sufficient specialized people for the kind of undertaking that the Authority should have?

Mr. Clement: At this time we have some deficiencies in that area in that there are some specialist skills that would be required. However, if we were to move to that level of operation, authority wise, then I think that we would need to look at that more closely, and we have already identified some of those

positions that would be necessary to give effect to an Authority like this as we are proposing and to have it function effectively.

Mr. Singh: Mr. Chairman, I just want to add with respect the last point raised by Mr. Clement. We put out an ad for hydrogeologist, hydrophysicist and geologist, and we put it to run for quite a while. The responses we got demonstrated that those disciplines do not exist in sufficient numbers to want to come into an environment like the WRA. What we have done in fact is to, through the Ministry of Public Utilities, advise the Ministry of Public Administration of the need to focus scholarships in these areas.

Mr. Chairman: Sorry, if I can follow up on that; it means that what you are saying is that the skills are short in the country?

Mr. Singh: Based on the response to our ad, and it was placed in the region.

Mr. Chairman: “Ah ha”, what sort of salaries—just an aside, is it that the skills are short or that perhaps what you are offering is not attractive enough?

Mr. Singh: Well, it could be a combination of both, but generally, what we do have is not very attractive, but what we are regarding is a kind of gestation that if we get young people it could be appropriate, but when you are competing with the oil and gas industry for those kinds of skills, we cannot compete.

11.20 a.m.

Mr. Chairman: But I also notice from your report that you submitted that, in fact, you have been involved in a training programme with COSTAATT and UWI to train a number of people. Would that not have been anticipated some years ago?

Mr. Singh: Well, we have embarked with the relevant authorities in both UWI with the UN—through UNESCO and we train in-house personnel there. So it was predominantly exposure to the people who currently work within the WRA.

Mr. Chairman: Yes, but I am talking about increasing the skill sets that you need for WRA and WASA. The training that you are providing, you said within COSTAATT you have up to the master’s level, if I recall, correctly.

Mr. Clement: If I may, Mr. Chairman, as Mr. Singh is saying, what we had identified, there was going to be a gap, and there is a gap, and we attempted to address that gap by creating avenues or mechanisms to engage and to bring in young people at different levels to fill that gap. So we started first with the associate degree at the COSTAATT and we then recognized after we have had a number of cohorts; that we needed to move to the next level, the bachelor’s level. So we had now a number of students ready, familiar with the subject matter, interested, metricated up to a certain level, and now we have moved into going further, and at the University of the West Indies we have a master’s programme in Water and Waste Water Technology.

Mr. Chairman: And that started in 2010.

Mr. Clement: Yes. And this is available not only locally, but regionally. So we are trying to bridge that gap not only within the context of what we are doing here at the agency, but also for the country. We, together with the UNESCO, identified certain short courses that could help to update and improve the skills level of our technicians and our professionals, and last year we conducted a number of programmes throughout the region which involved not only Water Resources, but also WASA and other state agencies. It was open to everybody to attend who would apply, and we got a significant number of candidates for that programme and they were able to avail themselves of these short courses.

Mr. Chairman: Are they bonded in any way? Who is financing the training? Is it the Central Government, or from WASA or your funds? And are they obliged to come and work for you after?

Mr. Clement: The special courses were funded by a UNESCO funding agency through the European Commission. The other programmes are being funded by the Government of Trinidad and Tobago through their subvention to COSTAATT and the University of the West Indies. WASA has in-house training that we conduct, that we, from time to time will identify certain gaps or certain deficiencies that are needed and that we have specialists at the agency who can deliver, and we conduct those on an ongoing basis.

Mr. Chairman: So the people that are being trained, really, at the level that you would need, may not necessarily come and work for you in any event.

Mr. Clement: Well, we have to attract them.

Mr. Chairman: Okay, thank you. Dr. Douglas, you want to continue? Do you have other questions?

Dr. Douglas: No.

Mr. De Coteau: Thank you, Chair. Chair, what we are witnessing is the need for a greater inter-ministerial approach, especially with the secondary schools. As Member Jeffery would know as a former principal, and my good self, we know that it is necessary that we alert graduates as to the possibilities at the tertiary level. Because what happens, not aware of the opportunities, not correctly guided with the career guidance, they tend to go into areas that are saturated and even though they are certified, they become unemployable. We are witnessing that in the teaching area right now, where in some areas they are now interviewing people who had applied since 2006, 2009, and people are still coming on the market. So there is the need for this greater exposure.

But, Sir, I would want to ask a question that was laid by our colleague. In the light of this—it refers to page nine of what we were given, the Development Plan—64 out of 177 persons obtained the associate degree, BSc, MSc or short course certification since 2001. The question is: what is the employee population since 2001? Are these 64 certified persons still employed? What was the cost of identified training for each group? What were the five critical issues identified by the WR Management

strategy of 1997? And what has the WRA done to deal with the remaining three issues since then? Probably they may need some time to give some written responses, or if they can give it now.

Mr. Chairman: Could you respond to all those questions now?

Mr. Clement: If I may, Mr. Chairman, I do not have the information that the Member requests at this time, but we would be most willing to provide, if he is able to document it for us, please.

Mr. Chairman: Okay, sure, no problem. We will follow up on that.

Mr. De Coteau: Chair, has the WRA ever undertaken a geographical assessment of the water consumption patterns of Trinidad and Tobago? If no, is there any plan to do so? And if the answer is yes, would they be able to provide the committee with a copy of the assessment?

Mr. Clement: An assessment was conducted sometime back. I think it needs to be updated. We have not updated it since, but that assessment can be, from that time period—I think it was around 1999—2000—provided if you need to, and we are always in the process of updating it, but it requires a significant amount of expertise that is not available at this time to really work on it.

Mr. De Coteau: Chair, if you would permit me. Again, apologies to the Members present. But, again because of the cousin family relationship with the WRA and WASA, I would want to pose this, probably to Mr. Ganga Singh, and I am sure the other Members would concur with this. There is the perception that some turn cock operators are in collusion with water trucking suppliers, so as Ms. Judy Francis said, whether it is a wet dry season, a dry, dry season or a wet rainy season, the pipes are locked off and the trucking contractor would continue to go laughing to the bank. Is that perception real, or is it just an “I feel” hypothesis on the part of the ground people when they are deprived of this necessary vital supply?

Mr. Singh: Mr. Chairman, a significant part of our population receives a scheduled water supply. That schedule may be impacted for several reasons; depending upon electricity outages; depending upon problems at the source, whether it is desalination or whether it is a breakdown of the water treatment plant. And in many instances the turn cocks get that blame because they have to operate the schedule. However, if there is any indication that there is that level of collusion and that is brought to our attention, we will deal with it. Thus far, in my tenure, we have been hearing that kind of rumours. We have investigated, but we have not found that level of collusion thus far.

Mr. Jeffery: In my own La Brea constituency, we have seen some improvements in the water supply, but, however, I do have some areas that I have serious problems—tremendous problems: Lot 10, Sobo, Bassa Hill, et cetera, in La Brea—tremendous difficulty with the water. Given the impending industrialization in the Union Estate is the fear that we may see some kind of level of retrogression in that regard. And I am looking at page six where I see the water demand analysis and demand management, I want to find out in terms of my own southwestern area, about the impending desalination plant that seems to be on hold.

Mr. Singh: The south-western part of Trinidad is a highly water-stressed area, simply because the sources for water are not really located in large amounts in that area and that, therefore, the thinking was that a small desalination plant geared towards that south-western area was the thinking. As a result, about three years ago a contract was given to a producer, Seven Seas, to produce 4.6 million gallons of water in that area. The delay had to do with the fact that at the site where the package plant was going to be located, and when the civil works were conducted, you had an untapped abandoned oil well, so you had to go through the regulatory gamut in order to do that.

The second delay in the process was the fact that permission was required to put an intake pipe in the seabed and I was informed only yesterday that Cabinet has granted that permission for that. So we expect within the next three/four months—because the package plant is there; the works are proceeding apace now so that all the regulatory requirements are fulfilled. So within the next quarter, certainly before the next dry season, you would be the beneficiary of that.

The point about industrialization, we have had a problem in the society that we embrace significant industries who are very large users of water, but we do not plan and treat water as an economic resource, as a significant component in the industrial process. And whilst we talk about—and we hold Point Lisas as a flag slip. For years Point Lisas utilized the public water supply in order to produce ammonia and methanol and urea. It takes three tons of water from WASA to produce a ton of ammonia or methanol. So a lot of the water was going in that direction. Unfortunately, we reproduce that in the Union Estate again, and right now the TGU is in a problem to start up the electricity plant because it cannot get a consistent volume of water over a two-month period in order to start up the—to clean out the turbines.

So that, therefore, we need to rethink the way we deal with water and we need to rethink our approach to industrialization, because water must be treated as almost a precondition to industrialization and as an economic resource that must be priced also, accordingly.

Mr. Jeffery: The site for the desalination plant, does it remain in the same place?

Mr. Singh: Yes, at the Trinmar compound. We have already run all the infrastructure, it is just a matter of the package plant now, getting the intake. All the regulatory requirements are completed and the private sector operator, Seven Seas, is expected to do that within the next four months.

Mr. Jeffery: I think we have seen some improvement, as I say, in the water distribution. It is just that those three years—I mean, you know, they are serious.

Mr. Singh: And it would further improve because we have now the booster station in Oropouche that would take the water and give it a head to reach down into those far flung communities.

Mr. Chairman: Whoever can respond to this. Mr. Ganga Singh just raised a critical issue in terms of our spatial development, and we seem to be, in a very ad hoc way, identifying areas for commercial

development, industrial development, industrial estates, housing and so on, and not really taking into consideration the requirements for a critical need such as water. What is the relationship with the Town and Country Planning Division, for instance, in determining a lot of these spatial development requirements, and the supply required for the type of development that you are talking about? I saw integrated planning within the Water Management System itself, but integrated planning in terms of our national spatial development and requirements, I do not get a sense that there is any collaboration or integration. How would you respond to that?

Ms. Francis: As the Water Resources Agency, we are a key stakeholder in the CC process.

Mr. Chairman: Sorry, in the?

Ms. Francis: CC process (Certificate of Environmental Clearance) which is facilitated by the Environmental Management Authority. From our understanding, when development projects come to the Town and Country Planning, they would send it across to the Environmental Management Authority to determine whether or not it would require an Environmental Impact Assessment, and once that is determined by the Environmental Management Authority they would now require the proposer to undertake this type of assessment, and as the Water Resources Agency we are required to review the contents of the Environmental Impact Assessment studies, particularly looking at the impact of the proposed development on the water resources of the country, specific to the development site and a wider study area.

In that review, we are required also to look at whether the mitigation or the abatement plans, their—plans, their management plans, whether the measures proposed are adequate to provide protection to the water resources. I know also that in terms of, if it is a development that would require a water supply, that they would also liaise with the operation division and, in particular, the new services division of the Water and Sewerage Authority in terms of that determination.

Mr. Chairman: And that is a particular point that I am interested in. At what point does that really happen? Because the question of a CC is at the time that you actually would have decided on a development. I am talking about forward planning, where the planners are able to look at the national spatial arrangement context and be able to say, “Okay, our industrial estates would be in these locations”, and WASA, or whoever, is aware of that way upfront and would be able to say, “Well, look, you are going to have a difficulty here; maybe you should consider here”, you know, that kind of integrated development planning at the national level. It just seems that, you know, it is a highway here, an industrial estate here, some housing over here. You know, I do not quite understand if these major agencies: transport; water; health and housing, are actually talking to each other.

Mr. Singh: Mr. Chairman, I think for the greater part you are right. There is a lack of that kind of close collaboration, and even when there is close collaboration, water genuflects before industrial development.

In other words, the decision is made and then we have to find the resource. So it is not a coordinated process that has been our history. So that there is need for a fundamental paradigm shift as to how we treat water, and that instead of water genuflecting, it must be regarded as an important, finite resource in this whole area of development.

A good example is that in the movement of development beyond the 300 feet elevation, you would notice, if you only were to take a cursory glance at the northern range, you would see the WASA tank located in a spot but there is development further than that. Santa Margarita area or St. Joseph area is a good example of that. It means that there is significant energy consumption in order to provide that resource for the people. That is the kind of thing that takes place. So the water comes from behind. There is a lag, when infrastructure ought to be ahead of the development and be part of a planned process of the development. That is why we are saying we need the Water Resource Management Authority in order to be part of that process, and empowered appropriately with penalties and sanctions.

Mr. De Coteau: May I come in?

Mr. Chairman: Mr. Jeffrey, hold on. You wanted to add to that?

Mr. De Coteau: Yes, just to add. As Mr. Singh says, the application of the integrated water resources management approach speaks to that. "It promotes the coordinated development and the management of water, land and related resources by managing in an equitable manner, conflicting demands on, and shortages of resources while maintaining the economic and the ecological sustainability of natural and human systems." So application of the IWRM principles is one of the best practice approaches to managing the limited water resource to address some of these issues that we are identifying here today.

Dr. Wheeler: One other question. On page two of your document your accomplishments and administrative activities, you refer to installation of Tobago stream flow network in 2010. Can anyone just comment on that?

Mr. Clement: As I mentioned earlier, the agency installs a number of monitors across the country to collect data and information to be able to inform on the changes within the water resources cycle, the hydraulic cycle. During a particular period of time the rainfall gauges and stream flow gauges within the Tobago network had gone into disrepair. And in addition, some of these gauges were old-type technology and we were involved in updating our technology. So at this time we implemented a new system within Tobago, using real-time scudder technology to bring the information from Tobago to our base at head office to be able to manage the water resources within the Tobago society.

Dr. Wheeler: One other question. It said Tobago has lots of natural wells and springs. Do you foresee in the future that Tobago might have need for a desalination plant, from what you have seen so far?

Mr. Clement: The question really has to do with the quality of the water and the impact that activities are having on the quality of the water that we have in Tobago. When we looked at that same assessment

that I mentioned earlier where we looked at the watersheds within Trinidad and Tobago and looked at what is impacting on them, we saw that Tobago is not as bad as Trinidad in terms of the state of the watersheds. However, it is deteriorating. We are seeing a sudden shift in that direction. We have started to address that now, so that it does not reach to that level. We have recently conducted meetings within Tobago, and we have scheduled some meetings with the Tobago House of Assembly to identify what are some of the challenges and issues that we are faced with within these watersheds and how we can seek to address some of these; how can we redress some of these situations.

Dr. Wheeler: One further question now. This may be for WASA itself. The THA has been creating some new housing developments. Some of them seem to be plagued with sewage problems. Is this something that WASA can assist with? Or is this the responsibility of the developer for the project that they are charged with solving?

Mr. Singh: Thank you, Dr. Wheeler. Mr. Chairman, through you, the first thing is—I want to answer the question about the desalination for Tobago. There was envisaged that the Cove Industrial Park, a site for a desalination plant. Since taking office we have instituted quarterly meetings with the Chief Secretary to brief him and his team as to what are the developmental projects in the water and sewage area in Tobago. That matter of the housing in Plymouth and in other areas is not an issue of direct responsibility for WASA, but we view the tourism economy in Tobago very dearly. It is US \$160 million a year revenue stream in tourism, and we are addressing the whole area of the sewer in southwest Tobago—a short-term plan and a long-term plan.

And you answered correctly, there is a principle in the utility sector. The developer has that responsibility, but our approach is to solve the problem, not to abandon it, and that, if requested, we can make our expertise available in that area. But what is happening is that the contractor is responsible in the current state of affairs.

Dr. Wheeler: One further thing. You said, if requested you can assist.

Mr. Singh: Yes. What we have embarked upon, in order to bring about a kind of commercial culture within the organization, we do work for EMBD; we do work for HDC and we charge. So if requested, there is a cost associated with it.

Dr. Wheeler: This problem with those housing developments have been going on for a couple of years now, and I am just wondering, will there come a time when you will be able to suggest, or is it that you have to be asked to assist?

Mr. Singh: Generally, in situations of that nature, there is need for some kind of investment, and that, therefore, when the diagnostic is done as to what is the problem then there must be follow-up action. So we can do a preliminary free, but further than that, you have to pay.

Mr. De Coteau: Chair, I have approximately three questions. The first—it was mentioned here on three

occasions, and I do not think it was elaborated upon—adopt-a-river. I am interested in that because in my constituency—and Mr. Jeffrey, you would have to—we have the river of hope which is supposed to be where Columbus came. What is the whole objective? What is the outcome? How do you go about this? What do you hope to achieve?

Mr. Singh: I will give you the idea and the concept and Mr. Clement will flesh it out. Adopt-a-river is an attempt to intervene in the area of watershed management. What we have found in the aftermath of the integrated water resource management strategy, that nothing was done in order to alleviate the problems of the watersheds, and the rivers themselves now reflect the health of the watersheds, so that there is need for an intervention to deal with the degradation that is taking place in the watersheds. So about a year ago we said that, “Okay, let us intervene in the Guanapo area, which is one of the main tributaries flowing into the Caroni river plant, and we gave Mr. Clement and the Water Resource Agency to flesh out this concept and to come up with a plan so that we will adopt a river, bring collaboration between the communities, bring collaboration with the business sector, bring collaboration with the environmental agencies, seek to access the Green Fund for its sustainability, and Mr. Clement has been working on that and we have reached the point where we are soon able to launch that programme.

Mr. Clement: Mr. Chairman, the adopt-a-river initiative seeks to involve all communities, corporate citizens, NGOs, CBOs, the man-in-the-street, faith-based organizations, anybody. We want to encourage people to adopt the watershed and to change the behaviour, to change the thinking, to create a new paradigm in terms of how we treat with our watersheds. We have recognized that there are many issues impacting the watershed and some of them are anthropogenic, there are human activities and can be resolved if people take ownership of their watersheds. What we have seen is that our initial foray into this, communities at large have been very welcoming and very anticipatory in terms of, “When is it going to come; when are you going to launch so that we can start to get involved?”

We have had meetings with a number of state agencies and a number of private corporate bodies that are actually carrying out work in some watersheds. What we recognize is that a lot of the activities that are being conducted by these companies are not holistic; they are not sustainable; they are one-off, PR campaign-type corporate social responsibility initiatives.

11.50 a.m.

What we are trying to do now is to bring a semblance of a management approach to look at what the real issues are, identifying them and then engaging the community to come on board, whether they be State agencies, corporate entities or private citizens to find the solutions, implement the solutions and to ensure that they are sustainable, not if they are one off.

We have seen occasions where one stakeholder clear a particular forest, another one comes and replants and then somebody else comes and put down housing in the area. All these things impact our

water resources. So we are using this mechanism to bring awareness, to change behaviour, to change the culture, to change the thinking about how we treat with our watersheds and our water resources and to put it at the level which it should be as the primary focus for sustainability.

We have adopted a number of principles and we have a number of objectives defined. We have a process that we will be unfolding soon where you can register a simple MOU to commit the two parties and then to engage them in a systematic, holistic, sustainable project that would see the change in the watershed, the health and state of the watershed and hopefully then improvement in our quantity and quality.

Mr. De Coteau: Chair, could they give copies of the—

Mr. Chairman: You have how many more questions, one?

Mr. De Coteau: Yes. Based on what Mr. Ganga Singh said, the recommendations would be made for wells. Is there a possibility, CEO, that the desal plant, the one that is being cannibalized for parts that that area could be used to have a booster pump or a booster station? What is happening now is we are getting the water from Trinity Hill coming down, and they have placed two pumps in Grand Chemin that are giving La Lune and parts of Grand Chemin water. They never had it so good. As a result there are endless leaks, they cannot take the pressure but still it can go up to Marac. So, I am asking if those pumps could bring it as far as La Lune, it would be good to have a booster station there to take it into Marac.

Then we are talking in terms of the other things, about the tourism. We know in the Moruga area we pride ourselves for the L'Anse Mitan, La Retrait Beach area, that is one of the most beautiful beaches you find here. But, then again, there is no water going into that area, even up to the fishing village there is none. So is there the possibility of getting things there?

For the Easter weekend you had several campers over 100 camps and, as the MP when you reach there they say, "MP, where is the water supply?" "MP, when are you going to bring the park toilets?" These are the questions you are asked. There are the possibilities, but we need the help from the authorities.

Mr. Chairman: Could we get a very brief response to that?

Mr. Singh: I just want to give the hon. Member the assurance that we are —as he recognizes— addressing those problems that are taking place sequentially. First, we solve the La Lune problem and then we will solve the Marac problem. As to whether we can utilize the tank that was for the desal, it is something that we are also exploring for that area. But, you can be assured we are addressing and looking at all the internal tourist resorts in Mayaro and other areas to solve the problem in the peak periods of , how to provide the water for them to continue to enjoy.

Mr. Chairman: Dr. Douglas.

Dr. Douglas: One of the things that is clear to me from listening to your passion is that I am really

concerned about really the meaning and the place of water in Trinidad and Tobago. From my folk experience in Trinidad, I am not sure that the country as a whole gets it as yet, that this is a finite resource that is the backbone upon which the country is running in almost everything. I am concerned that there is a significant discrepancy in understanding what you are putting out, what I am feeling and, what I see is going on in Trinidad and Tobago. And if that level of discrepancy exists, I am wondering what are we doing and what more can we do to bring this home to the nation. When I say to the nation, I am not only talking about end users because they might be the least of the apostles in terms of understanding what the significance is. So, I am really concerned about that. Probably you could give us a little—

Mr. Singh: I think, hon. Member, through you, Chairman, you have encapsulated the need for the cultural shift in the way we view water. That is, why in the attempt to “Adopt a River” to engage the communities that there is a very narrow perspective on water. We need now, institutionally, to coordinate, the whole hydrological cycle whether it is drainage WASA, the environment, WR or it is agriculture. Every participant in this area needs a level of coordination and we need to rethink water by placing a level of emphasis on it. For example, perhaps, there is need as Singapore did, to have a Ministry of the Water and the Environment.

Dr. Douglas: You see, Singapore has no water of their own so they understand it clearly.

Mr. Singh: No, they have water. The island is just about three square miles larger than Tobago, they have water. They imported water from Malaysia, they are utilizing reclaimed water, and they have surface water, but they use water efficiently. By placing and validating water, in terms of the value system allocated to water that is where we are missing: the pricing of water and everything associated with the pricing of water.

The last time WASA got a rate increase was in 1993. Since 2008 the independent body, the Regulated Industries Commission (RIC), has had a WASA rate increase application before it. So, here it is you have an independent body set up to insulate the political directorate from making a decision, set-up in 1999 and some five years after they have not made a decision. How can you establish that there is a value for water when you do not price it appropriately? So that everything has to have a kind of symbiotic relationship that would allow the value of water to be established in the minds of our citizens.

Dr. Douglas: My second question is: is the WRA also over coastal waters and what is your understanding of what is happening with our coastal waters?

Mr. Clement: The concept of watershed management is a, “Rich to Reef” concept. In order words, whatever happens in the upper reaches of the watershed impacts the coast. So water resources management embodies coastal zone management to some extent. But again, as we have said here, our positioning and our expertise in that area is limited, and therefore we had conducted a coastal zone assessment some years back. We have not been able to update it. We have looked at some coastal zone

management approaches, but again, it is limited in scope.

Mr. Chairman: I think, there are just two quick questions that I have and then we will finish off. I want you to look, Mr. Clement, at page 7 of your submission with respect to revenue and expenditure. There are some things that I did not quite understand. If you look under 2005/2006, the salaries seem to be fairly consistent through the years. But, when you look at revenue and you look at abstraction charges I saw it was in excess of \$ 21 million. If you look at 2010/2011 you have a figure of \$ 419,000. What is that? What is going on there really? What is that about?

Ms. Francis: Okay, 2005 and 2006, this sum represents a payment of \$17,000 by the Caroni (1975) Limited in liquidation of their water abstraction charges when they were dissolved.

Mr. Chairman: ‘Ooh,’ so they actually owed you that money?

Ms. Francis: Pardon me?

Mr. Chairman: They owed that money?

Ms. Francis: Yes, and they actually paid it during that period.

Mr. Chairman: Okay, all right. Then since that time it went down to about \$ 2 million-plus. So what happened in 2010/2011, why did they—

Ms. Francis: Actually, the collections or these figures which we received—we received collections or figures from two different agencies within WASA. What comes to the regulatory and licencing department comes from the customer business services. If you would look on page 8 for the 2011 period, it is actually \$2 million reflected there. So the other department needs to play catch-up in terms of reflecting the records.

My final question is for Mr. Ganga Singh. I could not let you leave here without inquiring. Your Minister indicated recently that WASA are overstaffed by, I think he said, 2,000 persons, if I am not mistaken. At the same time you are training people and you need to employ people, and certainly there is a need in the WRA as well. Could you explain what that problem is about? Are that the people that are your excess, at a lower level where people are simply sent to WASA, “Eh, give him a job, give him a job, give him a job.?” You need people, but at the same time you have 2,000 in excess of your needs. Could you clarify that for us?

Mr. Singh: Sure, Chairman. The Cabinet structure of 1999 provides for 2,033 persons.

Mr. Chairman: 2000 and—

Mr. Singh:—and 33 persons. There was a VSEP programme and by the end of 2001 the WASA staff was 2,300 to go down to that by attrition to that 2,033 over a three-year period. Unfortunately, in the eight-year interim the staff ballooned to over 4,300 and some monthly and daily-paid workers, together with an addition of 300 NSDP workers. So it is 4,794 when it ought to be where it is supposed to be. The fact of the matter is, you are very clear in your analysis, for every one person we have dealing with

operational issues in WASA we have four support staff. So, it is skewed.

Mr. Chairman: Okay.

Mr. Singh: Therefore, there is need for capacity in operations and the technical competence that is required, and we have more in administration. So, as a result we have put certain measures in place.

Mr. Chairman: I take it that efforts are being made to address that problem.

Mr. Singh: Yes, we have a restructuring that will take place in collaboration. We have engaged in social dialogues with our main union partners and we are moving ahead.

Mr. Chairman: Is there anything else that we did not raise, that you think we should be aware of and that you would like to see addressed in our report to the Parliament?

Mr. Singh: I think, Mr. Chairman, my colleagues, we are all of the same mind; there is need to look at the long-term planning in this country. That long-term planning requires an institutional framework—long-term planning in water—that is not the current WRA. It ought to be something more robust, it ought to be something as envisaged as the Water Resource Management Authority has envisaged in the Integrated Water Resource Management Strategy. We have in fact, lost some years, but we need to do that with a measure of urgency, because there is compelling need. If we do not have a robust and strong institutional organization, the degradation that we are seeing in our watersheds will continue.

Mr. Chairman: Mr. Clement, anything that you would like to advise us on? One thing, Mr. Clement, I notice that while you are supposed to be an autonomous body, you depend on your funding really from WASA.

Mr. Singh: So he is in bed with the provider.

Mr. Chairman: Yeah, is there some way we can delink that in the—

Mr. Singh: So, now you understand when I have operational requirements they have to direct their resources towards fulfilling my operational requirements because I carry the purse string.

Mr. Chairman: I do not think that is a good arrangement.

Mr. Singh: No, it is not.

Mr. Chairman: Is there some way that you could be delinked in the not too distant future? What would be required, what would the Government, the Parliament or whatever be required to do, to really address that situation as soon as possible?

Mr. Clement: Mr. Chairman, thank you. In my opinion, I want to say that the National Integrated Water Resources Managements policy which is a document approved by Cabinet, is the first step. We are under review.

In addition, there is need for the setting-up of this management authority, the separate autonomous body, self-sufficient, looking at the planning initiative; looking at all the water sector needs and demands and trying to grapple with the issues as they come up and to have ‘teeth-effective’

legislation that would allow us to enforce some of the decisions that would have to be hard decisions, that would have to be taken with respect to protecting and conserving our water resources, especially looking at water use efficiency and disband management. I believe if we address those in the not too distant future the country would be more poised to have more sustainable water resources for future needs.

Mr. Chairman: So legislation would also be quite important. Okay, I would like to thank you very much for attending and for the information that you have provided us and for the submissions you made earlier. There are some outstanding matters that we would like to follow-up on and we would ask the Secretariat to contact you to request that information and if necessary we shall get in touch again. So, I thank you very much and this meeting is adjourned. Thank you.

Adjourned: 12:07 p.m.