

CARIBBEAN DEVELOPMENT BANK

TWO HUNDRED AND NINETY-SEVENTH MEETING OF THE BOARD OF DIRECTORS

TO BE HELD VIRTUALLY

MARCH 31, 2022

PAPER BD BD 4/22

**NOTIFICATION OF APPROVAL BY THE PRESIDENT OF A GRANT –
DOMINICA WATER SECTOR STRATEGIC DEVELOPMENT PROJECT –
COMMONWEALTH OF DOMINICA**

In accordance with the authority delegated by the Board of Directors at its Two Hundred and Seventieth Meeting (Minute 270-32), the President approved a grant to the Government of the Commonwealth of Dominica of an amount not exceeding twenty-one million nine hundred and seventy thousand, one hundred and ninety-seven Pounds Sterling (£21,970,197) (approximately equivalent to thirty million, three hundred and eighteen thousand, eight hundred and seventy-two United States dollars (USD30,318,872)) from the Special Funds Resources of the Caribbean Development Bank (CDB), allocated from funds provided by the United Kingdom through the Foreign, Commonwealth and Development Office to CDB under the United Kingdom Caribbean Infrastructure Partnership Fund, to assist in financing the enhancement of the climate resilience of water supply and distribution infrastructure and a wastewater system, as well as enhancing operational capacity of the Dominica Water and Sewerage Company Limited to deliver an efficient, reliable supply of potable water to targeted areas and to collect, treat and dispose of wastewater, on the terms and conditions referred to in the attached Paper.

2. It is a condition that each project approved by the President and the terms and conditions thereof be reported to the Board at its first convenient scheduled Meeting after approval of the project.

3. The Board is therefore asked to note the approval by the President of the abovementioned project and the terms and conditions thereof.

PUBLIC DISCLOSURE AUTHORISED



CARIBBEAN DEVELOPMENT BANK

APPRAISAL REPORT

ON

**DOMINICA WATER SECTOR STRATEGIC DEVELOPMENT PROJECT
COMMONWEALTH OF DOMINICA**

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Notified at the Two Hundred and Ninety-Seventh Meeting
of the Board of Directors held on March 31, 2022.

**(BD 4/22)
AR 22/2 DO**

Director Projects Department

Mr. Daniel Best

Division Chief

Mr. L. O'Reilly Lewis

Economic Infrastructure Division

MARCH 2022

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CURRENCY EQUIVALENT

Dollars (\$) throughout refer to United States Dollars (USD) unless otherwise stated.

GBP1.00	=	USD 1.38
USD1.00	=	GBP 0.72
USD1.00	=	XCD 2.70
XCD1.00	=	USD 0.37

Pound Sterling to USD conversion at September 13, 2021

ABBREVIATIONS

AA	-	Administrative Assistant
AO	-	Accounting Officer
AOI	-	Area of Influence
CC	-	Climate Change
CDB	-	Caribbean Development Bank
CFU	-	Colony Forming Units
CLO	-	Community Liaison Officer
COC	-	Community Oversight Committee
COVID-19	-	Coronavirus Disease 19
CVRA	-	Climate Vulnerability and Risk Assessment
DOWASC	-	Dominica Water and Sewerage Company Limited
EC	-	Engineering Consultant
ECCB	-	Eastern Caribbean Central Bank
EE	=	Energy Efficiency
EMO	-	Environmental Monitoring Officer
ESIA	-	Environmental and Social Impact Assessment
ESMP	-	Environmental and Social Management Plan
ESRP	-	Environmental and Social Review Procedures
FY	-	Fiscal Year
GBP	-	Great Britain Pound
GDP	-	Gross Domestic Product
GIS	-	Geographic Information System
GM	-	General Manager
GOCD	-	Government of the Commonwealth of Dominica
HR	-	Human Resource
IPF	-	Infrastructure Priority Framework
IRC	-	Independent Regulatory Commission
IWRM	-	Integrated Water Resources Management
JE	-	Junior Engineer
LBS	-	Land Based Sources
M&E	-	Monitoring and Evaluation
MCDA	-	Multi-Criteria Decision Analysis
MEO	-	Monitoring and Evaluation Officer
mn	-	Million
NRW	-	Non-Revenue Water

O&M		Operations and Maintenance
OSF	-	Other Special Fund
PC	-	Project Coordinator
PCR	-	Project Completion Report
PDNA	-	Post Disaster Needs Assessment
PE	-	Project Engineer
PMU	-	Project Management Unit
PP		Project Portfolio
PRO	-	Public Relations Officer
PS	-	Procurement Specialist
PSC	-	Project Steering Committee
PTL	-	Project Team Leader
PWDs		Persons with Disabilities
RAP		Resettlement Action Plan
RE	-	Renewable Energy
SCADA	-	Supervisory Control and Data Acquisition
TA	-	Technical Assistance
TOR	-	Terms of Reference
TS		Tropical Storm
UKCIF	-	United Kingdom Caribbean Infrastructure Partnership Fund
USD	-	United States dollar
WA	-	Water Areas
WATS	-	Water Audit, Cost of Service and Tariff Study
WSA	-	Water and Sewerage Act
WSSP	-	Water Sector Strategic Plan
WTP	-	Water Treatment Plant
WWTP	-	Wastewater Treatment Plant
XCD	-	Eastern Caribbean Dollars

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COUNTRY DATA: COMMONWEALTH OF DOMINICA

MACROECONOMIC INDICATORS

	2016	2017	2018	2019	2020
REAL PER CAPITA INCOME (Constant Prices, USD)	6,399.1	5,789.3	5,820.1	6,266.6	5,248.9
GROSS DOMESTIC PRODUCT					
Constant GDP at 2006 Prices (\$ mn)	1,222.2	1,141.3	1,181.8	1,246.9	1,039.8
GDP at Current Market Prices (\$ mn)	1,555.8	1,408.2	1,497.9	1,651.2	1,361.4
Constant GDP (Annual % Change)	2.8	-6.6	3.6	5.5	-16.6
SECTORAL PRODUCTION AS % OF TOTAL REAL GDP					
Agriculture, Livestock and Forestry	13.0	11.3	8.3	9.4	11.2
Fishing	0.6	0.5	0.5	0.5	0.6
Mining and Quarrying	1.0	1.0	2.1	1.8	0.9
Manufacturing	2.8	2.7	2.7	2.2	2.7
Electricity and Water	6.0	5.0	4.3	5.3	6.6
Construction	5.3	5.5	11.4	9.5	4.8
Wholesale and Retail Trade	12.4	11.5	15.9	15.3	12.7
Hotels and Restaurants	1.8	1.7	1.3	1.4	0.6
Transport, Storage and Communications	13.8	14.3	15.1	13.9	11.1
Financial Intermediation	8.4	9.5	9.5	11.6	14.5
Real Estate, Renting and Business Activities	10.1	9.0	9.2	9.8	11.1
Public Administration	26.8	30.1	22.1	21.5	25.6
MONEY AND PRICES (Annual % Change)					
Consumer Prices (end of period)	0.7	-1.5	4.0	0.1	-0.7
Money Supply (M2)	6.0	18.3	1.4	-6.3	-11.8
Credit to the Private Sector	2.9	-1.6	-1.5	-6.0	2.2
PUBLIC FINANCES (% of GDP)					
Revenues and Grants	50.9	51.9	50.8	41.0	57.2
Expenditures	35.8	49.5	57.5	56.1	56.5
Overall Surplus/ (Deficit)	15.1	2.1	-6.5	-16.0	0.6
Primary Surplus/(Deficit)	16.9	3.5	-4.5	-13.8	2.8
Central Government Debt	64.0	57.4	62.3	72.0	97.1
BALANCE OF PAYMENTS (%GDP)					
Exports of Goods and Services	58.9	59.1	39.8	44.0	32.1
Imports of Goods and Services	66.5	68.0	82.9	80.4	59.7
Current Account Balance	-7.7	-8.9	-43.1	-36.4	-27.5
Foreign Direct Investment Net Inflows	-7.2	-4.3	-14.3	-6.2	n.a.
Estimated Tourism Expenditure (\$ mn)	276.2	203.4	220.6	284.7	79.7
AVERAGE EXCHANGE RATE					
XCD per \$	2.7	2.7	2.7	2.7	2.7

COUNTRY DATA: COMMONWEALTH OF DOMINICA

SOCIAL AND ENVIRONMENTAL DATA

	2016	2017	2018	2019	2020
POPULATION					
Total Population	71,379	67,408	69,573	71,808	73,370
Life expectancy at birth, Total (years)					
All	77.9	78.0	78.1	78.2	n.a.
EDUCATION					
School Enrolment Ratio					
Pre-primary (gross)	79.7	73.7	72.3	71.9	n.a.
Primary (gross)	94.1	89.8	83.9	80.1	n.a.
Secondary (Net)	91.2	91.2	98.1	81.6	n.a.
Pupil-Teacher Ratio					
Primary	13.1	13.4	11.5	11.7	n.a.
Secondary	11.0	11.1	9.2	9.8	n.a.
LABOUR FORCE					
Unemployment Rate (%)	23.0	n.a.	n.a.	n.a.	n.a.
HEALTH					
Current Health Expenditure (% of GDP)	5.2	5.9	5.5	5.5	6.0
HUMAN DEVELOPMENT INDEX	0.729	0.729	0.723	0.724	n.a.
Sources: World Development Indicators. Human Development Report 2019. <i>GOCD, Eastern Caribbean Central Bank.</i> n.a. Not available Data as at October 2020					

PROJECT SUMMARY

Financial Terms and Conditions					
Beneficiary		Government of the Commonwealth of Dominica (GOCD)			
Executing Agency		Dominica Water and Sewerage Company Limited (DOWASCO)			
Disbursement Period		March 1, 2022, to March 31, 2024			
Fund	Fund Source	Amount (000's)	Amortisation Period (years)	Grace Period (years)	Interest Rate (%)
OSF-USD	UKCIF Resources	30,319			
Grant Total:		30,319			
Counterpart Total:		9,217			
Total Project Cost		39,536			
Office of Risk Management (ORM) Commentary					
Not Applicable					
Project Summary					
Project Outcome and Description:					
The expected outcomes of the Project are:					
<ol style="list-style-type: none"> 1. improved efficiency and climate resilience of the water supply and distribution infrastructure; 2. improved water quality and reduced water pollution in the project area of the Jimmit wastewater system; and 3. enhanced operational capacity of DOWASCO to deliver an efficient, reliable supply of potable water to targeted areas and to collect, treat and dispose of wastewater in Jimmit. 					
The Project is categorised “B” based on CDB’s Environmental and Social Review Procedures. There is the potential for limited adverse environmental or social impacts/risks for which mitigation and management measures are known and available.					
The proposed Project consists of the following components:					
<ol style="list-style-type: none"> (i) Project Preparation assistance (ii) Land (iii) Infrastructure Works (iv) Engineering and Construction-related services (v) Goods (vi) Institutional Strengthening (vii) Other Project Support Services (viii) Project Management 					
Exceptions to CDB Policies:					
No exceptions to CDB policies are required for this Project.					

Gender Marker Summary

Analysis	Design	Implementation	Monitoring & Evaluation	Score	Code
1.0	1.0	1.0	1.0	4.0	GM ¹

¹ The Project is GM (gender mainstreamed) when there is the potential to contribute significantly to gender equality.

1. STRATEGIC CONTEXT AND RATIONALE

REQUEST

1.01 By letter dated October 19, 2021, GOCD applied to the Caribbean Development Bank (CDB) for a grant under the United Kingdom Caribbean Infrastructure Partnership Fund (UKCIF) to assist in financing a project for the augmentation and upgrade of five existing water supply networks and the upgrade and expansion of an existing wastewater system (the Project). Approval by the President of a technical assistance (TA) grant (funded from UKCIF resources) for a feasibility study, 'Development of a Water Sector Strategic Plan (WSSP), Feasibility Study and Preparation of Detailed Designs for Selected Interventions - The Commonwealth of Dominica' (the Study) to prepare this capital project was notified to the Board of Directors (BOD) on June 3, 2019 (Paper BD 40/19). The WSSP was completed in two phases, between 2019-2021.

1.02 By letter dated July 26, 2018, the Memorandum of Understanding (MOU) between the Department of International Development (now Foreign, Commonwealth and Development Office [FCDO]) and CDB for the United Kingdom Caribbean Infrastructure Partnership Fund (UKCIF) was amended to provide for the addition of a reconstruction window to be used to finance projects in accordance with CDB's Disaster Risk Management Strategy and Operational Guidelines (DiMSOG) 2009. The reconstruction window was created to respond to emergencies and natural disasters. In light of the devastation caused to Dominica due to the passage of Hurricane Maria in September 2017, a portion of the reconstruction window was allocated to be used for building resilience in the water sector of Dominica. This Project is being funded from the reconstruction window and is therefore appraised under DiMSOG, utilising the guidelines applicable to Reconstruction and Rehabilitation loans.

MACROECONOMIC CONTEXT

1.03 The COVID-19 pandemic and the lockdown measures imposed by Dominica, including the closure of national borders, triggered a collapse in tourist arrivals by 61.1%, which prompted a 56.4% contraction in the hotel and restaurant sector in 2020. The combined effect of the shock to tourism related activities² and other lockdown measures, such as the closure of non-essential services had severe repercussions throughout the economy, which culminated in a 16.6% decline in output and a spike in unemployment. To cushion the economic fallout of the pandemic, a wide range of fiscal and monetary policy support measures were introduced. These interventions included the provision of moratoriums on loan interest and principal repayment, income support to households and a reduction in corporate income tax from 25% to 17% to companies retaining 80% or more staff. The budgetary allocation to the health sector was also increased to bolster the response to the pandemic.

1.04 The effects of the crisis on Dominica's public finances were equally severe. To minimise the concomitant impact of declining revenues and mounting COVID-19 related expenditure on its fiscal accounts, GOCD took corrective measures to reduce spending and create fiscal space in FY2021³. Such measures included the deferral of external interest payments⁴, the conversion of the outstanding balance of one of the Government's overdraft facilities to a lower interest-bearing loan and the rationalisation of recurrent expenditure. Notwithstanding these efforts, GOCD recorded a deficit of 6.9% for FY2020/21, compared with a deficit of 11.1% in FY2019/20, brought about by the lingering effects of Hurricane Maria

² World Travel and Tourism Council estimates that tourism account for 32.6% of gross domestic product (GDP) and 12.6% of employment in Dominica.

³ The fiscal year in Dominica begins on July 1 and ends on June 30 the following year.

⁴ In 2020 Dominica participated in the G-20 Debt Service Suspension Initiative (DSSI), in addition to benefitting from CDB's debt service initiative.

and related reconstruction activity. Total public debt in 2020 rose to 109.1% of gross domestic product (GDP), from 83.1% at the end of 2019, reflecting the considerable contraction in GDP in 2020 and increased borrowing to defray the immediate cost associated with the pandemic (Appendix 1.1).

1.05 Until August 7, 2021, COVID-19 infections in Dominica stood at 218 cases with zero fatalities. The country subsequently experienced a spike in cases and the presence of the more transmissible SARS-CoV-2 delta (B.1.617.2) variant, leading to 4,823 infections and 32 related deaths as of October 31, 2021. The joint effect of the rise in case numbers and the temporary reintroduction of lockdown measures, is expected to moderately dampen the pace at which tourists were projected to return to the island. Nevertheless, CDB anticipates that Dominica's economy will grow by 2.5% in 2021, driven by public sector construction activity and a full return of agriculture production, particularly bananas, to pre-Hurricane Maria levels.

1.06 Access to clean potable water is vital for long-term sustainable development and facilitates the development of productive sectors such as agriculture and tourism. It is also an indispensable resource for food security, and environmental and health preservation, and underpins rural and urban development patterns. Given Dominica's acute vulnerability to repeated climate-related disasters, robust economic infrastructure, particularly water infrastructure, is essential to building economic and social resilience. A resilient and efficiently managed water sector not only lowers the risk of damage in the event of a natural hazard but reduces economic losses by shortening service downtime in the aftermath of disasters. Through its Climate Resilience and Recovery Plan (2020-2030) and the enactment of the Climate Resilience Act (2018), GOCD has signalled its commitment to transforming Dominica into the first climate-resilient nation, with the goal of a more resilient water sector forming a crucial component of the plan. Seventy-seven percent of the Project is funded by grant resources from UKCIF and therefore the Project does not present a significant risk to Dominica's debt sustainability.

SOCIAL CONTEXT

1.07 Dominica's population was estimated at 73,370 persons in 2020⁵. This represents an increase of around 3% over the 71,239 persons reported in the 2011 Census.⁶ The three main population groups are African, European and Kalinago descendants. The country has made human development strides over time and is ranked in the High Human Development Country category on UNDP's Human Development Index (HDI). Between 2000 and 2019, the HDI value increased from 0.703 to 0.742 – a 5.5% increase – due to improvements in education, health and income per capita.⁷

1.08 Notwithstanding these advances, poverty, vulnerability and inequality remain key concerns. The 2009 Country Poverty Assessment reported 28.8% of the population as below the poverty line and 11.5% as economically vulnerable. More recent data simulations captured in a Post Disaster Needs Assessment conducted after Tropical Storm (TS) Erika (2015) estimated a rise in the poverty headcount to 42.8%. The unemployment-poverty nexus is well-established and rising unemployment linked to COVID-19 would have set back important gains in the post-TS Erika period. The Dominica HEAT report (2020)⁸ stated that the unemployment rate was projected to exceed the IMF's post-TS Erika estimates of 23%. Women heads of households, persons in low-income households, persons with disabilities (PWDs), the elderly, children, youth and indigenous people are disproportionately represented among the poor and vulnerable and are likely bearing the brunt of the fallout.

⁵ ECCB.

⁶ GOCD. Population and Housing Census (September 2011).

⁷ UNDP 2020. [Hdr.undp.org/sites/default/files/Country-Profiles/DMA.pdf](https://hdr.undp.org/sites/default/files/Country-Profiles/DMA.pdf)

⁸ Prepared by UNDP, UNICEF and UN WOMEN.

1.09 Safe and readily available water is important for human dignity and sustainable development as recognised in Sustainable Development Goal 6. While over 95% of persons in the 50 communities that stand to benefit from the Project have DOWASCO connections, a number of them report significant water-access challenges. Inadequate water and sanitation services expose individuals to preventable health risks and affect productivity. The burden of inadequate services is felt disproportionately among the poorest and most vulnerable.

1.10 Survey data⁹ confirms that households with limited or no access to potable water, due to shortages or other factors, resort to the rivers or springs. While the research does show that the responsibility for water collection is shared by men and women, water use in the domestic sphere is linked to activities usually associated with women's work with significant time-use implications. In poor households, in particular, where women spend significant amounts of time on household work, the burden of care affects well-being and livelihood opportunities. With female-headed households representing an estimated at 34% of survey respondents, in beneficiary communities, enhanced access has the potential to advance gender equality.

1.11 Issues of water access and quality also affect the business community. The belt of the tourism/hospitality industry is located within Roseau, along the West Coast and in the Roseau Valley. The areas support the usual small businesses, markets, and vendors in built-up areas along with public and private residential and hotel development. In the capital city, the demand for potable water correlates with the highest concentration of businesses and government offices and the presence of the main hospital situated on the outskirts at Goodwill. Addressing water inequality as well as better management of water resources can boost health, productivity and economic growth and contribute to poverty reduction.

SECTOR ISSUES

1.12 **Inadequate Policy, Legal, Regulatory and Institutional Framework for the Water Sector:** The Water and Sewerage Act of 1989 (WSA) governs water resources management and provides for DOWASCO to be the sole national authority for the supply and distribution of potable water, provision of wastewater collection services and management of water resources, through the granting of an exclusive licence. This licence, as it relates to the provision of water service, has expired since 2015 (further discussed at paragraph 4.13). In addition to the WSA, management of Dominica's water resources is captured under several other laws and ordinances (Appendix 1.2.1). DOWASCO currently functions as Dominica's water utility while fulfilling the dual role of providing leadership on water resources management (i.e. acting both as the utility and regulator). This approach neglects the tension between providing water services and managing water resources. To chart a sustainable path and to ensure the development of a climate resilient water sector GOCD commissioned the drafting of a National Integrated Water Resources Management (IWRM) Policy in 2011 and WSSP (2021), which will serve as a roadmap for medium to long-term interventions in the water sector, including water resource management. Despite this progress, the absence of the necessary legal and regulatory framework together with a strong coordination mechanism continues to pose challenges for the sector, which could lead to a decrease in water quality and quantity despite Dominica having sustainable supplies of water resources. Given the shortcomings in the enabling environment around the IWRM Policy over the past 10 years, and to capitalise on the strategic path of WSSP (2021), it is now critical that the necessary supportive overarching legal and regulatory framework be established to ensure the sustainability of the water resources of Dominica.

1.13 **Water and Wastewater Service Delivery:** The majority of Dominica's water supply comes from its surface water sources. DOWASCO operates and maintains 44 water supply systems (Appendix 1.2.2). The total annual production for the 44 water areas (WA) is approximately 11.2 million cubic metres per annum (m³/a) [Water Audit and Cost of Service and Tariff Study (2015/2016) (WATS)]. The systems

⁹ Collected during the ESIA/ESMP process.

currently serve 95% of the population with an annual consumption of 4.4 million m³/a. It is estimated that DOWASCO supplies 85% of the total population on a 24-hour, seven days a week basis. Surface water quality is generally good, especially in the higher elevations. This allows DOWASCO to operate almost all of its systems with disinfection as the sole form of water treatment. A summary analysis of the quality of the available surface water sources is at Appendix 1.2.3. However, during high intensity rainfall events, microbiological contamination and high turbidity remain challenges for Dominica's surface water quality WSSP (2019), resulting in numerous unscheduled shutdowns and disruptions to service delivery, especially for systems in Roseau Valley, the West Coast, the East Coast and Calibishie (Appendix 1.2.4). These challenges were evident in the WA-1 prior to the high level of capital investment undertaken through the CDB-funded Third Water Supply Project to upgrade the intake at Springfield, construct a new intake at Checkhall (completed 2016/2017 and to be commissioned in 2022) and construct a water treatment plant (WTP) at Antrim to reduce the turbidity issues present at Springfield and reduce landslide risk. Since the commissioning of the WTP at Antrim in late 2018, there has been marked improvement to the water quality and reduced number of unscheduled shutdowns to WA-1.

1.14 Centralised wastewater collection and treatment is currently only operated in Roseau, with wastewater being treated at the Bay Town Wastewater Treatment Plant (WWTP) by DOWASCO. Primary treated effluent is disposed to the sea via a submarine outfall. This system presently services 3,300 households and commercial entities in Roseau and nearby communities (20% of the population). Two other sewer systems, which have no wastewater treatment components, and for which the wastewater is directly disposed of into the sea, are operated by DOWASCO in Jimmit and Canefield. Assessed effluent levels at these outfalls reveal non-compliance with acceptable World Health Organisation (WHO) discharge standards. The resulting disposal is having an adverse impact on the water quality of the receiving waters WSSP (2021). These two systems presently serve 6% of the population. The remaining population relies entirely on on-site sanitation systems, mainly septic tanks but also pit latrines (approximately 25% of the households) in some areas. A four-phased housing development project was constructed at Jimmit, within the last 20 years, by the Ministry of Housing. Centralised sewer collection networks were installed to service Phases 1, 2 and 3. However, no centralised network has ever been implemented for Phase 4, where the final solution of individual septic tanks and soak-away systems for each house lot was commissioned. Phases 1 and 2 of the network, which are operated and maintained by DOWASCO, drain towards a communal septic tank and soak away system on the coast, followed by untreated effluent discharge near the seashore. Phase 3 has never become operational, due to challenges in the commission of the system. Phase 3 of the Jimmit system was never accepted by DOWASCO for operation and maintenance. Due to the soil types in the Phase 4 area, the requisite absorption rates to meet WHO Standards have never been achieved.

1.15 **Vulnerability to Climate Change (CC):** CC poses significant risks for the sector. Water supply and wastewater treatment infrastructure are particularly vulnerable to sea level rise, strong winds, landslides and flooding associated with tropical storms and hurricanes as occurred with TS Erika and Hurricane Maria. Rising temperatures and a predicted increase in the occurrence of heat waves will have an impact on the availability of surface water. High temperatures, an additional impact to the operation of the water supply facilities can lead to an increase in bacterial growth, which will also slightly increase the need for disinfection of drinking water. During the dry season, drought can impact seasonal availability of water and water quality, resulting in water scarcity in some intakes, as evident in the East Coast water supply systems, while extreme rainfall events contribute to increased levels of turbidity. High turbidity levels have resulted in adverse impacts on the operational capacity and quality of delivery of the intakes at Providence, Calibishie, Coulibistrie, Grand Fond and Castle Bruce. This challenge is the primary issue currently constraining DOWASCO's ability to consistently provide a reliable source of potable water to the WA.

1.16 Forty-five percent of the water abstraction and supply infrastructure adjacent to waterways sustained significant damage following TS Erika and Hurricane Maria. Many of the WA have been merged

to address damaged intakes, provide redundancy, and improve operational efficiency. In response to the impact of the TS Erika and Hurricane Maria, between 2015 and 2018, DOWASO increased its capital investment by 69% relative to the period 2009 to 2014, to restore damaged systems and enhance the resilience of the water sector. In addition to the increased capital investment, investments in operations and maintenance increased by 33% between 2015 to 2018 (Appendix 1.2.5). While the investments, post Hurricane Maria, have resulted in 35% of the existing WA systems (intakes, storage tanks, water treatment facilities and distribution network) being in good condition, the remaining 65% have temporary fixes and are in need of urgent repair or replacement. There is presently an overall deficit of 6% in water storage capacity for the WA and significant projected (2049) deficits for the WA of Roseau Valley, West Coast, East Coast and Calibishie WA (Appendix 1.2.6). These WA, with the noted water storage deficits, need additional storage to take advantage of the reliable yield, and to ensure that there is sufficient supply of water during the dry season (further discussion on the current condition of water infrastructure and the deficiencies can be found at paragraph 4.02). Operation and maintenance costs of sewerage systems accounted for up to 13% of the overall expenditure of DOWASCO for the period 2015 to 2018. This was primarily due to the rehabilitation measures undertaken at three existing wastewater systems which were extensively damaged during Hurricane Maria. Notwithstanding these efforts, repair and or replacement works are required for the outfalls at Jimmit and Canefield.

1.17 Although DOWASCO's water systems are mainly gravity-fed systems, electricity costs remain a challenge. This expenditure represents approximately 13% of DOWASCO's total operating costs in the absence of low-cost energy alternatives, as there is minimal deployment of renewable energy (RE) and energy efficiency (EE) in the sector. With an abundance of high-water flows at many of the intakes in Dominica, there are opportunities to capitalise on hydropower.

1.18 **Non-Revenue Water (NRW):** High levels of NRW is one of the most pressing issues facing the sector. It is estimated to be approximately 58.5%. WATS 2015 presented an action plan to reduce NRW to a rate of 30% over an implementation period of five years (outlined at Appendix 1.2.7). Considering the numerous challenges currently facing the water sector, namely the recovery efforts following the passage of Hurricane Maria, the COVID-19 pandemic, and the proposed project interventions, the NRW target has been revised to 45% by 2024. DOWASCO has begun implementation of the WATS 2015 action plan with the installation of bulk meters and metering of customers. To further advance implementation, DOWASCO has sought funding from the Green Climate Fund.

COUNTRY SECTOR STRATEGY

1.19 Dominica's goal, as set out in the National Resilience Development Strategy 2030, is to ensure availability and sustainable management of water and sanitation for all. The strategy sets targets for achieving universal and equitable access to safe and affordable drinking water, and to sanitation and hygiene. It also targets increased water-use efficiency across all sectors.

1.20 GOCD's National IWRM Policy (2011) describes government policies to address issues such as climate change adaptation and mitigation, drought, flooding, ensuring safe water supply, water abstraction and allocation, water quality management, and wastewater management.

LINKAGE OF PROJECT TO CDB'S COUNTRY AND SECTOR STRATEGY AND POVERTY GOALS

1.21 The Project is consistent with CDB's Country Engagement Strategy (2020-2024) for Dominica. It is designed to achieve the outcome of improved, climate resilience water supply and wastewater infrastructure.

1.22 The Project is consistent with the purposes and objectives of UKCIF in that it: (a) supports economic growth; (b) supports increased climate resilience; and (c) promotes poverty reduction and strong positive social impacts including gender equality.

1.23 The Project is consistent with the following of CDB's 2020-2024 strategic objectives:

- (a) building social resilience.
- (b) building economic resilience.
- (c) building environmental resilience.

1.24 The Project is consistent with the following of CDB's corporate priorities:

- (a) improving access to safe, reliable and sustainable water and sanitation services.
- (b) increasing the provision of quality, reliable, safe, sustainable and resilient infrastructure.
- (c) increasing resilience and adaptive capacity to disaster risk and CC impacts.

1.25 The Project integrates the following of CDB's cross-cutting themes:

- (a) gender equality.
- (b) environmental sustainability.

1.26 This Project is expected to contribute to the following Sustainable Development Goals (SDGs):

- (a) SDG 6: Clean water and sanitation.
- (b) SDG 9: Industry, innovation and infrastructure.
- (c) SDG 13: Climate action.

1.27 This Project is consistent with the following of CDB's sector and thematic policies:

- (a) Gender Equality Policy and Operational Strategy.
- (b) Energy Sector Policy and Strategy.
- (c) Climate Resilience Strategy.

RATIONALE

1.28 Despite DOWASCO's high level of potable water coverage nationally, there remains the challenge of providing resilient, reliable and cost-effective water and sanitation services to several vulnerable communities. Sixty percent of Dominica's population is serviced by water systems which are deemed as being highly vulnerable to the impacts of CC. Under the WSSP the vulnerable water systems of WA-1 Roseau, Roseau Valley, West Coast, East Coast and Calibishie (Figure 1.1) have been identified as the most critical water systems to the sustained development of Dominica and to support the country's main socio-economic resources and activities. These WA account for 75% of all water consumption on the island.

DOWASCO's operations in these WA have been hampered by deficiencies in the existing treatment process, *viz* in addressing the challenge of turbidity, insufficient storage capacity, high levels of NRW and aged and damaged infrastructure. As a result, customers have been impacted by unscheduled service interruption and an inconsistent supply of water during periods of heavy rainfall. Further, the effects of an increasingly unpredictable and variable climate along with climate hazards have a significant implication for water security and increase risks to both the water and wastewater infrastructure.

1.29 To attain a reliable and equitable access to water, supply and distribution must be increased within the targeted WA. This will require addressing the existing infrastructure challenges that currently prevent efficient and reliable operation of the water systems that serve the prioritised WA. The reduction of water losses plays an important role in the overall sustainability of the system as well as DOWASCO's financial performance (water losses equal revenue losses and higher operation and maintenance costs). It is therefore necessary to actively support DOWASCO in its ongoing NRW reduction programme. To address these challenges, the Project provides for the rehabilitating and upgrading of local networks, safeguarding water sources, installing new pipelines, increased water storage and renovating water treatment plants for the water systems, in the prioritised WA.

1.30 Additionally, to address the high non-compliant pollution levels resulting from the Jimmit wastewater system, the Project provides for the expansion and upgrade of the Jimmit wastewater system. The proposed interventions also provide the opportunity to integrate climate resilience and enhance water security.

1.31 The present water resource management structure is fragmented, with planning, development, conservation, and management of the resource not being undertaken in an integrated and holistic manner. This fragmentation has led to mismanagement of water resources and conflicts in use and allocation. The foregoing issues are compounded by the absence of a responsive governance structure, which would ensure the contribution, coordination, and collaboration of the many interests in the water sector of Dominica. DOWASCO's management systems must be strengthened to enable them to effectively perform an enhanced and focused role, as a utility, in the development of the water sector. To establish a sustainable foundation for addressing this issue the Project will develop a strategic framework for water resources management.

1.32 The Project will result in a greater reliability of piped water and improved sanitation for the population of the targeted WA. Benefits will include improved resilience to CC impacts, new household piped connections, less service interruptions thus reducing economic losses, and improved public health. Moreover, access to clean water and sanitation enhances sustainable livelihoods. DOWASCO will also benefit with lower electricity costs from introducing EE measures and the adoption of RE option.

2. PROJECT DESCRIPTION

PROJECT OUTCOME

2.01 The expected outcomes of the Project are:

1. improved efficiency and climate resilience of the water supply and distribution infrastructure;
2. improved water quality and reduced water pollution in the project area of the Jimmit wastewater system; and
3. enhanced operational capacity of DOWASCO to deliver an efficient, reliable supply of potable water and to collect, treat and dispose of wastewater in Jimmit.

PROJECT COMPONENTS

2.02 The Project will comprise the components listed below, detailed descriptions of which are presented at Appendix 2.1. A Results Monitoring Plan can be found at Appendix 2.3. The Project is provisionally categorised as “B” based on CDB’s Environmental and Social Review Procedures and is likely to result in limited adverse social and environmental impacts which are site specific and effective mitigation measures can be implemented.

- (i) **Project Preparation Assistance:** Consultancy services for the completion of a Feasibility Study, Final Designs and Bid Documents, by the Engineering Consultant (EC) for the development of six water supply systems and two sewer systems (The Study).
- (ii) **Land:** Purchase/acquisition or the grant of easements of 15,424 m² of privately-owned lands to be utilised for the development of the water systems within targeted networks. No resettlement of persons is required. The privately-owned lands identified for acquisition account for lands where the installation of WTP, tanks, pumping station and rights-of-way are required for the prioritised systems. DOWASCO has commenced the acquisition process, with negotiations and compensation of payments scheduled to be completed January and February 2022 respectively (Appendix 2.2.1 - Summary Land Acquisition Plan). DOWASCO will be responsible for the negotiations and compensation of these lands in accordance with GOCD’s Land Acquisition Act Chapter 53:02. Funds have been budgeted by DOWASCO for this purpose. DOWASCO has provided a Letter of Commitment dated November 18, 2021.
- (iii) **Infrastructure Works:** Works to include the construction and/or upgrade, of five water supply systems, in both rural and urban areas, inclusive of water storage tanks, distribution networks, ancillary works, the integration of RE and EE solutions and NRW reduction measures. In addition, one wastewater system will be expanded and upgraded, as set out at Appendix 2.2.2.
- (iv) **Engineering and Construction-related Services:** Consultancy services for the supervision and certification of the infrastructure works by a Construction Supervision Consultant, as set out at Appendix 2.2.3.
- (v) **Goods:** Procurement of three vehicles to support DOWASCO in the execution of the Project. The geographical dispersion of the project sites will require a higher level of

mobility by the PMU in order to facilitate the effective execution of the Project. Additionally, to support the roll out of the institutional strengthening, the procurement of computers and accessories, Geographic Information System (GIS) software, Information Technology (IT) [Customer Billing] Software, and associated training and equipment.

- (vi) **Institutional Strengthening:** Consultancy services for the preparation of a Strategic Framework for Water Resource Management in Dominica, as set out at Appendix 2.2.4.
- (vii) **Other Project Support Services:** Consultancy services for the preparation and implementation of a Gender-responsive and Socially Inclusive Communications Plan, as set out at Appendix 2.2.5.
- (viii) **Project Management:** Strengthening of the existing PMU, DOWASCO. Engagement of a Project Coordinator (PC), Procurement Specialist (PS), Project Engineer (PE), Community Liaison Officer (CLO) and Monitoring and Evaluation Officer (MEO) and the Construction Supervisory Consultant (CSC) in accordance with CDB’s prevailing procurement policy and procedures. The other positions, such as the Environmental Monitoring Officer (EMO), Accounting Officer (AO), Junior Engineer (JE), Public Relations Officer (PRO) and Administrative Assistant (AA) are to be assigned by DOWASCO to support the PMU. Stakeholder Consultations and Workshops to support the implementation of the scope of service of the CLO are to be funded by CDB.

RESULTS FRAMEWORK

Project Impact
This Project will enhance the governance, sustainability, and climate resilience of the water sector in Dominica.

Outcome	Indicator	Baseline	Target	Data Sources, Reporting Mechanisms and Report Frequency
1. Improved efficiency and climate resilience of the targeted water supply and distribution infrastructure.	1.1 Number of households benefiting from improved access to safe water supply (disaggregated by sex of head of household and disaggregated by urban and rural) (#).	0; 9/30/2021	20,924;* 3/31/2024	DOWASCO’s Annual Reports
	1.2 Unplanned (annual) water supply disruptions due to high turbidity (#).	70; 2/28/2021	5; 3/31/2024	DOWASCO’s Annual Reports
	1.3 Turbidity during extreme rainfall events (Nephelometric Turbidity Units) (#).	80; 2/28/2021	5; 3/31/2024	Consultants’ Reports and DOWASCO’s Annual Reports
	1.4 NRW (%)	58.5; 2/1/2021	45; 2/1/2024	DOWASCO/(Annual) Report (TBC)
2. Improved water quality and reduced water pollution in project area of the Jimmit wastewater system.	2.1 Number of households benefiting from improved wastewater treatment (disaggregated by sex of head of household and disaggregated by urban and rural) (#).	354; 9/30/2019	434; 3/31/2024	DOWASCO’s Annual Monitoring Reports

Outcome	Indicator	Baseline	Target	Data Sources, Reporting Mechanisms and Report Frequency
	2.2 Compliance with WHO standards for recreational water quality: <ul style="list-style-type: none"> • Phosphates (2 mg/l) • pH (6-9) • Enterococci (35 CFU/100ml) 	No; 11/11/2021	Yes; 31/3/2024	Consultant's Reports
3. Enhanced operational capacity of DOWASCO to deliver an efficient, reliable supply of potable water to targeted areas and to collect, treat and dispose of wastewater in Jimmit.	3.1 Recommendations of Institutional Assessment adopted by DOWASCO (Yes/No).	No; 11/11/2022	Yes; 3/31/2024	DOWASCO's Annual Monitoring Reports
	3.2 Customer evaluation of consistency, potability and satisfaction of water supply (4-point scale) disaggregated by sex of household head (#).	TBD; 4/28/2022	4; 3/31/2024	DOWASCO's Annual Monitoring Reports and Customer Satisfaction Survey.
Assumptions for achieving outcomes				
1. The rehabilitated water systems efficiently managed and maintained. 2. GOCD accepts and implements recommendation to establish an independent regulatory agency for water. *Households – assume 2.7 inhabitants/household for total beneficiaries of 56,496.				

Output	Indicator	Baseline	Target	Data Sources, Reporting Mechanisms and Report Frequency
1. Water abstraction, storage and distribution systems for targeted water areas expanded and rehabilitated.	1.1 New District Meter Area(s) established (#) <ul style="list-style-type: none"> ▪ Calibishie (1) ▪ Roseau Valley (1) ▪ East Coast (2) ▪ West Coast (1) 	0; 2/28/2021	5; 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
	1.2 Construction of new intakes (#) <ul style="list-style-type: none"> ▪ Roseau Valley (1) ▪ West Coast (1) ▪ East Coast (2) ▪ Calibishie (1) 	0 2/28/2021	5; 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
	1.3 Capacity of 5 WTPs (m ³ /h) <ul style="list-style-type: none"> ▪ West Coast (110) ▪ Calibishie (25) ▪ East Coast (50) ▪ Roseau Valley (80) 	0; 2/28/2021	265; 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
	1.4 Capacity of WTP Storage tanks and Storage Tanks (m ³) <ul style="list-style-type: none"> ▪ West Coast (3,085) ▪ Calibishie (460) ▪ East Coast (2,115) ▪ Roseau Valley (1,380) 	1,660; 2/28/2021	7,040; 12/31/2023	Consultant's Reports and DOWASCO monitoring reports

Output	Indicator	Baseline	Target	Data Sources, Reporting Mechanisms and Report Frequency
	1.5 Supply line (km) <ul style="list-style-type: none"> ▪ Roseau Valley (#km) ▪ Calibishie (#km) ▪ West Coast (#km) ▪ East Coast (#km) 	23.2; 2/28/2021	42.28; 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
2. Supervisory Control and Data Acquisition (SCADA) System operational	2.1 SCADA Monitoring (Yes/No) Roseau WA-1	No 2/28/2021	Yes 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
3. Wastewater System expanded and upgraded at Jimmit	3.1 Number of new house connections in network extension areas installed (#)	0 2/28/2021	180 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
	3.2 Extension and replacement of existing sewer network (km)	2.3 2/28/2021	6.4 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
	3.3 Capacity of central wastewater treatment plant for sewage (m ³ /day)	0 2/28/2021	777 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
	3.4 Sea outfall with HDPE SDR11 PN16 pipe (#)	0 2/28/2021	1 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
4. RE Solutions integrated	4.1 Generating capacity of RE solutions (hydro turbines) (MW) <ul style="list-style-type: none"> ▪ Coulibistrie (0.086) ▪ Caste Bruce (0.06) 	0 2/28/2021	0.15 12/31/2023	Consultant's Reports and DOWASCO monitoring reports
5. Operational capacity and recommendations of Feasibility Study implemented	5.1 Number of employees trained in the use of recommended management of systems and software (disaggregated by sex). (#)	0; 2/28/2021	50; 3/31/2024	Consultant's Reports and DOWASCO's monitoring reports
	5.2 Recommended management systems implemented in DOWASCO (MIS, IT, M&E, Accounting) (Yes/No)	No; 2/28/2021	Yes; 3/31/2024	Consultant's Reports and DOWASCO's monitoring reports
	5.3 Strategic Water Sector Framework accepted by GOCD (Yes/No)	No; 2/28/2021	Yes; 3/31/2024	Consultant's Reports and DOWASCO's (annual) monitoring Reports
	5.4 Gender-responsive and Socially Inclusive Communications Plan developed and implemented (Yes/No)	No; 2/28/2021	Yes; 3/31/2024	Consultant's Report and DOWASCO's (annual) monitoring Reports

Output	Indicator	Baseline	Target	Data Sources, Reporting Mechanisms and Report Frequency
	5.5 Baseline and follow up Customer Survey implemented. Disaggregated by sex of household head (Yes/No)	No; 9/28/2021	Yes; 3/31/2024	Consultant's Reports and DOWASCO's monitoring (annual) Reports
Assumptions for achieving outputs				
No significant adverse weather conditions that prevent or significantly delay implementation.				

LESSONS LEARNT

Description	Project Response
Timely acquisition of lands and payment of compensation to mitigate delays to the commencement of construction and reduce risk of adverse publicity which can result in loss of reputation for CDB/FCDO.	DOWASCO has prepared a Land Acquisition Plan, which has taken into account the market values of the requisite lands to be acquired. This plan has informed the budget allocation of DOWASCO, which will be responsible for the compensation of lands to be acquired.
The need for DOWASCO to ensure that community participation along with continuous beneficiary feedback and the inclusion of gender issues are fully integrated in water and wastewater systems planning and implementation to support the sustainability of the Project.	The Project design and by extension the project cycle is informed by the results of an Environmental and Social Impact Assessment (ESIA), which facilitated community participation, beneficiary feedback and the inclusion of gender issues. Additionally, in the Project response, a Gender-responsive Socially Inclusive Communications plan and framework (including a Customer Satisfaction Survey) is included.
Strong capacity required within the sector, and an appropriate regulatory framework to support the benefits anticipated from the project investment.	A comprehensive programme of institutional strengthening has been drafted under the WSSP. GOCD and DOWASCO have indicated willingness to adopt the recommendations of the programme, with the commencement of the programme being implemented under this Project.
Monitoring and Evaluation (M&E) support is required where limited capacity exists to collect and analyse data to assess project baselines, the contribution of outputs to expected outcomes, and the contribution of outcomes to sectoral and national goals.	The project scope includes an M&E component to address limited capacity identified in the preparation and implementation of previous projects by DOWASCO with assistance from CDB.
A dedicated budget item is required to support the activities of the CLO, throughout the duration of the Project	The project budget includes an allocation to address limited funds required to support the CLO's duties, such as workshops, dissemination of public information and community stakeholder consultations.

3. FINANCING PLAN

FINANCING STRUCTURE AND COSTS

3.01 In March 2016, CDB signed a Memorandum of Understanding (MOU) with the Government of the United Kingdom, acting through the Department for International Development, (now FCDO) for the purpose of financing the UKCIF Programme in an amount of up to three hundred million pounds sterling (£300 mn) by way of grant. By letter of amendment dated July 26, 2018, this amount was increased to three hundred and thirty million pounds sterling (£330 mn). The Programme provides grants to build economic infrastructure in Official Development Assistance-eligible countries in the English-speaking Caribbean, such as the Commonwealth of Dominica.

3.02 The Project, which is estimated to cost \$39.536 mn, will be financed with resources from CDB (allocated from UKCIF resources), as well as resources from GOCD. Final engineering designs and cost estimates were prepared by independent consultants procured by GOCD using CDB UKCIF's grant resources. These estimates were reviewed by GOCD and were found to be consistent with market rates. Estimates for consultancy services associated with engineering services, institutional strengthening and project management support are based on current rates for these types of professional services. Physical contingencies of 10% were applied to infrastructure works, and 5% to engineering and construction-related services, goods, institutional strengthening project management and other project support services components. Price contingencies of 2.5% per annum were applied to cost estimates based on the International Monetary Fund inflation projections. The cost estimates and corresponding contingencies were also reviewed by CDB staff and were found to be acceptable. A summary of the Project Cost, Phasing and Financing Plan is shown in Table 3.1 and a detailed Project Cost, Phasing and Financing Plan is provided at Appendix 3.1.

3.03 The proposed Project will be financed by:

- (a) a grant to GOCD of an amount not exceeding twenty-one million, nine hundred and seventy thousand, one hundred-and ninety-seven-pounds sterling (£21,970,197) (equivalent to approximately thirty million, three hundred and nineteen thousand United States dollars) (\$30.319 mn) from CDB's Special Funds Resources allocated from UKCIF resources, representing 77% of project cost. These resources will finance the cost of infrastructure works, engineering and construction-related services, goods, institutional strengthening, other project support services and project management; and
- (b) counterpart funding of twenty-four million, eight hundred and eighty-six thousand Eastern Caribbean dollars (XCD24.886 mn) (equivalent to nine million, two hundred and seventeen thousand United States dollars) (\$9.217 mn), representing 23% of project costs. The counterpart funding will be used to finance project preparation and land acquisition, as well as to partially finance infrastructure works (via VAT contributions and all indefinable taxes etc.), engineering and construction-related services, institutional strengthening, other project support services and project management.

3.04 The cost estimates are based on exchange rates for the GBP prevailing on September 13, 2021. The price contingencies which are typically based on the projected inflation rate have been augmented to account for potential volatility in the exchange rate. Any escalation in cost above the price contingency provision will be for the account of the beneficiary.

TABLE 3.1: SUMMARY OF PROJECT COSTS AND FINANCING

Components	Totals				
	OSF-USD		Counterpart		Total
	UK CIF Resources	Total	GOCD	DOWASCO	
1. Project Preparation ¹⁰	-	-	2,887,378	-	2,887,378
2. Land	-	-	-	500,000	500,000
3. Infrastructure Works	23,512,575	23,512,575	3,870,972	-	27,383,547
4. Engineering and Construction-related Services	2,209,836	2,209,836	447,563	-	2,657,399
5. Goods	225,964	225,964	-	-	225,964
6. Institutional Strengthening	195,000	195,000	43,750	-	238,750
7. Other Project Support Services	186,400	186,400	47,960	-	234,360
8. Project Management	494,500	494,500	755,740	-	1,250,240
Base Cost	26,824,275	26,824,275	8,053,363	500,000	35,377,638
9. Physical Contingency	2,405,850	2,405,850	429,471	-	2,835,321
10. Price Contingency	1,088,747	1,088,747	219,752	14,592	1,323,091
Total Project Cost	30,318,872	30,318,872	8,702,586	514,592	39,536,050
Total Financing	30,318,872	30,318,872	8,702,586	514,592	39,536,050
Percentage Financing	77%	77%	22%	1%	100%

¹⁰ Funded by a grant under the UKCIF

4. PROJECT VIABILITY

TECHNICAL ANALYSIS

4.01 The WSSP outlines the recommended technical principles and guidelines for the development of robust and resilient water sector infrastructure.

4.02 **Water Supply Systems:** A comprehensive assessment of the water resources availability and the water supply infrastructure and distribution network was completed (Appendix 4.1.1 summarises the condition assessment of key infrastructure and deficiencies of critical systems). Following this assessment, 5 of the 44 existing WA were prioritised using a Disaster Risk Assessment of the WA's vulnerable components and sites. This qualitative risk analysis was undertaken using a highly consultative Multi-Criteria Decision Analysis (MCDA) (Appendix 4.1.2 – Outline of MCDA and Recommended Prioritisation) and applying 4 criteria: infrastructure vulnerability; population; reliability; and economic relevance. Further, a semi-qualitative resilience assessment was completed to examine viable alternatives, to address the most probable risks identified under the qualitative analysis. For each viable alternative operations and maintenance (O&M) costs have been estimated for four main areas: energy; staffing; maintenance; and chemicals (chlorine, coagulant). To complete the assessment, a quantitative risk analysis was conducted to determine the preferred alternative for each prioritised WA. Additionally, a cost and economic analysis of the proposed works was conducted for each prioritised system, to determine the financial feasibility of the preferred alternative. Appendix 4.1.3 summarises the preferred alternative for each of the prioritised WA systems.

4.03 **Wastewater Systems:** For the identification of the prioritised wastewater system, three existing and five proposed wastewater systems were assessed utilising the Disaster Risk Assessment and a water pollution assessment. Through this methodology the wastewater system at Jimmit was prioritised for future capital investment under this project.

4.04 **Infrastructure Prioritisation Framework (IPF):** Due to the limited available budget, final selection of the water supply systems was based on the application of an IPF. The IPF comprises multiple criteria that include technical viability, socio-environmental, climate and financial and economic indicators. Three scenarios were examined under the IPF, with a preferred scenario being agreed upon by DOWASCO. Appendix 4.1.4 summarises the prioritised scenario. As a result of the specific criteria (water supply system biased) used under the IPF, the IPF was not applied to the one prioritised wastewater system at Jimmit.

4.05 **Design Criteria:** Where appropriate, design criteria and technical specifications for the systems have been based on international regulations, standards and protocols (summarised Appendix 4.1.5) but have been adapted to the local conditions of Dominica, to take into account considerations of the CC impacts, as outlined in the Climate Vulnerability and Risk Assessment (CVRA), the findings and recommendations of the site surveys, geotechnical investigations, bathymetric surveys, marine investigations (specific to the outfall proposed for the wastewater system), and the ESIA. Wind speeds up to 170+ miles per hour have been accounted for in the structural design of buildings at the WTP and storage tanks. Mini-turbines and the resulting hydropower have been incorporated to offset the energy consumption required for the WTP and pumping stations. For the water intakes hydraulic design criteria have taken into account the rainfall intensity associated with 1 in 100-year storm frequency return period. The recommended climate change adaptation and mitigation measures, which have informed the design criteria are discussed further at paragraph 4.55. The proposed works will serve to increase climate resilience of the systems to an acceptable level of risk.

4.06 **Demand Analysis:** Both the water supply and wastewater systems have been designed based on a 30-year demand projection, inclusive of current trends and development plans, with the reference year being

2019 (Appendix 4.1.6 – summaries the water demand). Seasonal and daily variations of demand are accounted for by peak factors of 1.25 and 2.5 per day and per hour respectively and NRW as well as other efficiency losses were considered for the water supply systems. For the wastewater system, given the high water consumption, a water consumption return rate of 60% and an hourly peak demand factor of 3.0 have been used.

4.07 The capital works for the five water supply systems have been assessed and designed to enhance reliability and equity within the water sector. The interventions to be implemented in WA-1, will complement and fortify the resilience of the works completed and to be completed by Quarter 2 2022, under the Third Water Supply Project – Water Area-1.

4.08 **Water Transmission and Distribution (inclusive of NRW Solutions):** Improvements to the distribution networks of the prioritised WA will include metering of system input volumes, where all storage tanks will be equipped with bulk meters at the outlets to assess flow measurement in the tank outlet; installation and/or replacement of float valves to control reservoir overflow; establishment of district metering areas (DMA) to allow for a water balance with the consumed water in the area and the identification of leakages; the implementation of pressure zones to address the high pressure challenges within the network; and the installation of the SCADA system to allow DOWASCO to better manage the water systems by controlling valves to balance storage tank levels and facilitate monitoring water quality during the treatment process from a central location. Recommended measures such as these have been derived from a strategic approach to reducing the volume of NRW (WATS 2016 and WSSP 2021).

4.09 **Water Abstraction, Treatment and Storage: Water Intakes (abstraction)** – flow assumptions and the hydrological modelling results of the prioritised intakes were validated where possible with the results of point measurements provided by DOWASCO. Four new intakes are to be constructed for the prioritised WA and one to be rehabilitated at Calibishie. Five new **Water Treatment Plants'** capacities were designed according to the maximum daily demand and have been made equipped with a water storage tank in order to balance the very extreme fluctuation especially in terms of turbidity. To manage the high levels of turbidity rapid filtration systems will be installed, which will address well over 98% of the organic substances, bacteria and turbidity. The flocculation/coagulation/filtration process parameters such as the necessary retention times, chemicals dosing rates, backwash rates, filtration media grain sizes and mixtures (sand, anthracite) and surface loading rates have been chosen such that a proper function and removal rate can be guaranteed. Concerning the chosen disinfection type, consideration has been given to a low CAPEX/OPEX price, high chemical efficacy, uncomplicated/safe handling of the necessary chemical agents as well environmental compatibility. **Water Storage Tanks** – The tanks in prioritised WA are designed for day-to-day operation to balance the difference between production by intakes and WTP and peak water demand as well as to ensure the water supply service by providing a reserve capacity in case of interruption of the water production due to a failure or for maintenance purposes.

4.10 **Renewable and Energy Efficiency Energy Solutions:** The RE solutions specifically include mini-hydropower plants to make use of the elevation difference and to offset the large energy demand required at the pumping stations. The hydro turbines have been sized either to provide the full energy requirement of the pumping station or to take full advantage of the available water flow. Additionally, in all cases where turbines are to be installed, an economically viable business case has been verified. Ram-pumps have been integrated as EE solutions, specifically for the East Coast WA systems, which do not require electrical energy, thus reducing operating expenses.

4.11 **Wastewater System:** At Jimmit wastewater collection and transfer has been designed where possible through gravity sewer, to reduce the need for pumping stations, which can result in high levels of operation and maintenance challenges and to reduce the vulnerability of the system. The capital works will include the rehabilitation and extension of the existing sewer network to connect additional houses in

unsewered streets/areas and extensions required to connect the networks with the planned treatment facility. Works will also include the construction of a pumping station, installation of house connections and the construction of a compact central wastewater treatment plant at Jimmit with an inlet pumping station, which shall also co-treat collected wastewater from the Mahaut area (not under this project). The treated effluent will be discharged via a sea outfall into the Caribbean Sea (Appendix 2.2.1 summarises the designed intervention for both the water and wastewater system).

INSTITUTIONAL ASSESSMENT

4.12 As part of the development of the WSSP, a comprehensive assessment was conducted of key agencies within the sector, including DOWASCO as the water utility. Recommendations made focused on creating an enabling environment, strengthening institutional and organisational capacity, and providing technology and support. The following section provides a high-level summary of the key issues identified, with further details provided at Appendix 4.2.1

4.13 **Governance:** The WSA provides for an extension of the utility's licence by the line ministry. GOCD has informed that this is under active consideration and the renewed license is expected to be in place by the first quarter of 2022. It shall therefore be a condition of the Grant that the licence granted to DOWASCO under the WSA be renewed by December 31, 2022.

4.14 One of the recommendations of the Study is the establishment of an agency to manage water resources, separate and apart from the water utility. The separation of responsibilities is expected to bring greater focus and efficiency within DOWASCO as the water services provider. Other recommendations made by the Study include the adoption of a commercialised statutory authority as the water utility model, with an independent economic regulator. To support the above, TA will be funded under the Project to develop a strategic framework for water resources management for consideration of GOCD and DOWASCO. The objectives of the consultancy include, *inter alia* (i) the review and update of the IWRW Policy (2011) supported by proposed legislation; and (ii) the examination of the suitability of Independent Regulatory Commission and its present mandate to be expanded to that of an independent water resources management unit. The Terms of Reference (TOR) for the consultancy can be found at Appendix 2.2.4.

4.15 The recommendation for the establishment of an internal audit function is being considered by DOWASCO's management and a final recommendation is expected to be submitted for approval to the Board and the Ministry of Public Works and the Digital Economy by June 2022. This unit will offer risk management and evaluate the effectiveness of DOWASCO's internal controls, corporate governance, and accounting processes.

4.16 **Strengthening Institutional and Organisational Capacity:** A new organisation structure has been defined with distinct role allocations per department. The Board of DOWASCO has endorsed the recommended structure and it was agreed that DOWASCO's target organisation should be operational by January 2024 (see Appendix 4.2.2).

4.17 Optimisation of the organisational structure is expected to be achieved via reassignment or redeployment of the existing workforce. To this end, DOWASCO is conducting a competency gap analysis to inform a multiannual capacity building plan. In parallel, DOWASCO is in the process of implementing several measures to address organisational capacity issues, including the redesign of job descriptions to improve consistency among job classes, based on a workflow analysis. It has also commenced cross-training across lower organisational levels to support employee enrichment, job enhancement opportunities and skill redundancy.

4.18 **Technology and Support: Institutional Strengthening:** As DOWASCO seeks to strengthen its efforts towards digitalisation, it is expected to introduce an enterprise management system, the benefits of which include improved technical capabilities and interdepartmental coordination. A common Human Resources Information System will also be implemented covering modules such as human resources administration, digital personnel files, payroll, recruitment, and personnel development.

4.19 The company has also commenced upgrades to its billing and collections systems, which went live at the end of second quarter, 2021. Additionally, the compatibility of the billing system to a modified accounting system is being reviewed to ensure a seamless flow of transactions and to improve the efficiency of financial reporting. These IT upgrades are expected to be fully implemented by second quarter of 2023.

Operational Risk and Performance

4.20 **Insurance:** Given Dominica's proclivity to extreme weather events, it is important that the water utility provide adequate insurance coverage for its assets, to bolster its capacity to restore service to customers in the aftermath of a disaster, and as part of its risk management strategy. DOWASCO is in the process of negotiating insurance for some of its more vulnerable assets under the Caribbean Water Utility Insurance Company, an insurance mutual being developed under a project by the IDB Group. Attempts are being made to link the Caribbean Water Utility Insurance Company with the parametric coverage offered under the Caribbean Catastrophe Risk Insurance Facility, with the hope to have coverage in place by the 2022 Hurricane Season. It shall be a condition of the grant that DOWASCO continues to maintain liability, business disruption and property insurance acceptable to CDB, throughout the life of the Project.

4.21 **Tariff:** Under the WSA, DOWASCO is expected to achieve full cost recovery. Recommendations for tariff adjustments are subject to approval by the line ministry, and the last tariff increase was granted in 2011, without benefit of a detailed cost analysis. In 2020, DOWASCO engaged consultants to perform a cost of service and tariff study, which recommended a significant increase in tariffs for the next four years to fully recover its operating costs. Given the current pandemic and its negative financial impact on customers, the approval of a significant increase in tariffs is unlikely in the near term. Notwithstanding this, GOCD has reiterated its commitment to provide financial support to the utility. Post Hurricane Maria, the Government has made debt service payments on behalf of DOWASCO and has reaffirmed its commitment to these subventions in the future.

FINANCIAL ANALYSIS

4.22 – 4.30

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.

ECONOMIC ANALYSIS

4.31 The analysis assumes that the main quantifiable benefits associated with the Project will be derived from:

- (a) increased water consumption;
- (b) reduced operating and maintenance costs; and
- (c) a reduction in the level of NRW.

4.32 The Project is expected to increase availability of piped water in targeted areas leading to an additional 16,200 new household piped connections over a 30-year period, as well as the ability to satisfy unmet demand. The construction of additional storage tanks (with an additional 7,030 m³ of storage capacity) will facilitate longer periods of uninterrupted service with fewer unplanned outages in the case of weather events. This in turn will lead to higher sales volumes for DOWASCO. Due to significant interconnectivity of water systems along the West Coast, it is assumed that the upgrades in the target areas would produce indirect benefits and improve water availability in surrounding geographical areas.

4.33 The introduction of a hydro-powered pumping station in the Coulibistrie area promotes energy efficiency and is expected to benefit DOWASCO in terms of lower operating and maintenance costs through a reduction in electricity costs, which currently represent approximately 13% of DOWASCO's total operating costs. The reduction in water outages also reduces the need for mobilisation of water truck service to these areas, resulting in annual estimated cost savings of XCD225,000 to the utility.

4.34 The proposed improvements in the distribution system through meterisation and leak detection programmes, as well as the replacement of outdated pipelines in the distribution network, are expected to decrease NRW in the Project areas. It is estimated that as a result of the Project, the level of NRW will be reduced from 58.3% to 45% by the end of 2023, resulting in reduced annual operating costs.

4.35 Additionally, the installation of new district meters will allow DOWASCO to better assess its production losses. This will not only contribute to a reduction in the level of NRW but will also result in a reduction in apparent (commercial) losses due to unauthorised consumption and customer metering inaccuracies, resulting in increased billed consumption volumes and revenues.

4.36 **Incremental Economic Rate of Return:** Based on the calculated benefits and costs, the Project is expected to generate an economic return of 10%. The assumptions underlying the economic analysis and the calculations are provided at Appendix 4.4.1. This return is acceptable within the context of a rural water system which typically yields significant non-quantifiable benefits (discussed below). Further, the 10% return is considered reasonable given the general low-interest environment that currently obtains.

4.37 Additionally, the Project is expected to yield significant benefits that have not been quantified. These include:

- (a) **Improved access to safe water:** Access to reliable and affordable potable water within the vulnerable target communities under the Project is expected to yield significant health benefits such as reduced incidences of water borne diseases such as Acute Gastro Enteritis and the associated medical costs.
- (b) **Time savings:** In several communities, women and children hold a prominent role in fulfilling crucial household activities, which include the preparation of food, as well as washing, cleaning, and other related activities. Given the significant time commitment in sourcing and storing the necessary water to complete these activities, it is expected that the provision of upgraded water systems under the Project will result in time savings that could be utilised on other productive activities. Additionally, the development of more resilient infrastructure will enable quicker post-disaster restoration of service. It is expected that the number of days to restore supply due to unplanned disruptions would decrease from 7 to 5 days. The unplanned percentage of water supply disruptions due to high turbidity is also expected to decrease from 70% to 5%.
- (c) **Increased economic growth prospects:** The provision of reliable and potable water to the target communities under the Project supports individuals' ability to contribute to

household income and livelihoods, thus promoting urban, peri-urban and rural development and economic growth. This is particularly so in the Calibishie area, where the farmers would benefit from a restored irrigation distribution system. The Project is also expected to lead to the creation of jobs in construction in the near term.

- (d) **Integration of renewable energy and energy efficiency solutions:** The reduction in electricity costs will result in savings in diesel fuel consumption, as well as an estimated 654 tonnes of avoided CO₂ emissions annually.

4.38 In providing the above additional benefits, the Project is consistent with government priorities regarding national resilience within the water sector. Furthermore, it is critical to GOCD's desire to improve water security by providing a safe and reliable water supply to these underserved communities. As a result, it is expected that the Project will contribute to the overall economic and social development of Dominica.

MACROECONOMIC IMPACT

4.39 The commencement of the Project is occurring at a time when Dominica continues to be severely impacted by the intertwined health, social and economic consequences of the COVID-19 pandemic. This confluence of factors led to the loss of lives and livelihoods and a narrowing of the fiscal space that is likely to persist. In the short term, the construction of the new system will provide local employment and spill over benefits. Once operational, improved water and sewerage will give a needed boost to economic development. Increased water availability will support the agriculture sector, which contributes about 10% to GDP and provide employment, income, and food security, especially in rural areas. Specifically, the Calibishie Water intervention will also complement the Government's thrust towards increasing the hotel room stock and improving air connectivity to the island through the construction of the new Dominica International Airport.

4.40 Additionally, the Project will enhance Dominica's potential to export water to other water-stressed Caribbean countries. The intervention is also timely, as it affords the GOCD the opportunity to continue pursuing its climate resilience mandate during the pandemic period, which is characterised by a deterioration in the fiscal and debt position of Dominica. This, therefore, provides GOCD with the fiscal room to respond to the evolving demands of the COVID-19 pandemic.

SOCIAL AND GENDER IMPACT ASSESSMENT

4.41 The Project affects approximately 56,496 persons¹¹ (Appendix 4.5.1). The communities in the prioritised WA already have almost universal access to potable water but increasing incidences of turbidity have resulted in frequent interruptions in the supply and the increased potential for reduced water quality. In effecting the proposed improvements, the Project will provide a more reliable water supply system that will also enhance public health, convenience and provide more dependable infrastructure to support the agriculture and tourism sectors and other related areas of socio-economic development. It will also reduce the burden for the collection and storage of water during long supply interruptions, particularly for those residing in the more rural sections of the Project area. Reduced turbidity, associated with enhanced quality water supply, will alleviate the burden of care and time of women and children associated with cleaning and washing in the household. This in turn, increases the opportunities for women to engage in productive and leisure activities. After the natural hazards in 2015 and 2017, when the water supply was restricted, it was observed that many women in Dominica turned to the rivers to conduct household washing. Accordingly, the expected reduction in the response time for the restoration of unplanned disruptions by DOWASCO will eliminate these time-consuming inconveniences. Other vulnerable groups, including the elderly and PWDs who struggle to fetch water or are forced to go without, will benefit significantly.

4.42 Improved access to water and appropriate sanitation facilities will promote children's participation in education, through reduced school closures (especially in the absence of water tanks on schools' compounds); economic and other community activities outside of the home. The Project will have a positive impact on the livelihoods of men and women through job creation and income generation. In the informal food sector, where women are more represented in the work force, street vendors of consumables would be able to meet public health and safety guidelines through reliable access to a clean water source, in accordance with the Environmental Health Services (Food Hygiene) Regulations Section 9 (1) to (4) which are applicable to all food premises throughout Dominica.

4.43 Agriculture productivity will increase with the greater availability of water. Two major agricultural producing communities – Castle Bruce and Calibishie, will benefit from proposed irrigation systems. A water system which is reliable will also redound to the benefit of the tourism/hospitality sector.

4.44 In some communities, especially on the West Coast, there are houses located in close proximity to the road where the transmission lines will be constructed. This will impact direct access by homeowners to their homes and will be an encroachment on private land in these communities. The significance of this, however, will be minor with mitigation measures.

4.45 Construction activities relating to the distribution and supply lines, and roads and footpaths to the new intakes will result in some inconvenience and possible disruption of farming activities. These impacts are not expected to be major and appropriate measures are incorporated in the mitigation and monitoring plans of the Project, to keep the farmers and other stakeholders informed at all stages of Project implementation and to mitigate the potential adverse consequences. To the extent that the associated construction works are labour intensive and associated with a non-traditional industry, the temporary job opportunities created will be taken up by mostly men. Due to the influx of workers in communities adjacent to project sites, there is the risk of sexual harassment, transactional and commercial sex and the associated adverse impact on the social fabric of the society and health and well-being. Mitigation measures include gender sensitisation for construction personnel and establishment of a grievance mechanism to include the wider community residents.

4.46 A Resettlement Action Plan (RAP), expanding on the existing land acquisition framework, will be prepared, by DOWASCO in consultation with the Ministry of Housing and Lands. The RAP will also make provision for any other displacement as identified in the final ESIA. The RAP is to be disseminated for public consultation and will be publicly disclosed once accepted by the Borrower and granted CDB's No Objection. It shall be a condition precedent to disbursement for infrastructure works for each project site that DOWASCO provide evidence acceptable to CDB that the lands required for project shall have been vested in DOWASCO or GOCD, free of encumbrances, covenants, conditions, and stipulations or that arrangements acceptable to CDB have been made for the entry by DOWASCO into and/or use possession of such lands for the Project, and the RAP is developed and implemented in a manner acceptable to CDB.

4.47 In management, construction and maintenance, the water sector is traditionally male oriented. Within DOWASCO, the staff component at the decision-making levels is well balanced in terms of sex. The application of the Gender Responsive and Socially Inclusive Communication Plan will inform staff on the differential impacts on women and men consumers and promote best practice for collecting information and engaging with all stakeholders through meaningful consultation thus ensuring that the needs and interests of women and men consumers are considered and addressed.

4.48 The Project is rated as Gender Mainstreamed. (See Appendix 4.5.2 for details on the Gender Marker). The Gender Action Plan is at Appendix 4.5.3.

ENVIRONMENTAL ASSESSMENT

4.49 The water project sites are not located within protected areas except for the Calibishie intake situated in the Northern Forest Reserve. DOWASCO will coordinate with the Forestry, Wildlife and Parks Division to implement mitigation measures for works at Calibishie to comply with the Forests Act 1991. The receiving waters of the Jimmit WWTP outfall are not ecologically sensitive, however, the waters within 30m of the shoreline are used occasionally for recreation and are therefore categorised as Class I waters, in accordance with the Pollution from Land Based Sources (LBS) and Activities Protocol which will be applied to the monitoring and treatment of the effluent.

4.50 The key construction environmental impacts include soil erosion and sedimentation; solid waste accumulation; disturbance of habitats and biodiversity; noise and dust; water and sewage services disruption; increased traffic; and worker and community health and safety risks. During operations key impacts include environmental contamination from chemicals, and reduced streams discharge due to water extraction. Potential impacts of the wastewater system are pollution, generation of odours and occupational health and safety risks.

4.51 Risks and impacts will be addressed through mitigation measures detailed in site-specific Environmental and Social Management Plans (ESMP). DOWASCO and the supervising consultants will monitor the contractor's operations for compliance with mitigation measures stipulated in the ESMP. DOWASCO conducts regular water and wastewater quality monitoring in conjunction with the Department of Environmental Health Services and will ensure compliance with the standards outlined at Appendix 4.1.5. The commissioning of a second laboratory in December 2021 will increase DOWASCO's capacity to monitor water and wastewater quality. DOWASCO will also implement an operations and maintenance plan, inclusive of health and safety measures, that will be developed by the Consultant. The Beneficiary shall by December 31, 2023, or such later date as the Bank may agree, implement the recommendations of WSSP – Management and Operations of the systems.

4.52 As a condition precedent to infrastructure works on each contract, DOWASCO is required to submit to CDB, evidence of receipt of all the required permits from the relevant authorities.

CLIMATE VULNERABILITY AND RISK ASSESSMENT

4.53 Projected CC impacts for Dominica include a high likelihood of increased intensity of tropical storms; an increase in average atmospheric temperature in line with global projections; increased variability in average annual rainfall; increased sea surface temperatures; rising sea levels and associated risk of storm surge. CC considerations will therefore be integrated into final designs to ensure resilience and sustainability of the water and wastewater systems.

4.54 The CVRA examined the potential impact on the prioritised infrastructure from extreme climate related events at each sub-project site. The main hazards of concern for the water systems are winds (associated with tropical cyclones), which threaten above ground structures and can lead to power outages due to failure in the electrical grid, affecting water treatment and supply; floods which could increase turbidity and affect water supply intakes and pipelines; and landslides which occur frequently in the higher lying areas and could damage water supply intakes and distribution pipelines. For the wastewater system, power failure could lead to overflow discharge of sewage into the sea, increasing nutrient and pollutant levels, and floods/storm surge could impact the WWTP near the coast.

4.55 CC adaptation and mitigation measures (summarised at Appendix 4.6.1) were identified and costed and informed the designs of the prioritised water systems and wastewater system. The estimated climate financing for the Project is shown in Table 4.2. DOWASCO will continue to update and

implement its Continuity of Operations Plan and Disaster Action Plan 2019 to assist in disaster preparedness, planning and response. The operations and maintenance plan will include a contingency plan for emergencies.

TABLE 4.2 CLIMATE FINANCE - ADAPTATION AND MITIGATION COST ESTIMATES

FUNDING	USD
OSF	30,318,872
CDB Approved Amount (US\$)	30,318,872
Counterpart Financing	9,217,178
Co-financing	0
Total Cost of the Project (US\$)	39,536,050

CLIMATE FINANCE ESTIMATE (USD)				
Fund	CF Amount	CF %	Mitigation %	Adaptation %
OSF	7,552,900	25	6	19
CDB Climate Finance (US\$)	7,552,900	25	6	19
<i>CDB Climate Finance (as %)</i>	25%			

PAS GENERAL COMMENTARY

4.56 The Project performance is anticipated to be highly satisfactory, as shown in the table below.

PAS TABLE

Criteria	Score	Justification
Relevance	Highly Satisfactory	The Project contributes significantly to the achievement of GOCD’s National Resilience Development Strategy (NRDS 2030) and Sustainable Development Goal No. 6. Specifically, the Project contributes towards realisation of the long-term goals and targets for the sustainable management of water and sanitation for all and protect, restore, and promote a sustainable use of terrestrial eco-systems in Dominica and IWRM Policy 2011. The Project is also in alignment with the CES, the Strategic Plan of CDB and the objectives of the UKCIF.
Effectiveness	Highly Satisfactory	The Project is highly likely to achieve its outcomes of increased water security and improved sanitation in the prioritised WA and contribution to sustainable livelihoods. Further, the implementation of the key recommendations of the institutional assessment, the Feasibility Study, and the institutional strengthening components, are expected to make a significant impact on the operational efficiency of DOWASCO.
Efficiency	Satisfactory	The Project is justified primarily based on socio-economic benefits. A cost-benefit approach is being used to formulate designs for the capital works components.
Sustainability	Satisfactory	The implementation of institutional reforms, to be recommended from the assessments, to ensure adequate financing and execution of water supply system maintenance activities will be required to secure sustainability of net benefits. Additionally, it is likely that the social and economic development which occurs as a direct result of the Project will contribute to the sustainability of some of the Project's benefits, inclusive of climate resilient infrastructure. The Project has been designed to provide a maintenance and operations plan, including cost and budgeting, for the systems to support and guide DOWASCO in the management and operation of the systems. Also, the Project will support institutional strengthening and the sustainability of the Water Sector with the drafting of a strategic framework for water resource management in Dominica.
Overall Score	Highly Satisfactory	

5. RISK ASSESSMENT AND MITIGATION

RISK JUSTIFICATION

5.01 A summary of key risks that may impact the Project is outlined in Table 5.1

TABLE 5.1: SUMMARY OF RISKS ASSESSMENT AND MITIGATION MEASURES

Risk Category	Risk Type	Description of Risk	Mitigation Measures
Financial	Cost increase	Inadequate financing due to the depreciation of exchange rate, heightened inflation and cost variations occurring since the outbreak of COVID-19 pandemic and the resulting financial measures, or those caused by potential climate events which may result in	Assessment of contractor's capacity to obtain appropriate materials during negotiations and early engagement with contractors to assess material supply. The financial contingencies and budgetary allocation of the Project have taken into account the possibility of these price increases.
Operational	COVID-19 restriction risk	Delays as a result of restrictions due to the COVID-19 pandemic	The Project assumes implementation under the current partly restricted environment. Should that environment worsen, the financial contingencies, budgetary allocation and slack in the schedule provides some room for completion within the desired timelines. Contractor to submit and maintain a COVID-19 pandemic management plan under their Environmental Health and Safety Standards (ESHS).
Developmental/ Financial	Disaster Risk	A natural disaster (climate or geological) could cause loss or damage to project assets, result in implementation delays, cause loss of revenues to the implementing agency, and change the priority of the government and the implementing agency.	Contractor to submit and maintain Extreme weather management plan under their ESHS. Project designs have made provision for climate change and reducing risk from natural hazards.

6. IMPLEMENTATION AND PROJECT MANAGEMENT

BENEFICIARY

6.01 The Beneficiary is GOCD. GOCD has the legal capacity to accept the Grant and carry out the Project on the terms and conditions as set out in Chapter 7

EXECUTING AGENCY ANALYSIS

6.02 **Legal Status:** The Project will be executed by DOWASCO through the PMU. DOWASCO has the capacity to execute the Project on behalf of GOCD. Further details of the legal status of DOWASCO are set out in Appendix 6.1. The PMU was established by DOWASCO in 2013 to support the execution of the Third Water Supply Project, funded by CDB. This project is scheduled to be completed Q2 2024. The present PMU comprises a Project Coordinator (PC), Project Engineer (PE) and Administrative Assistant (AA).

6.03 Whilst CDB staff are satisfied that DOWASCO has the technical knowledge and experience to execute the Project, a preliminary assessment of the PMU conducted by CDB staff concluded that the organisational structure and technical capacity of the PMU could not effectively support the efficient implementation of their present projects and that of the proposed project to be funded by CDB. The proposed strengthening of the PMU is expected to streamline the Project implementation and management functions within DOWASCO, leading to improved efficiencies in project implementation.

PROJECT MANAGEMENT

6.04 DOWASCO will be responsible for the planning and implementation of the Project through the PMU (Organisational Chart Appendix 6.2.1). The PMU will comprise a Project Team Leader (PTL), PC, PE, PS, MEO, EMO, CLO, AO, JE, PRO, AA and the CSC (duties, responsibilities, qualifications and experience are set out at Appendices 6.2.2 to 6.2.10, respectively). The resources for the functioning of the PMU will be financed by CDB and GOCD. The PMU will be managed by the PTL, which will be assigned from DOWASCO.

6.05 The PC will report to PTL. GOCD has established a Project Steering Committee (PSC) September 27, 2021, it will be condition of the Grant that the PSC remains in place for the duration of the Project. It will be a condition precedent to first disbursement of the Grant that the PTL be assigned (duties and responsibilities of the PSC is set out at Appendix 6.2.11). It will be a condition precedent to disbursement in respect of the engineering and construction related services that a PC be engaged. It will a condition precedent to disbursement in respect of the infrastructure works that the PE, PS, MEO and the CLO be engaged and the EMO, AO, PRO, JE and AA be assigned to support the PMU. The PMU's proposed budget is set out at Appendix 6.2.12. The proposed project management arrangements will benefit DOWASCO through knowledge transfer between the project implementation professionals and DOWASCO's operational professionals.

6.06 GOCD has requested that the EC engaged under the Study be engaged as CSC for the Project and financed from the Grant. It will be a condition precedent to disbursement in respect of infrastructure works that the CSC be engaged accordingly.

IMPLEMENTATION

6.07 The capital works for the five water supply systems and wastewater system of the Project are projected to be implemented over a period of 22 months (excluding the defects liability period of

12 months). Construction of these components will commence in the beginning of the second quarter of 2022. Prequalification of contractors has commenced, and the bid phase is expected to commence in December 2021. The Project Implementation Schedule is set out in Appendix 6.3.1.

PARTICIPATION OF BENEFICIARIES AND STAKEHOLDERS

6.08 Throughout the project cycle, continuous community stakeholder engagement, in the identified WA communities, is critical to securing local ownership and the sustainability of the Project. A “Community Oversight Committee” (COC), comprising three persons identified by the Community Council of each district, will be set up to serve as liaison between DOWASCO and the respective WA communities during the implementation of the Project. A Gender Responsive and Socially Inclusive Communication Plan will be drafted and executed with the support of the Communication Consultant, CLO, PRO and the respective COCs. Additionally, inclusive and gender-responsive public stakeholder consultations are to be conducted on the proposed designs, plans and works prior to their execution. The establishment of COC will be a condition precedent to disbursement with respect to the infrastructure works component. The TOR for COC is presented at Appendix 6.4.1.

DISBURSEMENT

6.09 Disbursement of the Grant will be made in accordance with CDB’s Disbursement Guidelines (January 1, 2019). It is expected that the first disbursement of the Grant will be made by March 1, 2022. The Grant is expected to be fully disbursed by March 31, 2024. An Estimated Quarterly Disbursement Schedule is presented at Appendix 6.5.1.

PROCUREMENT

6.10 Procurement will be undertaken in accordance with the Procurement Policy for Projects Financed by CDB (November 2019) and the Procurement Procedures for Projects Financed by CDB (January 2021). The Procurement Plan is provided at Appendix 6.6.1. The CSC shall be contracted using the Direct Selection method to reflect the natural continuation of their existing functions from the Study, which informed this project, as allowed for under paragraph 8.22 (b) of CDB's aforementioned procurement procedures. The PC and PE shall be contracted using the Direct Selection method to reflect the natural continuation of their existing functions within the PMU, which has managed the CDB funded Third Water Supply Project, as allowed for under paragraph 8.22 (b) of CDB's aforementioned procurement procedures. The CSC, PC and PE were previously selected in accordance with CDB's procurement procedures.

MAINTENANCE

6.11 It shall be a condition of the Grant that GOCD keep the works and other infrastructure financed under the Project, or cause the same to be kept, in good repair and condition and provide the financial and other resources required to adequately maintain the infrastructure financed under the Project. In particular, for the first five years after project completion and, no later than December 31 in each year, GOCD shall provide CDB with a maintenance report of the Project, taking into account the Operations and Maintenance Plan. Thereafter, after every five years GOCD shall provide detailed maintenance report for a period of 15 years.

MONITORING AND REPORTING

6.12 It will be a condition of the Grant that GOCD shall furnish, or cause to be furnished to CDB, the reports listed in Appendices 6.7.1 and 6.7.2 to this Report, in such form or forms as CDB may require, not later than the times specified therein for so doing.

7. TERMS AND CONDITIONS

7.01 It is proposed that the Grant be made on CDB’s standard terms and conditions and on the following terms and conditions:

No.	Subject	Terms and Conditions of the Grant
1.	Parties	<p><u>Bank</u>: Caribbean Development Bank (CDB)</p> <p><u>Beneficiary</u>: Government of the Commonwealth of Dominica (GOCD)</p> <p><u>Executing Agency</u>: Dominica Water and Sewerage Company Limited (DOWASCO)</p>
2.	Amount of Grant	The Bank agrees to make available to the Beneficiary by way of grant, an amount not exceeding twenty-one million, nine hundred and seventy thousand, one hundred and ninety-seven Pounds Sterling (GBP21,970,197) from the Special Funds Resources (SFR) of the Bank allocated from the UKCIF Resources (the Grant).
3.	Purpose	The purpose for which the Grant is being made is to assist the Beneficiary in financing the enhancement of the climate resilience of water supply and distribution infrastructure and a wastewater system, as well as enhancing operational capacity of the Dominica Water and Sewerage Company Limited to deliver an efficient, reliable supply of potable water to targeted areas and to collect, treat and dispose of wastewater (the Project).
4.	Disbursement of Grant	<p>Except as the Bank may otherwise agree:</p> <ul style="list-style-type: none"> (a) disbursement of the Grant shall be used to finance the components of the Project allocated for financing by the Bank as shown in the Financing Plan for the Project up to the respective limits specified therein; (b) total disbursements shall not exceed, in the aggregate, seventy-seven percent (77%) of the cost of the Project; and (c) the Grant shall not be used to finance, directly or indirectly, any part of the cost of the Project which consists of identifiable Taxes imposed under the laws of the Project Country. <p>The Beneficiary and the Executing Agency shall comply with the Bank’s “<i>Disbursement Guidelines for CDB-Financed Projects</i>” published in January 2019, which may be amended from time to time by the Bank.</p>
5.	Period of Disbursement	<p>The Bank shall have received an application for first disbursement of the Grant by March 1, 2022, or such later date as may be specified in writing by the Bank.</p> <p>The Grant shall be disbursed up to March 31, 2024, or such later date as may be specified in writing by the Bank.</p>

No.	Subject	Terms and Conditions of the Grant
6.	Procurement	<p>Procurement of goods, works and/or services to be financed from the Grant resources shall be in accordance with the following policy and procedures or such other policy or procedures as the Bank may from time to time specify in writing:</p> <p><i>Procurement Policy for Projects Financed by CDB (November 2019)</i></p> <p><i>Procurement Procedures for Projects Financed by CDB (January 2021)</i></p> <p>The Beneficiary and the Executing Agency shall comply with the procurement requirements set out in the Procurement Plan. Any revisions to the Procurement Plan shall require the Bank's prior approval in writing.</p>
7.	Additional Condition(s) Precedent to First Disbursement	<p>The Bank shall not be obliged to make the first disbursement of the Grant until the Beneficiary and/or the Executing Agency has furnished or caused to be furnished to the Bank:</p> <ul style="list-style-type: none"> (i) evidence acceptable to the Bank that a PTL has been assigned; and (ii) one or more opinions, satisfactory to the Bank, of a legal practitioner, acceptable to the Bank, confirming that: <ul style="list-style-type: none"> (aa) the Borrower and the Executing Agency have complied with all the necessary requirements under the Constitution of the Project Country and under the laws and regulations in force in the Project Country in order to enter into the Grant Agreement; (bb) the Grant Agreement has been duly authorised by and executed and delivered on behalf of the Borrower and the Executing Agency and constitutes a valid and legally binding obligation in accordance with all of its terms; (cc) the Executing Agency is legally established and has the legal capacity to contract the obligations assumed in the Grant Agreement and to fully execute the Project; and (dd) the Executing Agency has not undergone any material adverse change since the date of the Grant Agreement.
8.	Conditions Precedent to Disbursement in respect of the Infrastructure Works	<p>The Bank shall not be obliged to disburse any amount of the Grant in respect of the Infrastructure Works until the Executing Agency has furnished or caused to be furnished to the Bank evidence acceptable to the Bank that the following conditions have been satisfied:</p> <ul style="list-style-type: none"> (i) The lands required to carry out the Project have been vested

No.	Subject	Terms and Conditions of the Grant
		<p>in the Executing Agency or the Beneficiary, free from all encumbrances and without covenants, stipulations or conditions which may adversely affect the Project, or alternatively that the Executing Agency or the Beneficiary has made arrangements satisfactory to the Bank to enter into possession of or acquire the relevant rights over such lands for the purpose of the Project.</p> <p>(ii) The RAP has been developed and implemented in a manner acceptable to the Bank.</p> <p>(iii) The Beneficiary has received all requisite statutory, planning, building, environmental and health permits, licences and/or other approvals in respect of the Infrastructure Works.</p> <p>(iv) The PE, PS, MEO and CLO have been engaged.</p> <p>(v) The Executing Agency has assigned the EMO, AO, PRO, JE and AA to the PMU.</p> <p>(vi) The Executing Agency has engaged a person to provide the services set out in the TOR for the Construction Supervision Consultant.</p> <p>(vii) The COC has been established.</p>
9.	Conditions Precedent to Disbursement in respect of the Engineering and Construction Related Services	<p>The Bank shall not be obliged to disburse any amount of the Grant in respect of the Engineering and Construction Related Services until the Executing Agency has furnished or caused to be furnished to the Bank evidence acceptable to the Bank that the following conditions have been satisfied:</p> <p>(i) The Executing Agency has engaged as PC to provide the services set out in the TOR for the Project Coordinator – Project Management Unit</p>
10.	Project Execution	<p>Except as the Bank may otherwise agree, the Beneficiary shall execute the Project through the Executing Agency.</p>
11.	Project Management	<p>The Executing Agency shall for the duration of the Project, maintain the PMU, with the composition and functions described in under Project Management in the Detailed Project Component Description.</p> <p>The Executing Agency shall assign as PTL a person from within the staff of the Executing Agency, with qualifications and experience acceptable to the Bank, to carry out the duties and responsibilities set out in the Duties and Responsibilities – Project Team Leader – Project Management Unit.</p> <p>The Executing Agency shall, for the duration of the Project, maintain a PSC with the composition and functions described in the Roles and</p>

No.	Subject	Terms and Conditions of the Grant
		<p>Responsibility of the Project Steering Committee.</p> <p>The Executing Agency shall assign as EMO, AO, JE, PRO and AA persons with qualifications and experience acceptable to the Bank, to carry out the duties and responsibilities set out in the TOR for Environmental Monitoring Officer – Project Management Unit; the Duties and Responsibilities – Accounting Officer; and the Qualification and Experience of Junior Engineer, Public Relations Officer and Administrative Assistant.</p> <p>The qualifications and experience of any person subsequently assigned to the positions of PTL, EMO, AO, JE, PRO and AA shall be acceptable to the Bank.</p> <p>The Executing Agency shall, with the procurement procedures applicable to the Grant engage the PE, PC, PS, MEO, CLO and CSC to carry out the duties and responsibilities set out in the TORs for Project Coordinator, Project Coordinator – Project Management Unit; Procurement Specialist – Project Management Unit; Monitoring and Evaluation Officer – Project Management Unit; Community Liaison Officer; and Construction Supervision Consultant.</p>
12.	Engagement of Consultant(s)	<p>The Beneficiary shall, in accordance with the procurement policy and procedures applicable to the Grant, select and engage consultants to provide the following consultancy services:</p> <ul style="list-style-type: none"> (i) Construction Supervision – Dominica Water Sector Strategic Project; (ii) Strategic Framework for Water Resource Management in Dominica; and (iii) Development of a Gender-Responsive and Socially Inclusive Communications Plan <p>(the Consultancy Services).</p> <p>The Beneficiary shall, within a timeframe acceptable to the Bank, implement such recommendations arising from the Consultancy Services, as may be acceptable to the Bank.</p>
13.	Engagement of Contractors	<p>The Beneficiary shall, in accordance with the procurement policy and procedures applicable to the Grant, select and engage contractors to carry out the works to be financed by the Grant.</p>
14.	Beneficiary’s Contribution to the Project	<p>The Beneficiary shall contribute to the Project an amount of not less than twenty-four million, eight hundred and eighty-six thousand Eastern Caribbean dollars (XCD24,886,000), which shall be expended in a timely manner on the components of the Project designated for financing by the Beneficiary as shown in the Project Cost, Phasing and Financing Plan of the Project, unless the Bank shall otherwise specify in writing.</p>

No.	Subject	Terms and Conditions of the Grant
15.	Other Condition(s)	<p>The Beneficiary shall by December 31, 2022, or such later date as the Bank may agree, renew the licence granted to the Executing Agency under the Water and Sewerage Act, Chapter 43:30 of the laws of Dominica.</p> <p>The Beneficiary shall by December 31, 2023, or such later date as the Bank may agree, implement the recommendations of WSSP - Management and Operations of the systems.</p> <p>The Executing Agency shall, for the duration of the Project, maintain liability, business disruption and property insurance acceptable to the Bank.</p>
16.	UKCIF Conditions	<p>The Beneficiary shall permit the Bank or FCDO, or any person appointed thereby, to audit the expenditures financed by the Grant, and to provide the Bank and FCDO, or the appointed person with all reasonably required assistance, documents and information.</p> <p>The Beneficiary shall ensure that the contracts under the Project provide for the acknowledgement of, and that each deliverable produced under the Project, contains a visibility statement acknowledging that the resources of the Grant have been provided by FCDO through UKCIF, and that the UKaid logo is utilised in accordance with FCDO standards for use of the UKaid logo.</p> <p>The Beneficiary shall facilitate and permit, during implementation of the Project, and up to five (5) years after the end of UKCIF, any authorised representative of the Bank or FCDO to conduct investigations of credible suspicion of or actual fraud, corruption or any other financial irregularity, impropriety or wrongdoing and if necessary, provide an appropriate refund in accordance with the refund provisions in the Grant Agreement.</p>
17.	Reports and Information	<p>Except as the Bank may otherwise agree, the Beneficiary shall furnish or cause to be furnished to the Bank the reports and information set out in the Reporting Requirements in the form specified therein, or in such form or forms as the Bank may require, not later than the times specified therein for so doing.</p>
18.	Suspension, Cancellation and Refund	<p>The Bank shall be entitled to suspend, cancel or require a refund of the Grant, or any part thereof, if the whole of the UKCIF resources or any part thereof is suspended, cancelled or required to be refunded.</p> <p>The Beneficiary shall not be required to refund any amount of the Grant already expended by the Beneficiary in connection with the Project and not recoverable by the Beneficiary, unless that amount already expended was misappropriated due to a proven fraudulent, unethical or other activity of wrongdoing.</p>

8. LOANS COMMITTEE RECOMMENDATION

8.01 The Loans Committee considered this proposal on December 10, 2021 and agreed to recommend it for the approval of the President.

9. APPROVAL

9.01 The abovementioned Grant is approved.

Signed: Hyginus 'Gene' Leon
President

December 22, 2021
Date

MACROECONOMIC CONTEXT

1. OVERVIEW

1.01 Dominica's economy contracted by 16.6% in 2020, because of the COVID-19 pandemic, which triggered the closure of borders and mobility restrictions on activity between March and June. Tourism, the main source of foreign currency earnings, was significantly affected. Construction activity, much of which was related to rebuilding after Hurricane Maria in 2017, slowed.

1.02 Having funded post-hurricane reconstruction from its cash reserves, the GOCD's fiscal situation was already weakening prior to COVID-19. The need to increase expenditure to support health and social sector needs, combined with a dramatic fall in tax revenue from reduced economic activity, required an increase in central government debt.

2. REAL SECTOR

2.01 Prior to the COVID-19 global pandemic, Dominica was still recovering from the effects of Hurricane Maria. The economy, buoyed by post-hurricane related construction and growth in the tourism and agriculture sectors, grew by 3.6% in 2018 and 5.5% in 2019. Value added also increased significantly in the wholesale and retail and transportation and communication sectors. Central Government fiscal operations resulted in an overall deficit and higher public debt in 2019. On the external side, following increases in both exports and imports in 2019, reflecting a full year recovery in the aftermath of Hurricane Maria, double-digit declines were registered for both, which resulted in the narrowing of the current account deficit in 2020. The pre-COVID-19 outlook was positive. CDB initially projected growth of 3.5% for 2020, conditioned on a continuation of public and private construction activity, expansion of value added in the tourism sector, and increasing agriculture production. Investments in housing, roads, and other climate resilient infrastructure, coupled with private investments, especially in tourism, were expected to boost activity.

2.02 Dominica was hit hard by the COVID-19 pandemic. Tourism exports, which in 2019 accounted for 36.9% of GDP and 56.4% of exports, came to an abrupt halt in March 2020, with widespread visitor cancellations from most source markets. The closure of the country's borders and the imposition of a lockdown for non-essential workers during mid-March to June 2020, brought with it a sudden stop to commercial flights, cruise ship calls, and the closure of hotels, with 2,082 employees being laid off¹. In May, GOCD announced a phased reopening strategy. This turn of events led to a sharp contraction in tourist arrivals, with stay-over and cruise arrivals declining by 75.6% and 48.6% respectively, resulting in a cumulative decline of 56.4% in tourists arrival for the year 2020.

2.03 The curtailment of tourism activities sent shockwaves throughout to industry's supporting services such as taxis; restaurants; bars; and tour guides. Many of these small and medium-sized enterprises had to contend with significant challenges brought about by sharp declines in customer numbers. These impacts, and the wide-spread disruption in other economic sectors, result in an estimated contraction of GDP in 2020 of 16.6%.

2.04 Average inflation for the year 2020 fell to -0.7%, from 1.5% a year before. This reflected lower prices for food, beverages, and household furnishings, supply and maintenance. There were increases in the prices of clothing and the health sub-indices.

¹ Source: Dominica Hotel and Tourism Association

3. EXTERNAL SECTOR

3.01 In 2020 the merchandise trade deficit fell by 34.3% to XCD465.8 mn. This was mainly due to a XCD251.4 mn (33%) decline in imports as the economy contracted. In particular, imports of fuel and construction materials fell. However, total visitor expenditure fell by 65% over the same comparative period, consistent with the drop in tourist arrivals. In addition, inward remittance flows fell by 9.0% to XCD116.5 mn in 2020 compared XCD128.0 mn. Imputed reserves were XCD476.2 mn, equivalent to 7 months of 2020 imports,

4. FINANCIAL SECTOR

4.01 At the inception of the pandemic, the ECCB relaxed a few supervisory guidelines, and commercial banks were encouraged to assist with measures to alleviate the burden on borrowers. ECCB measures included a moratorium on loan payments, including a waiver of late fees and charges; and reducing the discount rate.

4.02 Notwithstanding the contraction in economic output, credit to the private sector grew by 8.6% to XCD725 mn. Overall credit rose in 2020 to XCD1.1 billion, reflective of increased lending to central government, construction and land development and manufacturing. The ratio of non-performing loans to total gross loans increased to 15.0% at the end of December, from 12.2% at the end of 2019. The banking sector in Dominica remains liquid despite the significant shock caused by the pandemic. Net liquid assets to deposits stood at 52.1% at the end of 2020, which is 32.1 percentage points above the ECCB's minimum benchmark. However, the sector remains fragile, after improvements in 2019.

5. CENTRAL GOVERNMENT OPERATIONS AND DEBT

5.01 As with the post-Hurricane Maria recovery, during the year 2020, GOCD increased budgetary allocations to strengthen the healthcare response and to expand social protection services for its citizens. Cognisant of the impact COVID-19 would have on tax revenues, GOCD reduced both expenditure and revenues forecast in the 2020/21 Estimates of Revenue and Expenditure, in addition to reducing agencies allocations in year. Tax revenue for 2020 was approximately 16% below the outturn for 2019. Capital outlay dipped by 44.6% to XCD167.8 mn, due to the slow implementation of most capital projects. The combination of reduce capital expenditure as well as goods and services resulted in an overall surplus estimated 0.6% of GDP, which was an improvement relative to a deficit of 15.1% in 2019. Central government debt increased to 97.1% of GDP primarily due to the dramatic fall in GDP in 2020, and to a lesser extent increased borrowing.

5.02 GOCD's estimated gross financing need for 2020 amounted to XCD329.1 mn (22.6% of GDP), including: principal repayments (XCD178.3 mn) and deficit financing (XCD152.2 mn). Most of the financing gap (70%) was funded from external sources, while the remaining 30% was funded domestically. GOCD received financial support from the International Monetary Fund and was able to repurpose existing project funding from four World Bank projects. CDB funded a debt servicing loan and a policy-based loan. Domestic funding of \$96.1 mn came from the issuance of new bonds, and a XCD125 mn loan from the National Bank of Dominica, which was also used to pay off most of GOCD's overdraft facility.

6. OUTLOOK AND DEBT SUSTAINABILITY

6.01 Preliminary estimates of the performance of Dominica's economy at the start of the year for 2021 pointed to a modest recovery, even though prospects for a rapid return to pre-crisis levels of economic activity remain uncertain. A very slow tourism recovery was projected to commence in early 2021. In the meantime, construction, including continued post-hurricane investments in resilient economic and social

infrastructure were expected to be the main driver of increased economic activity. The resurgence in cases in mid-July and the confirmation of the Delta Variant has prompted the reintroduction of restriction measures. However, on account of robust construction activity and the continued expansion of the agriculture sector, Dominica is projected to grow by 2.5% in 2021.

6.02 The public sector investment programme, as articulated in the 2021/22 Budget Estimates passed days before the new surge in cases commenced, will play a central role in smoothing the business cycle in during the financial year. Estimated at XCD\$427.2 million, the lion-share of which will be funded by grants (33.8%) and Citizenship by Investment funds (55.2%). The portfolio of infrastructure investments includes the commencement of the new International Airport, rehabilitation of the Loubiere to Bagatelle Road, and the Water Sector Strategic Plan and infrastructure upgrade, both to be supported by grant funding from UKCIF. Grant-funded projects are important for improving Dominica's resilience and at the same time not derailing GOCD's debt dynamics. Additionally, private sector activity will continue. The hotel stock will be restored to its pre-Hurricane Maria level. Dominica also aims to transition to a producer, and potentially an export of RE by implementing recommendation of the Sustainable and Resilience Energy Plan which includes the integration of large-scale solar photovoltaic to the national grid as well as the creation of micro-grids. In addition, a private sector consortium is exploring investment in geothermal energy production.

6.03 However, there are downside risks to Dominica's outlook. An effective and widely available vaccine for COVID-19 might take longer than expected, and therefore slow down global economic recovery. There could also be a natural disaster shock. If these risks materialise, then Dominica's recovery would be delayed. Revenue collection would be lower, and if not matched by lower expenditure, fiscal imbalances would widen, and funding gaps would increase. GOCD would require additional multilateral and bilateral emergency financing and donor support.

INSTITUTIONAL AND LEGAL FRAMEWORK – WATER AND WASTEWATER

1. The main laws and regulations related to the water supply and sanitation sectors are outlined below:

Legal Text/Regulation	Summary
National Integrated Water Resources Management (IWRM) Policy July 2011	The National IWRM Policy states that responsibility for water resources management, potable water and wastewater are given to DOWASCO under the 1989 Water Act. The document assesses that governance of Dominica’s water resources is not conducted in a holistic manner and that a policy, strategy, planning and an overarching legal and regulatory framework need to be prepared. It identifies and sets out the important conditions for implementing the IWRM.
National Resilience Development Strategy (2019)	The National Resilience Development Strategy (NRDS 2019) programme for climate resilience development in Dominica provides the means of integrating national resilience issues on environmental protection, social development, and economic development, into the national programming and budgetary process. The NRDS 2019 provides an overarching framework for macro-economic policies, sector strategies and plans, the structural re-form agenda, the annual Public Sector Investment Programmes (PSIP), the annual budgets and social protection and poverty reduction strategies. It sets long-term goals and targets for the long-term sustainable management of water and sanitation for all and protect, restore and promote a sustainable use of terrestrial eco-systems.
Physical Planning Act (2002)	The Physical Planning Act (2002), makes provision for the orderly and progressive development of land in both urban and rural areas and to pre-serve and improve the amenities thereof; for the grant of permission to develop land and for other powers of control over the use of land; for the regulation of the construction of buildings and regulated matters; to confer additional powers in respect of the land acquisitions and development of land for planning purposes and for other matters connected therewith.
Water and Sewerage Act (No. 17, 1989)	The Act makes provisions for a national policy for water, for the granting of an exclusive license to DOWASCO for the development and control of water supply and sewerage facilities in Dominica and for connected or incidental purposes.
Forestry and Wildlife Act No. 12, (1976)	An Act to make provision for the protection, conservation and management of wild animals, amphibians, crustaceans, freshwater fishes, and reptiles.
Forest Act (1959), Chapter 60:01	An Act to make provision for the conservation and control of forests, de-fines the power of the President, the Director of Forestry and Wildlife and forest officers.

Legal Text/Regulation	Summary
National Parks and Protected Areas Act (1975)	Designated the Morne Trois Piton National Park as a National Park and provides for the establishment of National Park's Section under the Forestry and Wildlife Division, consisting of a National Parks Service, a National Parks Advisory Council, and a Director of National Parks, working together with several part-time and full-time park officers and a Park Superintendent.
Electricity Supply Act (2006), Act 10	Regulates the generation, transmission, distribution, and supply of electricity services and for purposes connected therewith; establishes an independent regulatory commission; and repeals the electricity supply act 1996 (No. 21 of 1996).
Kalinago Territory Act (1978, 2015)	The Kalinago Reserve Act provides authority and responsibility to the Kalinago Council for the management of the Kalinago Territory. Prior to March 2015 Kalinago Territory was referred to as the Carib reserve, and title changed from Kalinago Reserve Act to Kalinago Territory Act. The act gives various powers to the Kalinago Chief and Council and indicates mechanisms for elections, use of funds, institution of bylaws relevant for the management of the community.
Fisheries Act (1987), Chapter 61:60	An Act to provide for the promotion and regulation of fishing in the fishery waters of Dominica and for matters incidental thereto and connected therewith. The Fisheries Regulations specifically prohibit a person from disposing of or dumping litter, soil, debris or pollutant in the marine reserve or causing a pollutant to enter the marine reserve
Solid Waste Management Act, (2002)	Act to establish a national solid waste management corporation and to provide for the management of solid waste in conformity with best environmental practices.

2. Additionally: The Agricultural Small Tenancies Ordinance (1953), the Pesticides Control Act and Regulations, the Crown Lands Ordinance, the Health Act, the Public Utilities Commission Act (1972, 1989), Public Companies Act (1994) and the National Development Corporation Act (1988).

APPENDIX 1.2.2

WATER PRODUCTION IN WATER AREAS

WA	Production (m3/a)	Population 2011	Population Forecast 2049	WA	Production (m3/a)	Population 2011	Population Forecast 2049
1	6,663,099	26,615	39,923	26	115,593	672	551
2	(no data)	2,179	1,311	27	(no data)	753	(no data)
3-11	1,448,153	10,648	22,613	28	144,808	824	593
12	88,172	789	753	30	592,507	4,080	2,770
13	98,799	565	218	31	291,452	1,829	1,641
14/15	275,527	1,740	1,694	32	101,941	517	517
16	66,045	690	558	33	26,540	1,101	1,969
17	4,354	1,017	934	34	(no data)	703	353
18/19	56,426	4,084	2,368	35/36	310,641	1,802	3,218
20	133,537	1,087	492	37	68,053	321	252
21	234,282	1,204	988	38	88,853	347	1,365
22	139,907	722	429	42	140,435	3,233	2,713
23	6,250	152	51	43	41,498	149	50
24	24,129	368	148	44	(no data)	1,420	1,921
25	82,044	1,128	681				

Total Production						11,243,045	
Total Population 2011						70,739	
Total Forecast Population 2049						91,074	
Total Demand (2018/2019)				972,867,077	imp/g/a	4,422,741	

SURFACE WATER QUALITY ANALYSIS – SUMMARY

1. Under the Water Sector Strategic Plan (2021) a review of the monitoring results for raw water samples taken between 2009 and 2018 was completed to analysis the quality of the available water sources. From the 116 samples with at least one value reported for coliforms, the average value for Total Coliforms (TC) is 1,254 Colony Forming Units (CFU)/100 mL, 109 CFU/100 mL for Faecal Coliforms and 50 CFU/100 mL for E. Coli.

**RESULTS OF RAW WATER BACTERIOLOGICAL ANALYSIS (COLIFORMS ONLY)
CATEGORISED IN 5 RANGES**

Range [Coliforms/100 ml]	Number of Samples in the Range		
	Total	Fecal	Escherichia
Less than 2	7	20	4q
2 to 100	16	77	67
100 to 500	46	11	4
500 to 2000	20	2	2
2000 to 34000	14	2	1
TNTC	11	0	0
No Data	2	4	1
Sum	116	116	116
Average Value*	1235.2	109.1	49.9
Maximum Value	34000	4100	2400
Mode	100 to 500	2 to 100	2 to 100

2. The most frequent value for TC is in the range of 100-500 CFU/100 ml, Faecal Coliforms and E. Coli were mostly within the 2-100 CFU/100 ml range.

3. The WSSP (2021) indicated that microbiological contamination can be removed by means of chlorination (which is conducted in all water systems). The removal potential of chlorination usually lies between 2 and 3 log. This means that surface water with up to 1000 CFU/100 ml could be used to feed the supply systems as long as chlorination is working efficiently. However, suspended solids (or turbidity in general) diminish the effectiveness of chlorination. In general, if the level of TC is above 100 CFU/100 ml, additional measures should be considered to ensure microbiologically safe water.

SHUTDOWNS AND DISRUPTIONS TO SERVICE DELIVERY

TURBIDITY IMPACT

1. As reported in the WSSP (2021) the turbidity in the surface water at the intakes is generally so low that no further treatment is required. However, turbidity is commonly affected by rainfall, usually forcing caretakers to shut down the supply lines. However, due to the steep topography of the island, the small size of the water catchments and the generally large vegetation cover upstream of the intakes, low turbidity levels are quickly recovered after the rain ceases.

2. The intakes which show regular turbidity and silting problems due to rainfall are listed in the below table.

Water Area	Intake	Remarks
1	Springfield	Water is treated at Antrim WTP
1	Beau Bois	
1	Café	
12	Penville	
18/19	WWM	
19	Crapaud Hall	Water is treated in a sedimentation tank
21	San Saveur	Heavy silting after rain, requiring regular flushing
32	Bellevue Chopin	Silts during heavy rain
35	Wotten Waven	Silting after heavy rain due to landslides
36	Trafalgar	

3. DOWASCO keeps records of the downtime due to increased turbidity levels (or other operational disruptions) for the Springfield intake (WA-1), supplying water to Antrim WTP and the Roseau Area. A summary of these records is presented in the below table.

4. For the period 2013 to 2018 between five and twelve shutdowns occurred in WA-1 due to high levels of turbidity an exceptional case was in 2017 where Hurricane Maria caused extreme rainfall. Due to the catastrophic disruption, water turbidity and the number of shutdowns of the system could not be exactly tracked.

Year	No. of days with closure	Total Hours	Hours due to rainfall	Rainfall (mm)	Comments
2013	24	89.1	52.5	2,219	5h due to TS Chantal
2014	14	69.7	43.8	1,589	12.8h due to TS Bertha
2015	12	110.7	95.5	1,506	68h due to TS Erika
2016	34	173.2	95.8	1,957	21.5h due to TS Matthew
2017	>49	293.3	283	2,232	168h due to Hurricane Maria
2018	45	185.9	162.5	1,823	14.3 h due to TS Beryl 15h due to TS Isaac 6h due to TS Kirk

5. Between 5 and 12 shutdowns occurred in WA 1 due to high levels of turbidity in the period from 2013 to 2018. An exceptional case was in 2017 where Hurricane Maria caused extreme rainfall. Due to the catastrophic disruption, water turbidity and the number of shutdowns of the system could not be exactly tracked in the following months.

6. No downtime records are kept for the other Water Areas.

7. Following the installation of the filtration system at the Antrim Water Treatment Plant of the WA-1 System, there was a marked improvement in the number of shutdowns and level of turbidity.

8. The following is a summary of the WA-1 shutdown for 2020. It also shows the operation details of the filtration system.

Parameters	2020	2019	2018
Number of days shut down	16	18	36
Number of times shut down	21	21	45
Number of hours shut down (hrs)	66.1 (2.75 days)	116.55 (4.5 days)	190.3 (8.12 days)
Longest shutdown (hrs)	10	10.5	14
Peak turbidity	800	154	500
Number of times NTU above 100	10	2	11
Month with the most shutdowns	November (6)	October (6)	February (14)

Parameters	2020
Number of days on filtration	22
Number of times on filtration	21
Number of hours on filtration (hrs)	86 (3.6 days)
Longest shutdown (hrs)	10.6
Peak turbidity	800
Month with the most filtration	October and November (5)

- Shutdown for all months except April and May
- Increased number of times Nephelometric Turbidity unit (NTU) reached 100 and above and increased peak turbidity
- Shutdown days cut down by almost 50%; 4.5 days in 2019 compared to 2.75 days in 2020

**DOWASCO – OPERATIONS AND MAINTENANCE COST
OF THE WATER SECTOR 2015 – 2018**

1. On the expenses side all cost categories have remained at fairly constant levels for the period 2015-2018, except for the Operations and Maintenance costs, which rose dramatically in 2016 and 2018 due to the reconstruction efforts after both storms (see Table 7-4). This increase and the decline in water sales revenues explain the large total losses in 2016 and 2018.

OPERATING EXPENSES FOR THE PERIOD 2015-2018 (XCD)

	2015	2016	2017	2018
HR/Admin and Customer Service	2,161,479	2,312,797	2,519,855	2,343,764
Finance	1,258,373	1,274,704	1,446,966	1,355,984
Maintenance and Operations	6,115,755	8,620,264	6,455,408	10,237,799
Reconnections and Connections	203,798	199,353	172,287	31,999
Engineering	494,262	438,331	513,306	533,539
Audit Fee	22,00	22,00	21,996	21,996
Sewerage services	1,526,388	1,761,424	1,542,606	1,405,993
Total Expenses	11,782,055	14,628,873	12,672,424	15,931,074

2. The 2nd largest department is HR/Customer Services with 15-20% of the costs, followed by sewerage services (9-13%) and Finance Dept. (9-11%). For year 2017 the largest cost item was salaries and wages, which amounted to 38% of the costs (including caretaker services). An additional 7% was for social contributions and allowances. Other large cost categories were Maintenance for Water Systems (14.5%) and Electricity costs (10,9%).

WATER STORAGE CAPACITY

BASE YEAR 2019 - TARGET YEAR 2049

Water Storage: The required storage volume for each Water Area has been calculated, based on the estimated water demand for 2019 and 2049. Due to projected reduced population and demographic adjustments in 2049 this should result in a surplus in water storage by 19% present water storage with the present storage volumes.

TABLE 1: SUMMARY ASSESSMENT OF CURRENT AND FUTURE WATER STORAGE VOLUME FOR ALL WAs

WA	Existing Volume m ³	Volume demand 2019 l/s	Volume demand 2049 m ³	Deficit 2019		Deficit 2049	
Totals	23,761	25,230	19,923	-1,469	-6%	3,838	19%

Source: DI Report Water Sector Strategic Plan – Diagnosis of Water Supply System

TABLE 2: STORAGE VOLUME DEMAND PRIORITISED WA IN 2049

WA	Water Demand 2049 (m ³ /d)	Storage Demand 2049 (m ³)	Storage 2019 (m ³)	Deficit/Surplus (m ³)
WA-1 (1-2)	16,436	11,027	12,301	1,274
Roseau Valley (34-37)	1,515	985	557	-428
West Coast (3-11)	6,761	4,653	2,759	-1893
East Coast (20-24)	1,396	908	736	-171
Calibishie (17)	383	249	123	-126

KEY RECOMMENDATIONS FROM WATER AUDIT REPORT (2015/2016)

1.01 The Water Audit conducted between 2016 and 2017 established DOWASCO's NRW level at 58.5% of System Input Volume, disaggregated as 38.66% for Real Losses, 18.22% for Apparent Losses, and 1.62% for Unbilled Authorised Consumption. One of the main outputs of the Water Audit was a Non-Revenue Water Reduction Action Plan which proposed a strategy for reduction of the NRW level to 30% over an Implementation Period of 5 years.

1.02 Due to the impact of Hurricane Maria, however, DOWASCO's focus was shifted from NRW reduction towards repairing of destroyed water systems in order to restore potable water service to its customers in the quickest possible time. The financial burden placed on the utility by this hurricane also served as a further impediment towards full implementation of the plan. Following restoration of water service to all communities, focus then shifted towards development of plans for holistically building resilience in the water sector, through the WSSDP and other programmes. Nevertheless, the proposed measures under the WSSDP include elements of NRW Reduction.

1.03 The following are the 15 areas of focus of the Non-Revenue Water Reduction Action Plan prepared under the Water Audit, as well as comments of any related actions taken by DOWASCO:

(a) Metering of System Input Volume

- (i) To include installation of Bulk Meters for all water areas (some featuring AMR and data loggers), setting up of Metering Department comprising 1 to 3 technicians.

Comment:

SCADA-ready, electromagnetic Bulk Meters have been procured for the main water system (WA-1) under the CDB Third Water Supply Project.

(b) Customer Metering

- (i) Expand metering coverage from 92% to as close to 100% metering as possible.

Comment:

All new service connections are metered. 2 pilot projects undertaken for ultrasonic customer metering. Proposals received from 2 ultrasonic meter manufacturers for complete meter changeout.

(c) Customer Database

- (i) Perform customer surveys, implement extra billing cycle for high consumers, identify premises of unmetered customers, mapping of customers, adjust meter reading routes and frequency (if required).

Comment:

Mapping of customers has already been undertaken for parts of WA-1 system. DOWASCO's PMU is presently developing a GIS database showing customer locations.

(d) Reservoir Overflow Control

- (i) Level monitoring, Float Valve maintenance, automatic pump shut-off measures.

Comment:

Most of these activities form part of ongoing O&M. DOWASCO previously employed automatic tank level monitors for some sites. This is being further explored, for integration with new WA-1 SCADA systems. Other SCADA systems will be set up under the WSSDP.

(e) GIS and Hydraulic Modelling

- (i) Establish GIS database, GIS/hydraulic modeling unit.

Comment:

Some water system drawings have been converted to GIS format. DOWASCO's PMU and Engineering Staff are continuously converting more system drawings into GIS format. Hydraulic models developed by WSSDP Consultant and PMU for some systems.

(f) DMA Establishment and Inter Zone Metering

- (i) Develop DMAs

Comment:

DMAs have been proposed for all of the project areas under the WSSDP.

(g) Pressure Management

- (i) PRVs to be installed based on hydraulic models, smart pressure control.

Comment:

PRVs are routinely installed to limit pressures for all projects, as required based on system design and recommended pressure variation in the network, and retroactively on existing networks, when needed. Smart pressure control systems (demand modulated) to be implemented on future projects.

(h) Leakage Reduction Activities and Leak Reduction Programme

- (i) Related to GIS, DMAs, and PRVs interventions mentioned previously.
(ii) Introduce Leak Detection Unit, Procurement of Leak Detection Equipment, active leak control.

Comment:

Leak Detection Unit not yet in place and may require hiring additional technicians. Leak Detection equipment is being undertaken as part of CDB's Third Water Supply Project. Pilot active leak control systems will be considered in limited areas during future projects.

(i) Asset Management Strategic Plan

- (i) Preventative maintenance, asset replacement plan, capital project planning

Comment :

To be developed.

(j) Stand Pipes

- (i) Metering, self-closing, pre-pay alternatives, relocation where necessary.

Comment

To be explored.

(k) Unbilled Authorised Consumption

- (i) Records of usage, metering of Public Conveniences and hydrants.

Comment

Some Public Conveniences are already metered, to monitor consumption, though not billed.

(l) Pipe Replacement Programme

- (i) Pipe replacement programme after Leak Detection
(ii) Replace 15 km of pipes in worse condition

Comment

Pipeline replacement is an ongoing O&M activity and entire sections of aged pipes are sometimes replaced in areas of known high leakage. This activity also precedes community road projects.

(m) Staffing for a NRW Reduction Department

- (i) Incentivise staff based on NRW red made, retain experienced staff

Comment

Not yet implemented

(n) NRW Awareness Programmes

- (i) Prepare and conduct NRW awareness programme

Comment

Not yet specifically implemented, although some of this information forms part of DOWASCO's routine educational programmes on water conservation.

(o) Implementation, Supervision and Monitoring of NRW Reduction Action Plan

(i) Consultant to monitor 5-year NRW programme

Comment

Will not be implemented until a formal NRW Management Programme is in place.

DETAILED PROJECT COMPONENT DESCRIPTION

1. PROJECT PREPARATION

1.01 This component includes the consultancy services to prepare a feasibility study, detailed designs and bid documents for a plan to improve five water supply systems and two wastewater systems. The component cost is \$2.9 mn and accounts for GOCD counterpart funding.

2. LAND

2.01 Purchase/acquisition or the grant of easements of 15,424 m² of privately-owned lands to be utilised for the development of the water systems within targeted networks. The privately-owned lands identified for acquisition account for lands where the installation of WTP, tanks, pumping station and rights-of-way are required for the prioritised systems. DOWASCO has commenced the acquisition process, with negotiations and compensation of payments scheduled to be completed January and February 2022, respectively. This component is approximately \$500,000 and accounts for DOWASCO's counterpart funding.

3. INFRASTRUCTURE WORKS

3.01 This component includes capital works include construction, rehabilitation and or extension of five water supply systems and two sewer systems. Water supply system works include building the resilience and enhancing the storage capacity of the water supply systems through the rehabilitation, and or extension or construction of water storage tanks, water treatment plants, distribution network upgrades, ancillary works and the integration of RE and EE solutions. Also, the construction of a sewer system and wastewater treatment plant. The estimated cost of this component is \$23.5 mn with an additional \$3.9 mn as GOCD counterpart funding.

4. ENGINEERING AND CONSTRUCTION-RELATED SERVICES

4.01 This component consists of Construction Supervision Services, including the evaluation of bids and preparation of bid report, contract administration, construction supervision, preparation of progress reports, certification of payments and inspection services during the defects liability period and the preparation of a project completion report (PCR). The estimated cost of this component is \$2.2 mn with an additional \$0.45 mn as GOCD counterpart funding

5. GOODS

5.01 This component consists of the procurement of:

- (a) three (3) vehicles to support the DOWASCO in the execution of the Project. The Project sites are located over the vast majority of rural and peri-urban lands of Dominica, this would necessitate a greater level of mobility by DOWASCO in the effective execution of the Project
- (b) Geographic Information System software, IT Software, training and supporting equipment
- (c) Computers and accessories
- (d) Estimated cost for the procurement of goods is \$225,964 from CDB's UKCIF resources

6. **INSTITUTIONAL STRENGTHENING**

6.01 **Strategic Framework for Water Resource Management:** The engagement of consultancy services to draft Strategic Framework for Water Resource Management in Dominica, estimated at \$195,000 from CDB's UKCIF resources and \$43,750 in counterpart funding from GOCD.

7. **OTHER PROJECT SUPPORT SERVICES**

7.01 **Gender-responsive and Socially Inclusive Communications Plan:** The engagement of consultancy services to facilitate the execution of a socially inclusive communications plan, estimated at \$186,400 from CDB's UKCIF resources and \$47,900 in counterpart funding from GOCD.

8. **PROJECT MANAGEMENT**

8.01 This component encompasses the strengthening of the PMU, DOWASCO which would be responsible for the implementation and management of the Project. The PMU shall comprise of the following assigned officers from within GOCD: PTL; EMO; JE; AO; PRO; and an AA. The duties and responsibilities of PTL and AO are attached to this Report. In respect of the other officers to be assigned to the Project, the AA will provide administrative assistance to PMU, the PRO will have responsibility for public relations for the Project, whereas the JE will provide engineering services support to PMU. Officers to be engaged under the PMU shall be: PC; PE; PS; M&E Officer; and CLO. Office equipment and accommodation are also included. The estimated cost of this component is \$484,500 and with an additional \$780,929 as GOCD's counterpart funding.

SUMMARY OF LAND ACQUISITION PLAN - DOWASCO

Activity		Description/Tasks	Responsible Party	Status As At 11/10/21	Timelines	Comments
1	Land Owner Identification	Identify properties to be acquired, with relevant details i.e., quantity, location	Design Consultant	100%	Monday 18 Oct., 2021	
		Identify property owners		100%	Thursday 11 Nov., 2021	
		Contact property owners to inform them of the need to acquire their property, reason and the amount required.	DOWASCO	88%	Wednesday 17 Nov., 2021	3 Property Owners are pending.
		Collection of legal documents (Certificate of Titles, Affidavits of Ownership, Wills and Testaments etc) to prove ownership of land	DOWASCO	0%	Friday 03 Dec., 2021	Should provide Access for Site Visits during Tendering process, as Tender Docs are expected to be issued some time in December
2	Survey and Valuation of Properties	Survey affected property to hatch out the required portion.	DOWASCO (via Surveyor)	0%	Friday 24 Dec., 2021	Preparation of Cadastral Surveys
		Valuation of hatched out portion to determine replacement cost	Property Valuation Unit/Surveyor	0%	Friday 14 Jan., 2022	
3	Negotiation	Negotiate price with private property owners and preparation of report with complete list of properties and final agreed price. Note: Where an agreement on the value is not reached, the owner is free to provide a private assessment value for further negotiation.	DOWASCO	0%	Friday 28 Jan., 2022	If negotiations are not successful, compulsory Land Acquisition via the Land Requisition Act.
4	Compensation Payment	Payment of compensation to affected property owners	DOWASCO	0%	Friday 25 Feb., 2022	Monies has been budgeted and payment should promptly follow successful negotiations
5	Declaration and Publication	Declaration of acquisition served to land owners and publication in the Official Gazette	Ministry of Lands and Housing	0%		
<u>Upon Failure of Negotiations - Compulsory Acquisition (following Land Acquisition Act)</u>						
6	Submission of Cabinet Paper for Approval of Acquisition	Preparation and submission of Cabinet Paper for approval of acquisition of property	Ministry of Housing and Lands	0%		

Activity		Description/Tasks	Responsible Party	Status As At 11/10/21	Timelines	Comments
7	Approval of Acquisition		Cabinet	0%		
8	Submission of Cabinet Paper for Approval of Payment of Compensation	Preparation and submission of Cabinet Paper to approve payments to property owners	Ministry of Housing and Lands	0%		
9	Approval of Payments	Payment amount approved and transferred to the Treasury Division or bank accounts of affected property owners	Cabinet	0%		
10	Declaration and Publication	Declaration of acquisition served to land owners and publication in the Official Gazette	Ministry of Lands and Housing	0%		To ensure access to sites for Tendering Process site meetings
11	Compensation Payment	Payment of compensation to affected property owners	Treasury Division	0%		
12	Filing of Receipts	Copies of receipts of payment to be filed at the PCU	Social Specialist, PCU	0%		

SUMMARY OF WATER SUPPLY SYSTEMS AND WASTEWATER INTERVENTIONS

Lot No.	Description of Interventions
<p>Lot 1 – Construction of Water Treatment Plants for five sites (Coulibistrie, Providence, Castle Bruce, Grand Fond, Calibishie)</p>	<ul style="list-style-type: none"> ▪ Installation and commissioning of packaged water treatment plants; minimum design flow 250 m³/h (70 l/s). ▪ Construction of glass-fused-to-steel water tank; minimum capacity 100,000 gals. ▪ Installation and commissioning of mini-hydropower plant; minimum power output 300kW. ▪ Roseau WA-1 SCADA system installation and commissioning (local SCADA and central monitoring system).
<p>Lot 2 – Construction of New Water Supply Systems for Roseau Valley and Calibishie</p>	<ul style="list-style-type: none"> ▪ Implementation of DMAs and pressure zones by sectorisation of existing distribution networks. ▪ Construction of new main pressure lines feeding each pressure zone (4,6 km HDPE OD SDR11 between 50 and 225mm), including pressure reducing valves. ▪ Construction of supply line 6 km DN 150 Ductile Iron C40. ▪ Rehabilitation of existing irrigation pipeline (3 km HDPE DN 600) (Optional). ▪ Water pump station installation and commissioning. ▪ Construction of glass-fused-to-steel water tank (capacity 100,000 impg). ▪ Construction of river intake structures.
<p>Lot 3 – Construction of New Water Supply Systems for the West Coast</p>	<ul style="list-style-type: none"> ▪ Implementation of DMAs and pressure zones by sectorisation of existing distribution networks. ▪ Construction of new main pressure lines feeding each pressure zone (12 km HDPE OD SDR11 between 50 and 180mm), including pressure reducing valves. ▪ Construction of new supply lines 7 km DI/HDPE DN 300/350. ▪ New pumping station Coulibistrie (80 kW) and Grand Savanne (15 kW). ▪ Construction of several glass-fused-to-steel water tank (capacities 60,000 - 300,000 impg). ▪ Construction of river intake structures.
<p>Lot 4 – Construction of New Water Supply Systems for the East Coast</p>	<ul style="list-style-type: none"> ▪ Implementation of DMAs and pressure zones by sectorisation of existing distribution networks. ▪ Construction of new main pressure lines feeding each pressure zone (7 km HDPE OD SDR11 between 50 and 110mm), including pressure reducing valves. ▪ Construction of new supply lines 11 km DI DN 150 C40. ▪ Construction of 1,5 km new section irrigation pipeline HDPE OD 355mm SDR 177. ▪ New pumping stations Grand Fond and Castle Bruce. ▪ Construction of glass-fused-to-steel water tank (capacity 60,000 - 200,000 impg). ▪ Construction of river intake structures.
<p>Lot 5 – Construction of Sewer and Wastewater Treatment Plant in Jimmit</p>	<ul style="list-style-type: none"> ▪ Installation and commissioning of a packaged wastewater treatment plant; design flow 320 m³/d. ▪ 4 km of PVC sewer pipeline; minimum DN:150 (6”). ▪ SCADA installation and commissioning. ▪ Submarine sea outfall: length 230 m, depth of water at outfall site – 10.8 m and discharge depth of 10.3m (0.5 above sea ground). The pipes to be used for the outfall shall be HDPE SDR11 PN16 (High Density Polyethylene), and have a diameter is set to DN 225, which leads to flow velocities of 0.2 m/s to 1.041 m/s.

DRAFT TERMS OF REFERENCE - CONSTRUCTION SUPERVISION CONSULTANT
DOMINICA WATER SECTOR STRATEGIC PROJECT

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica (GOCD) wishes to engage Consultants to complete Construction Supervision of the Project at caption within the Project Management Unit (PMU) of the Dominica Water and Sewerage Company Limited (DOWASCO). DOWASCO, through the PMU, will be responsible for the management and implementation of the Dominica Water Sector Strategic Project—financed by the Caribbean Development Bank (CDB) under the United Kingdom Caribbean Infrastructure Partnership Fund.

1.02 The captioned project’s impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers.

1.03 The Consultant shall report directly to the Project Coordinator (PC), of the Project Management Unit (PMU) or his/her designate.

2. OBJECTIVES

2.01 The objectives of the assignment are as follows:

- (a) ensure that high-quality construction is achieved and that all work is carried out in full compliance with the contract documents and technical specifications; and
- (b) provide support to the PMU in the execution of its project management functions, including its monitoring and evaluation functions.

3. SCOPE OF SERVICES

3.01 In the present COVID-19 pandemic environment it will be necessary for the Consultant to clearly outline within their methodology how the project will be executed effectively and the necessary mitigation measures to do so. Cost implication should be clearly stated in the fee proposal.

3.02 The Consultant(s) will undertake the following tasks:

- (a) **Contract Supervision:** Technical support providing supervision of the Contractor(s) activities on behalf of PMU. In general, this includes carrying-out all the duties of the Engineer as specified in the Construction Contract, within the limitations specified therein, which corresponds to the following non-exhaustive activities:
 - (i) Quality Control Supervision
 - (aa) Approve Contractor’s key personnel including any substitutions during implementation.

- (bb) Approve materials and source of materials.
- (cc) Inspect the Works periodically during the construction period.
- (dd) Supervise compliance with design standards.
- (ee) Liaise with Clerk of Works and the Project Engineer of the PMU: ensure the works are executed as per the contract specifications, detailed design drawings and the bill of quantities.
- (ff) Ensure that inspection, approval and testing, when necessary, of all materials and workmanship is conducted.
- (gg) Supervise Tests on Completion.
- (hh) Order special tests of materials or completed works and/or removal and substitution of improper materials and/or work, as required.
- (ii) Ensure follow up of all modifications and control of the changes.
- (jj) Coordinate required activities during the Defects Liability Period.

(ii) Schedule Control

- (aa) Approve the contractor's work programme.
- (bb) Work proactively with the contractor in order to plan activities on a short, medium and long term.
- (cc) Define key milestones.
- (dd) Control and appraise the progress of the Works and report any significant delays.
- (ee) Order suspension of the Works, if necessary, and authorise, with the employer's approval, extensions of the period for completion of the Works.
- (ff) Ensure contingency plan in case of delays.

(iii) Budget Control

- (aa) Check documentation to support milestone payment requests.
- (bb) Check all quantity measurements and calculations required for payment purposes and ensure that all measurements and calculations are carried out in a manner and at the frequencies specified in the Contract Documents.
- (cc) Issue recommendations for payment of Contractors according to progress of works, based on Contract conditions.
- (dd) Follow up of payments (Information of payments actually processed shall be provided by the Government of the Commonwealth of Dominica (GOCD)).

(iv) Health, Safety and Environment Control

- (aa) Monitor adherence to the Health and Safety Plan.
- (bb) Supervise the Contractor in all matters concerning public safety and care of the works and, if required, request the Contractor to provide any necessary lights, guards, fencing, and watchmen.
- (cc) Monitor adherence to the Environmental and Social Management Plan.

(v) **Risk Management**

- (aa) Production and monitoring of a risk management plan.
- (bb) Constant assessment of the impacts of risks on the project.
- (cc) Definition of mitigation measures for each risk.

(vi) **Contract Administration**

- (aa) Ensure contractual obligations are respected.
- (bb) Explain and/or adjust ambiguities and/or discrepancies in the Contract Documents.
- (cc) Issue variation orders, evaluate variations, fix rates for unpriced work, all after obtaining prior approval of the employer, and/or to make recommendations to the employer regarding alternatives.
- (dd) Ensure amendments are in place and formalised when applicable.
- (ee) Management of claims, non-conformances, request for information, etc.
- (ff) Issue of Taking Over Certificates.
- (gg) Issue Certificates of Final Completion after the rectification by the Contractor of possible defects and end of Defects Liability Period, and recommendation for payment of retention money.

- (b) **Document Management:** Project Management Information System: Proposing and setting up a computer-based Project Management Information System (PMIS) which will keep an up to date record of signed contract, Bill of Quantity, Quality Control Management System, Environmental Health and Safety Standards Management System, progress reports, minutes of the meetings, certification of contractor's invoices, completion reports and any other project related information and communications on a web-based SharePoint type information system which can be used by all the three parties Consultants, Employer and the funding agencies. The CPU will determine the list of authorised users to whom a password would be given for making use of the PMIS.
- (c) **Stakeholder Management:** Ensure the best interest of all the relevant stakeholders is taken into account when decisions are made, ensure their active participation in the decision-making process and ensure close coordination and the appropriate flow of information. Ensures coordination of the stakeholders within the Organisational Structure of the Project.
- (d) **Community Awareness/Social Management Plan:** Coordination of community awareness activities in collaboration with respective Community Coordination Committees, Community Liaison Officer (CLO) and the PC, to inform the community about project activities and benefits, as well as to conduct other sensitisation activities to be defined with GOCD. These activities shall also be done in consultation with the Gender-responsive and Socially Inclusive Communication Plan Consultant, and the implementation of the plan. This will include the following non-exhaustive activities:
 - (i) Participate in community meetings throughout project implementation to ascertain and inform, among other things, the communities' views on the Project, as well as the implementation progress and impacts.

- (ii) Production and Monitoring of a Social Management Plan inclusive of critical aspects for mainstreaming of gender equality and universal design environmental access requirements/standards for persons with disabilities (PWDs).

4. DURATION OF THE CONSULTANCY

4.01 The consultancy is expected to be conducted over a period of approximately 24 months. The Consultant will ensure additional support if necessary, during the Defect Liability Period after the Taking Over Certificate has been issued. This support will be finalised by the issue of the Final Payment Certificate.

5. REPORTING REQUIREMENTS

5.01 The Consultant(s) will present the Reports in “pdf” format, as complete documents, as well as in Microsoft Word and Excel and/or other formats used in their creation. A copy of all data used in the preparation of the Reports shall also be submitted to CDB. These reports are as follows:

- (a) Inception Report: The Inception Report will be presented within 28 days after the signing of the Contract, and it will include: Consultant’s detailed work schedule and methodology, including proposed resources and proposed payment schedule.
- (b) Monthly Reports: The Consultant(s) will, no later than the specified date of each month, prepare a Progress Report summarising the work accomplished for the preceding period. The Reports will outline any problems encountered (administrative, technical, or financial) and give recommendations on how these problems may be overcome. The Reports will detail progress of ongoing works, include analysis and summaries of all test results, and shall record the status of payment of all contractor’s monthly certificates, of all claims for cost or time extensions, and of actions required of PMU, other GOCD agencies, utility companies or other stakeholders to permit unconstrained works implementation. Information of payments actually processed should be provided by GOCD. The Reports shall all include for the monitoring of the requisite indicators of the Results Monitoring Framework.
- (c) Contract Completion Report: The Consultant(s) will prepare a comprehensive Contract Completion Report. This Report, which will be issued within 3 months after the issue of taking over certificate of the Design-Build contractor works, will include As-Built drawings and shall summarise the method of construction, the construction supervision performed, actual implementation progress and costs compared to planned progress and costs, including on the climate resilience and disability accessibility aspects, quality assurance and quality control results, Operational Guidelines, Standards and Procedures for the Materials Laboratory, technical issues addressed.
- (d) As-Built Drawings: The Consultant will be responsible for verifying the accuracy of the “As Built Drawings” prepared by the contractor and these drawings shall be submitted in file formats appropriate for use in AutoCAD v2014 software.

5.02 The delivery and acceptance of the reports will be aligned with the invoicing schedule of the consultant and shall form (one of the pre-requisites) the basis upon which such invoices will be actioned by the client

6. CONSULTING TEAM STRUCTURE

6.01 The proposed modality of work is based on the assignment by a project team of professionals which will undertake the tasks listed above in order to achieve a successful completion of this infrastructure project while assuring the compliance with international procedures and regulations. The team will be constituted of the following key experts:

(a) Key Expert No.1: Supervision Team Leader/ Engineer (8 person-months):

- (i) Education: BSc. in Civil Engineering or other satisfactory professional qualifications.
- (ii) Experience: At least 15 years' international experience as Team Leader in the supervision, planning and design of potable water supply and sewer and treatment (water and wastewater) systems for urban and rural communities. Experience should include supervision of similar international projects, the assessment of surface and rainwater resources, the hydraulic analysis of water transmission and distribution systems, and in the preparation of procurement documents, experience as team leader in contract management and administration.

(b) Key Expert No.2: Resident Engineer (24 person-months):

- (i) Education: BSc. in Civil Engineering.
- (ii) Experience: At least 15 years' regional/international professional experience including at least 10 years of relevant experience in similar projects including contract management.

(c) Key Expert No.3: Quality Assurance Engineer (15 person-months):

- (i) Education: BSc. in Civil Engineering or other satisfactory professional qualifications.
- (ii) Experience: At least 10 years' of international professional experience including at least 5 years of relevant experience. He/she should have experience with the construction and testing of water supply systems. He/she should have experience in the establishment of a laboratory, training of staff to a specified accredited international standard. Experience working in the region would be an advantage.

(d) Key Expert No.3: Wastewater Treatment Expert (3 person-months):

- (i) Education: MSc. in Wastewater treatment or other satisfactory professional qualifications.
- (ii) Experience: At least 10 years of international professional experience of relevant experience. He/she should have experience in i) Design/Review of Design of wastewater treatment systems, ii) preparation/elaboration of Operation manuals and put in operation wastewater treatment plants. He/she should have experience in the establishment of a laboratory, training of operation staff.

6.02 Other specialised professionals are needed to guide the implementation of the project. The consultant is free to form its team including the Key Personnel and other professional. The following list is suggested:

(a) **Specialist No. 1: Water Supply and Sanitation Engineer Specialist**

- (i) Education: Professional engineer on Water Supply and Sanitation or related areas.
- (ii) Experience: Professional experience of 10 years, with a minimum of 10 years consulting on the analysis and design of water supply and sanitation system

(b) **Specialist No. 2: SCADA Specialist**

- (i) Education: System Engineer, Engineer, or equivalent, with advanced studies on computer aided design or SCADA information system.
- (ii) Experience: No less than 5 years of professional experience working on SCADA systems.

(c) **Specialist No. 3: Environmental Management Specialist**

- (i) Education: Civil or Environmental Engineer or equivalent, preferably with a Master's Degree in environmental science from a recognised university.
- (ii) Experience: At least 7 years' work experience in the area of environmental assessment and in the preparation of environmental management plans. Experience with ESIA/EIS procedures is a requirement.

(d) **Specialist No. 4: Social and Gender Management Specialist**

- (i) Education: Preferably a Master's Degree in Social Policy, Gender and Development Studies or related discipline.
- (ii) Experience: The candidate should preferably have 10 years' experience in development projects using participatory qualitative and quantitative research methods in accordance with the policy, guidelines and requirements of major International Financial Institutions. Knowledge of vulnerable groups of youth, elderly, children, PWDs, indigenous peoples, and gender issues affecting men and women, respectively is critical for this assignment. Experience with infrastructure, transportation and/or climate resilient projects will be distinct assets.

6.03 An engineer support team will be required and an AA. In addition to this key and specialist personnel, technical support staff such as inspectors or supervisors and surveyors should also be considered.

7. MANPOWER, SCHEDULING AND COSTS

7.01 In estimating man-month requirements and costs of the services, the Consultant(s) should ensure that the proposal takes full account of all of the above requirements and the following items:

- (a) consultant(s) fees;
- (b) consultant(s) out-of-pocket expenses;
- (c) support staff services;
- (d) equipment hire; and
- (e) report production, documentation, and communication costs.

8. COMMENTS BY THE CONSULTANTS

8.01 The Consultant are required to make any comments on, and suggestions for, improvements to these Terms of Reference. The financial implications, if any, of these recommendations should be indicated in the Financial Proposal.

9. COORDINATION AND FACILITIES

9.01 The PMU is the Executing Agency for the Consultancy. The Consultant(s) shall report to the Project Coordinator located within PMU. PMU will facilitate the issuance of any permits required for the Consultant(s) to carry out their duties and make available all relevant reports, documents, maps, and data. The Consultant(s) team members are expected to bring their own computers. PMU shall designate counterpart personnel whom the Consultant(s) shall mentor in all aspects of the assignment.

BUDGET
(USD)

Item	CDB OSF-UKCIF	GOCD	Totals
Professional Fees	2,193,987	329,098	2,523,085
Administrative Support	-	119,164	119,164
Physical Contingencies (10% only for GOCD)	-	44,826	44,826
Project Total	2,193,987	493,088	2,687,075
%	82%	18%	100%

DRAFT TERMS OF REFERENCE
STRATEGIC FRAMEWORK FOR WATER RESOURCE MANAGEMENT IN DOMINICA

1. BACKGROUND

1.01 The Water and Sewerage Act of 1989 (WSA) governs water resources management and provides for Dominica Water and Sewerage Company Limited (DOWASCO) to be the sole national authority for the supply and distribution of potable water, provision of wastewater collection services and management of water resources. In addition to WSA, management of Dominica's water resources is captured under several other laws and ordinances. DOWASCO currently functions as Dominica's water utility while fulfilling the dual role of providing leadership on water resources management, often without the requisite support of key stakeholders within the sector. The present water resource management structure is fragmented, with planning, development, conservation and management of the resource not being undertaken in an integrated and holistic manner. These shortcomings have led to conflicts in use, allocation, and mismanagement of the water resources. The 2011 National Integrated Water Resources (IWRM) Policy have stated that these challenges exist due to the absence of a responsive governance structure, which would ensure the contribution, coordinator and collaboration amongst the many interests in the water sector of Dominica.

1.02 In addition to the 2011 IWRM Policy, the Government of Commonwealth of Dominica (GOCD) engaged a Consultancy for the preparation of a Water Sector Strategic Development Plan for Dominica in 2021 (WSSDP 2021). It is imperative that the necessary governance structure within the water sector be established to ensure the sustainability of the Water Sector Strategic Development Plan 2021 (WSSDP, 2021). Through the building blocks of the 2011 IWRM Policy and the WSSDP 2021, technical assistance consultancy services are required to review and update the 2011 IWRM Policy, as warranted, and develop legislation for the integrated management of water resources in Dominica. The Consultants will further be required to examine the suitability of the already established Independent Regulatory Commission (IRC or the Commission) and its present mandate to be expanded to that of an independent water resources management unit. The Independent Regulatory Commission was established in 2006 as the body with responsibility for regulating the electricity sector in Dominica. Presently, the primary objectives and functions of the Commission are to ensure that electricity is generated safely, reliably, and competitively, thus improving the quality of life for customers.

2. OBJECTIVE

2.01 The objective of this Consultancy is to develop a strategic framework for water resources management for consideration by GOCD and DOWASCO. The specific objectives are to:

- (a) complete a review of the IWRM Policy 2011 and update the policy as warranted, supported by proposed legislation and regulations for integrated water resources management;
- (b) complete a review of the WSSDP 2021; and
- (c) design an appropriate organisational framework for the proposed water resources management unit, including financial arrangements, human resource (HR) requirements, and institutional setting.

3. SCOPE OF SERVICES

3.01 The Consultancy will be carried out in two phases. Phase I will include a review of existing institutional and legal arrangements for water resources management in Dominica. This review will include

a gap analysis to determine options for required reforms (institutional, legal, policy, and operational) to facilitate efficient water resources management. In Phase II, based on the gap analysis and reform options selected by DOWASCO, the Consultants will develop legislation to support the IWRM Policy 2011 and the WSSDP 2021, and provide recommendations for the establishment of a water resources management unit.

3.02 The Consultants will be required to provide the services and undertake the tasks described below.

PHASE I

Inception Report

3.03 The Consultants will be required to:

Policy, Legislation and Institutional Review

- (a) review all relevant documentation, studies, reports, policy statements and legislation, including regulations in force related to water resources development and management and in particular the IWRM 2011 and the WSSDP 2021. The review will be supplemented by consultations with appropriate agencies, private sector and Non-Government Organisations;
- (b) examine the physical aspects and the various factors that influence the development and use of water resources in Dominica including projected future water needs, as identified in the WSSDP 2021;
- (c) assess the adequacy of existing water resources policy and legislation, including the effectiveness of regulatory measures, and institutional arrangements necessary for the protection, efficient and equitable use, development, conservation, management and control of Dominica's water resources taking into account future climate change projections;
- (d) based on (a), (b) and (c) above, prepare an Interim Report, including a gap analysis and rationale for recommendations on the structure and coverage of any policy, legislative and institutional reforms required;
- (e) conduct a one-day consultation to present the Interim Report to DOWASCO, and other relevant agencies as determined by DOWASCO;
- (f) based on feedback from the consultation, revise the Interim Report and review the implementation schedule as required.

PHASE II

3.04 Following acceptance of the Interim Report recommendations in (f) above by DOWASCO, the consultants will prepare (i) water resources legislation and regulations; and (ii) detailed institutional structure to facilitate improved water resources development and management.

Legislation Development

- 3.05 The legislation should address but not be limited to:
- (a) conservation and protection of water resources;
 - (b) addressing issues relating to water quantity and quality taking into account climate change projections;
 - (c) establishment of water quality standards and guidelines to protect the health of the population, the diversity of species, and the ecosystems;
 - (d) development of mechanisms to address water conflicts;
 - (e) ensuring the effectiveness of legislation and regulatory measures by providing appropriate enforcement and compliance measures; and
 - (f) provision for the establishment of a water resources management unit.

Institutional Strengthening

3.06 With the ultimate objective of facilitating the development of a technically viable water resources management unit, the Consultants shall assess the different institutional options for achieving that objective and develop the appropriate organisational structure. Accordingly, the Consultants will be required to:

- (a) conduct an assessment of the options for institutional arrangements for the establishment of a water resources management unit (WRMU) including the strengthening of the IRC to function as the WRMU;
- (b) recommend an appropriate organisational structure and staffing requirements that would allow for a degree of autonomy. The proposed structure should take into account the economic, legal and institutional, social and environmental conditions that influence water management in Dominica;
- (c) define the skill set required to implement the functional requirements of a water resources management unit. Recommend and cost a training plan to develop HR capabilities in keeping with these requirements;
- (d) draw up detailed job descriptions to reflect functional requirements for management and staff, bearing in mind existing staff capabilities and potential. The job descriptions should include responsibilities, duties, authority and lines of communication;
- (e) identify steps to establish the proposed water resources management unit and prepare a detailed time schedule;
- (f) prepare a detailed scope of work for all required actions, including corporate governance and general business administration matters and operations; and

- (g) Taking into account the IRWM 2011 and the WSSDP 2021 draft the final:
 - (i) Water Resources Management Legislation; and
 - (ii) Institutional arrangements for water resources management.

3.07 The documents will be circulated electronically to DOWASCO and other relevant agencies. The Consultants will conduct a one-day consultation to present the draft final documents to DOWASCO, and other relevant agencies as determined by DOWASCO.

3.08 Following the consultation, the Consultants will revise the document in 3.06 (g) above as required.

4. REPORTING AND DELIVERABLES

4.01 The Consultants shall commence field work within two weeks of the effective date of the contract and shall submit the following reports to DOWASCO within the time periods indicated:

Inception Report

- (a) Within two (2) weeks of commencing the assignment, the Consultants are required to submit an Inception Report. The Inception Report shall provide details of the work programme, including any additional activities which may be deemed necessary based on their initial review. The report will also detail the timing of each component of all activities to be undertaken in accordance with the Terms of Reference (TOR), the initial findings and preliminary recommendations. DOWASCO will provide comments on this report within two weeks of receipt for the purpose of clarification of methodology, verification of data and agreement on approach. The Consultants will adjust the work-programme in accordance with the comments received and agreed upon;

Interim Report

- (b) Two copies to DOWASCO, of an Interim Report within three (3) months of the commencement of the assignment. DOWASCO will provide comments on the report within three weeks of receipt. This Report should include the detailed options for institutional arrangements for water resources management together with recommendations. Following consultation and receipt of comments from DOWASCO, a final Interim Report will be prepared;

Draft Legislation and Draft Institutional arrangements for water resources management

- (c) Two copies to DOWASCO of the (i) Draft Water Resources Management Legislation and (ii) Draft institutional arrangements for water resources management documents within six weeks of acceptance of the interim Report. DOWASCO will provide comments on these Draft Final Documents within three weeks of receipt. The Consultants will adjust the draft documents according to the comments received and agreed upon;
- (d) Consultants will present the revised versions of the above-mentioned documents within two weeks of the second consultation;
- (e) Two copies to DOWASCO, of a Final Report within two weeks of acceptance by DOWASCO of the Draft Final Documents. These Documents shall also be submitted on

electronically (in appropriate formats such as Microsoft Word, Excel, and Power Point) to DOWASCO; and

Legislation

- (f) Two copies to DOWASCO, of the Draft Final Water Resources Legislation and Regulations, within six weeks of the meeting referred to at paragraph 3 (d).

5. QUALIFICATIONS AND EXPERIENCE

5.01 The consultancy team should have the necessary skills and experience (Engineering, Water Resources Management, Legislative Drafting), with principal members having at least 10 years' experience in the Caribbean or developing countries with similar conditions. The Consultant's proposal should provide Curriculum Vitae for each member of the proposed team (in a common format).

6. IMPLEMENTATION ARRANGEMENTS

6.01 The executing agency will be DOWASCO. DOWASCO will provide guidance to the Consultant on policy issues of relevance to the sector and will arrange to make available all relevant studies, reports and data relevant to completion of the exercise.

Inputs

6.02 The Consultants should indicate, prior to the field work and on the basis of their experience, the operational support is expected from DOWASCO. DOWASCO shall provide, within reasonable time, all available information related to the water sector in Dominica, including previous studies and, in addition, environmental information and all other data and information that may be reasonably requested by the Consultants.

6.03 DOWASCO shall provide facilities and services, including communications originating in Dominica, as required by the Consultants while working on assignment in Dominica.

BUDGET
(USD)

Item	CDB OSF - UKCIF	GOCD	Total
Professional Fees	195,000	29,250	224,250
Administrative Support	-	14,500	14,500
Sub Total	195,000	43,750	238,750
Physical Contingencies 5%	9,750	2,188	11,938
Price Contingency 2.3%	4,709	1,057	5,766
Project Total	209,459	46,995	256,454
%	82	18	100

DRAFT TERMS OF REFERENCE
DEVELOPMENT OF A GENDER-RESPONSIVE AND SOCIALLY INCLUSIVE
COMMUNICATIONS PLAN
FOR DOMINICA WATER AND SEWERAGE COMPANY LIMITED

1. BACKGROUND

1.01 Dominica as a small (750 square kilometres) island state recorded a Human Development Index of 0.724, ranking 94 out of 189 countries, and classified as “high human development” in 2019. Population and Housing census (September 2011) reported a population of 71,293 (males 36,411; and females 34,882), within 26,085 households. Women-headed households represented 38.1% of total households. There has been no dedicated Country Poverty Assessment since 2009, which reported 28.8% of the population as below the poverty line and 11.5% as vulnerable. Subsequent to Hurricane Maria and the onset of COVID-19, it is expected that the poverty and indigent levels will fluctuate upwards. Households that are categorised as poor/low-income, single-headed (especially women-headed household with high-dependency ratios of children, elderly, and persons with disabilities [PWDs]) face overlapping and interdependent disadvantages related to access to water and sanitation.

1.02 According to the Post Disaster Needs Assessment following Hurricane Maria, the gender differentials in the labour force participation rates (males 70.6% and females 59.5%) persist, with women over-represented in the services sectors and retaining primary responsibility for unpaid ‘reproductive duties. Women log an average 16.14 hours per week in unpaid work, compared with 7 hours for men. Access to water is especially important to quality of life as it reduces the time-use burden of women and children, who traditionally are responsible for such duties, and which stymie opportunities for social and economic well-being and livelihoods. Gender-responsive and socially inclusive programming within the Dominica Water and Sewerage Company Limited (DOWASCO) is necessary to ensure the poor and vulnerable both access and benefit from improved access to water in the Project areas. Management and skilled and unskilled construction and maintenance works in the water sector are traditionally male-oriented.

1.03 DOWASCO is the sole national authority for the supply and distribution of potable water, provision of wastewater collection services and management of water resources. DOWASCO currently functions as Dominica’s water utility providing leadership on water resources management, often without the requisite support of key stakeholders within the sector. DOWASCO’s current organisational structure consists of four departments: Engineering, Finance, Customer Service and Human Resources Development, and Operations and Maintenance. The structure includes a General Manager who reports to the Board of Directors. The four-member management team reports to the General Manager. The company currently has a staff complement of 146 employees, comprising 117 full-time and 29 part-time staff.

1.04 DOWASCO is implementing several measures to address organisational capacity issues, including personnel file upgrades and redesigning of job descriptions to improve consistency among job classes. It has taken steps to improve staff morale, while commencing cross-training across lower organisational levels to support employee enrichment, job enhancement opportunities and skill redundancy. To facilitate execution of a project of this scale, the project management component of the Project provides for strengthening of the existing Project Management Unit within DOWASCO via engagement of additional staff.

1.05 Within DOWASCO, the application of the Gender Responsive and Socially Inclusive Communication Plan will inform staff on the differential impacts on women and men consumers and promote best practice for collecting information and engaging with all stakeholders through meaningful consultation thus ensuring that the differential needs and interests of women and men consumers are considered and addressed.

2. OBJECTIVE

2.01 The objective of the consultancy is to develop a gender-responsive and socially inclusive communications plan, which should outline the most appropriate and effective means of reaching and engaging stakeholders through a consultative process to disseminate information and build stronger relationships with stakeholders.

3. SCOPE OF SERVICE

3.01 The consultant will be expected to work closely with DOWASCO and project stakeholders in carrying out the assignment. The consultant will report to and consult with the Project Coordinator.

3.02 The consultant will be responsible for designing a communications plan with strategies that are culturally sensitive, socially inclusive, gender-responsive and context specific for effective dissemination of information on water management, use, conservation, and sanitation.

3.03 The consultant shall design a three-year Communications Plan and propose a suitable framework for its implementation. The plan should be designed to mobilise support and increase the knowledge of all stakeholders and ensure, through the process of communication and consultation that the stakeholders are prepared for changes that shall occur as a result of the project.

3.04 Due to the lack of awareness on the linkages between water management and gender and social issues, the consultant will be required to propose thematic messages that shall highlight these linkages and propose how the messages will be disseminated.

3.05 In developing the Gender-responsive and Socially inclusive Communication Plan the consultant will be required to:

Communications Research

- Conduct desk review of all relevant documents and available data, policies, strategies, and reports on the situational context relating to the social and gender issues within the water sector in Dominica.
- Collect primary baseline data on persons (disaggregated by sex) or on households (disaggregated by sex of head of household) in affected communities to inform pre-Project level of satisfaction and to inform gender analysis
- Review status of ongoing water supply services advocacy, social mobilisation, communication, training, and related community activities at all levels.
- Review all existing behavioural data, focus group data, knowledge attitudes and practices studies in water sector issues including monitoring and evaluation reports and identify information gaps.
- Assess the best methodologies for collecting information and engaging with stakeholders through consultation with government partners.

- Determine the various levels and types of stakeholders that must be addressed in the plan. Segment the stakeholder audiences into classified groups useful for strategic purposes. Key stakeholders should include but not limited to the following groups: women's group, men, youth organisations, PWDs, elderly, Government of the Commonwealth of Dominica (GOCD) stakeholders, single-headed households, and community groups from across the 21 communities.
- Develop a comprehensive profile for the communities in the Project areas.
- Conduct a communications analysis which should include behaviour analysis on existing messages and issues related to the topic, stakeholders' analysis, channel analysis, communication objectives, developing strategies and activities, and monitoring and evaluation indicators.
- Identify and research similar communication plans and tools that have successfully changed attitudes and behaviours. Utilise the key success factors and lessons to add value to the Communications Plan.
- Draft report on the communications research activities and map the way forward.

Customer Satisfaction Survey and Stakeholders' Engagement

- Design pre-Project customer satisfaction survey and administer during stakeholder consultations to assess and monitor the quality of water services as a result of the improved water management and systems.
- Validate the key issues that should be dealt with for each key stakeholder group, and design strategy and key messages to be communicated in the design of the plan.
- Design and implement capacity-building and sensitisation for DOWASCO staff for the implementation, monitoring and evaluation of the plan.
- Design outreach programme on water conversation, sanitation and other related issues and design of communication materials, tools and templates on water conservation and sanitation for beneficiary communities.
- Design key messages for various levels of stakeholders on the linkages between gender, social issues and water management and conduct pre-testing on the initial messages for various social media platforms.
- Based on background communications research and consultations, identify the most appropriate communications channels, dissemination methods and media such as video, print, web/online media, traditional and non-traditional media, and social media, among others, to effectively communicate key messages to each stakeholder group. Design strategies should reach each level of stakeholders.

Communications Plan

- Compile stakeholders' feedback and design draft communications plan with feedback mechanism(s) designed to engage beneficiaries and with costed operational plan.
- Design standardised communication message templates on water conservation and sanitation issues for DOWASCO for future publications.
- Design and administer of post-Project customer satisfaction survey.

4. REPORT PREPARATION

4.01 The consultants will be required to submit the following to GOCD:

- (a) An Inception Report, no later than two weeks after commencement of the assignment setting out the work plan for completion of the assignment.
- (b) An Interim Report - three months following commencement of the consultancy, including findings from the desk review and communications research conducted including primary data on the communities. The report should include recommendations and approaches (including any changes from inception report) for the way forward on the development of the plan and capacity-building needs on water conservation and sanitation.
- (c) A final Report on consultations, identifying stakeholders' differential needs and priorities incorporated into the plan and a comprehensive report on the customer satisfaction surveys' results.

Expected Outputs

4.02 The expected outputs of this consultancy include:

- (a) An Inception Report which outlines the approaches that will be taken to complete the assignment.
- (b) An Interim Report with findings from communications research, desk review and profiles.
- (c) A gender-responsive and socially inclusive Communications Plan that gives a broad framework for how the strategies should be rolled out in phases over a three-year period and a costed framework inclusive of strategies for sustainability.
- (d) Survey reports.
- (e) Report on capacity-building/sensitisation workshops.

5. TIMING AND QUALIFICATIONS

5.01 The consultant shall be assigned a contract period of 90 days. The consultant must meet all the following essential requirements:

- (a) A completed master's degree in Communications, Sociology, Business and Social Development Marketing, or other related fields.

- (b) Professional training and experience in gender and development and gender analysis.
- (c) A minimum of 5 years' experience in promoting social inclusion and gender equality in a development cooperation context.
- (d) Proven experience in working with vulnerable populations including socially excluded groups utilising stakeholders' engagement guidelines, with an understanding of rights-based approaches.
- (e) Excellent communication in English and excellent reporting writing skills and understanding of the national context.
- (f) Experience in behavioural change continuum and communication for development model.
- (g) Strong analytical and organisational skills.

DRAFT BUDGET
(USD)

ITEM	CDB OSF- UKCIF	GOCD	TOTAL
A. CDB's Contribution	186,400		186,400
B. Counterpart Contribution		20,000	20,000
Contingency (5%)	9,320	1,000	10,320
Total	195,720	21,000	216,720
%	90	10	100

RESULTS MONITORING PLAN

Indicator	Baseline	Year 2021	Year 2022	Year 2023	Year 2024	Responsibility for Data Collection
1.1 Number of households benefiting from improved water supply (disaggregated by sex of head of household) (#)	0; 2/28/2021					DOWASCO (annual) Reports and Customer Satisfaction Survey
1.2 Unplanned water supply disruptions due to high turbidity (%)	70; 2/28/2021					DOWASCO (annual) Reports
1.3 Turbidity during extreme rainfall events (Nephelometric Turbidity Units) (#)	80; 2/28/2021					DOWASCO (annual) Reports
1.4 Non-revenue water (%)	58.5; 2/28/2021					Consultants' Reports and DOWASCO (annual) Reports
2.1 Number of persons benefiting from improved wastewater treatment (disaggregated by sex) (#)	2842; 9/30/2019					DOWASCO (annual) Report
2.2						
3.1 Operational and maintenance cost efficiency (\$/annum)	2.1mn; 2/28/2021					Consultants' Reports and DOWASCO Reports
3.2 Customer evaluation of consistency, potability and satisfaction of water supply (4-point scale) disaggregated by sex of household head (#)	TBD; 2/28/2021					

Indicator	Baseline	Year 2021	Year 2022	Year 2023	Year 2024	Responsibility for Data Collection
1.1 New District Meter Area(s) introduced (#)	0; 2/28/2021					Consultants Reports and DOWASCO monitoring reports
1.2 Construction of new intakes (#)	0; 2/28/2021					Consultants Reports and DOWASCO
1.3 Capacity of 5 WTPs (m ³ /h)	0; 2/28/2021					Consultants Reports and DOWASCO monitoring
1.4 Capacity of WTP tanks (m ³)	0; 2/28/2021					Consultants Reports and DOWASCO monitoring reports
1.5 Capacity of Storage tanks (m ³)	0; 2/28/2021					Consultants Reports and DOWASCO monitoring reports
1.6 Supply line (km)	0; 2/28/2021					Consultants Reports and DOWASCO (annual) Reports
2.1 SCADA Monitoring (Yes/No)	No; 2/28/2021					Consultant Report and DOWASCO (annual) Reports
3.1 Number of new house connections in network extension areas installed (#)	0; 2/28/2021					Consultants Reports and DOWASCO
3.2 Extension and replacement of existing sewer network (km)	2.3; 2/28/2021					Consultants Reports and DOWASCO (annual) Reports
3.3.1 Capacity of central wastewater treatment plant for sewage (m ³ /day)	0; 2/28/2021					Consultants Reports and DOWASCO (annual)
3.3.2 Capacity of central wastewater treatment plant for pollution load (PE ₅₀)	0; 2/28/2021					Consultants Reports and DOWASCO (annual)
3.4 Sea outfall with HDPE SDR11 PN16 pipe (#)	0; 2/28/2021					Consultants Reports and DOWASCO (annual)
4.1 Number of employees trained in the use of recommended management of systems and software (disaggregated by sex). (#)	0; 2/28/2021					Consultants Reports and DOWASCO (annual)
4.2 Recommended management systems implemented in DOWASCO (MIS, IT, M&E, Accounting) (Yes/No)	No; 2/28/2021					Consultants Reports and DOWASCO (annual)

Indicator	Baseline	Year 2021	Year 2022	Year 2023	Year 2024	Responsibility for Data Collection
4.3 Strategic Water Sector Framework drafted (Yes/No)	No; 2/28/2021					Consultants Reports and DOWASCO (annual)
4.4 Gender-responsive and Socially Inclusive Communications Plan developed and implemented (Yes/No)	No; 2/28/2021					Consultants Reports and DOWASCO (annual)
4.5 Baseline and follow up Customer Survey implemented. Disaggregated by sex of household head (Yes/No)	No; 9/28/2021					Consultants Reports and DOWASCO (annual)

PROJECT COSTS PHASING AND FINANCING PLAN

Components	OSF-USD	Total	COUNTERPART		Total
	UKCIF Resources		GOCD	DOWASCO	
2021 TOTAL					
Project Preparation			2,309,902	153,844	2,309,902
Land		-	-	-	153,844
Base Cost		-	2,309,902	153,844	2,463,746
Physical Contingency		-	-	-	-
Price Contingency		-	-	-	-
Total Project Cost		-	2,309,902	153,844	2,463,746
Interest During Implementation		-	-	-	-
Commitment Fees		-	-	-	-
Total Financing		-	2,309,902	153,844	2,463,746
Percentage Financing	0.00%	-	93.76%	6.24%	100.00%
2022 TOTAL					
Project Preparation		-	577,476	-	577,476
Land		-	-	153,846	153,846
Infrastructure Works	13,468,696	13,468,696	2,305,088	-	15,773,784
Engineering and Construction-related Services	982,148	982,148	198,916	-	1,181,064
Goods	214,771	214,771	-	-	214,771
Institutional Strengthening	195,000	195,000	43,750	-	238,750
Other Project Support Services	186,400	186,400	47,960	-	234,360
Project Management	243,774	243,774	335,876	-	579,650
Base Cost	15,290,789	15,290,789	3,509,066	153,846	18,953,701
Physical Contingency	1,388,659	1,388,659	251,887	-	1,640,546
Price Contingency	417,313	417,313	94,024	3,848	515,185
Total Project Cost	17,096,761	17,096,761	3,854,977	157,694	21,109,432
Interest During Implementation	-	-	-	-	-
Commitment Fees	-	-	-	-	-
Total Financing	17,096,761	17,096,761	3,854,977	157,694	21,109,432
Percentage Financing	80.99%	80.99%	18.26%	0.75%	100.00%
2023 TOTAL					
Land		-	-	153,848	153,848
Infrastructure Works	10,043,879	10,043,879	1,565,884	-	11,609,763
Engineering and Construction-related Services	982,150	982,150	198,917	-	1,181,067
Goods	11,193	11,193	-	-	11,193
Project Management	208,280	208,280	335,890	-	544,170
Base Cost	11,245,502	11,245,502	2,100,691	153,848	13,500,041
Physical Contingency	1,015,125	1,015,125	173,385	-	1,188,510
Price Contingency	636,560	636,560	115,124	7,788	759,472

Components	OSF-USD		Counterpart		Total
	UKCIF Resources	Total	GOCD	DOWASCO	
Total Project Cost	12,897,187	12,897,187	2,389,200	161,636	15,448,023
Interest During Implementation	-	-	-	-	-
Commitment Fees	-	-	-	-	-
Total Financing	12,897,187	12,897,187	2,389,200	161,636	15,448,023
Percentage Financing	83.49%	83.49%	15.47%	1.05%	100.00%
2024 TOTAL					
Land		-	-	38,462	38,462
Engineering and Construction-related Services	245,538	245,538	49,730	-	295,268
Project Management	42,446	42,446	83,974	-	126,420
Base Cost	287,984	287,984	133,704	38,462	460,150
Physical Contingency	2,066	2,066	4,199	-	6,265
Price Contingency	34,874	34,874	10,604	2,956	48,434
Total Project Cost	324,924	324,924	148,507	41,418	514,849
Interest During Implementation	-	-	-	-	-
Commitment Fees	-	-	-	-	-
Total Financing	324,924	324,924	148,507	41,418	514,849
Percentage Financing	63.11%	63.11%	28.84%	8.04%	100.00%
TOTALS					
Project Preparation		-	2,887,378	-	2,887,378
Land		-	-	500,000	500,000
Infrastructure Works	23,512,575	23,512,575	3,870,972	-	27,383,547
Engineering and Construction-related Services	2,209,836	2,209,836	447,563	-	2,657,399
Goods	225,964	225,964	-	-	225,964
Institutional Strengthening	195,000	195,000	43,750	-	238,750
Other Project Support Services	186,400	186,400	47,960	-	234,360
Project Management	494,500	494,500	755,740	-	1,250,240
Base Cost	26,824,275	26,824,275	8,053,363	500,000	35,377,638
Physical Contingency	2,405,850	2,405,850	429,471	-	2,835,321
Price Contingency	1,088,747	1,088,747	219,752	14,592	1,323,091
Total Project Cost	30,318,872	30,318,872	8,702,586	514,592	39,536,050
Interest During Implementation	-	-	-	-	-
Commitment Fees	-	-	-	-	-
Total Financing	30,318,872	30,318,872	8,702,586	514,592	39,536,050
Percentage Financing	76.69%	76.69%	22.01%	1.30%	100.00%

INFRASTRUCTURE PHYSICAL AND NEEDS ASSESSMENT

ASSESSMENT OF CURRENT STATUS OF KEY INFRASTRUCTURE

1. An assessment of the physical condition of the main water infrastructure components was carried out. A summary of the assessed components is as follows:

- (a) **Intakes:** – Generally speaking the intakes were in regular condition, but in almost all cases some improvement or rehabilitation measures would be necessary. Some intakes were completely destroyed by Hurricane Maria and have not been rebuilt since (e.g. Bagatelle, Coulibistrie) and only a temporary structure has been put in place, which requires immediate action. However, more than 60% of the intakes have a structure in very good or good/regular condition. One of the main weaknesses of the intake concerns their access. More than half of the intakes have a difficult or dangerous access, which hinders any works at the intake (e.g. repairs, cleaning etc.) Regarding the outlet valves and piping, no larger concerns arose during the visits, at least in the vicinity of the intakes. Although most of the outlet valves are relatively old (except in the case of the rehabilitated intakes), they seem to provide an acceptable performance. **Intakes that demand 80% or more of spring flow:** The majority of water intakes visited found an abundance in water availability, i.e. enough to supply the existing demand. The captured water volume was a small fraction of the stream flow. However, at some intakes the stream flow was almost completely captured by the water supply systems, leaving a small flow remaining as an ecological baseflow.
- (b) **Tanks:** – Over 85% of the tanks were in very good/regular condition regarding structure and roof. Deficiencies were mostly observed regarding the condition of ladders, covers and fences. Access to the tanks was mostly very good (84%), since they are usually constructed in much more accessible locations than intakes, and their access roads were mostly well maintained. Float valves are a very important issue for the correct operation of the tanks and only 11% of them were assessed as being in very good condition. More than 30% were either in poor condition or not functioning. There are currently no operational bulk meters installed at the outlets of tanks. Some bulk meters were observed (22) but all of them were not functioning. The hydraulic equipment of the tanks (including inlet, outlet, washout and overflow piping and valves) was mostly in good/regular condition. Only between 9-15% of the piping and valves were in very good condition. **The most critical structural problems found** were huge cracks on the tank walls that generated leaks of considerable flow.
- (c) **Pumping Stations:** - In general terms, the pumping stations were found to be in good condition, with pumps in excellent condition (most of them very new). 94% of the pumps and 100% of the motors were assessed as very good or good/regular. The electrical and instrumentation equipment was also in very good condition. Manometers were in poor condition or not functioning in some pumping stations (38%) and should be replaced. The effects of Hurricane Maria on the pumping stations were mainly the disruption of power supply, but the civil works and equipment remained mostly undamaged. As a result, a big effort has been carried out by DOWASCO (with aid from several donors) to supply emergency power generators to almost all pumping stations. Similarly, piping and valves were mostly in good condition (over 80%). More than half of the assessed pumping stations had a functioning surge protection (bladder tank), but in 43% the bladder tank was not functioning. A surge protection should be implemented in these cases.

SUMMARY OF ASPECTS IN NEED OF IMPROVEMENT

2. The following are the major deficiencies observed in the components of the five prioritised water systems.

Component	Major Deficiencies
Project Area: WA-1	
Intakes	<ul style="list-style-type: none"> • Provision of redundancy for the main supply system intake in Springfield/Checkhall
Supply lines	<ul style="list-style-type: none"> • Lack of hydraulic control in the supply lines prevents an efficient water distribution to all tanks
Storage Tanks	<ul style="list-style-type: none"> • Maintenance works due in some tanks (concrete improvement, piping, valves, etc.) • Lack of bulk water meters
Project Area: Roseau Valley (WA34-37)	
Intakes	<ul style="list-style-type: none"> • Lack of water during dry season in Morne Prosper intake • Large problems with siltation and high-turbidity episodes in Trafalgar and Wotten Waven intakes. • Very difficult access to intakes. No vehicle access
Supply lines	<ul style="list-style-type: none"> • Sections of line above ground are exposed to damage (landslides, tree fall, rock fall, etc.) • Very difficult access for pipeline maintenance
Water Treatment	<ul style="list-style-type: none"> • No water treatment. Water quality is very susceptible to rainfall- related high-turbidity episodes. Chlorination is conducted without proper control (i.e. flow-controlled chlorination)
Storage Tanks	<ul style="list-style-type: none"> • Lack of storage tank in Laudat • Maintenance works due in some tanks (concrete improvement, piping, valves, etc.) • Insufficient storage capacity • Lack of bulk water meters
Project Area: West Coast (WA 3 – 11)	
Intakes	<ul style="list-style-type: none"> • Construction of a new intake in the southern part of the Water Area to complement Picard as main water source • Improvements in Picard new intake
Supply lines	<ul style="list-style-type: none"> • Reinforcement of Picard supply line (eventually capacity increase)
Water Treatment	<ul style="list-style-type: none"> • Improvement of water treatment in Picard • Implementation of water treatment for the new intake
Storage Tanks	<ul style="list-style-type: none"> • Increase of storage capacity • Maintenance works due in some tanks (concrete improvement, piping, valves, etc.) • Lack of bulk water meters
Project Area: East Coast (WA 20 – 24)	
Intakes	<ul style="list-style-type: none"> • Temporary intake in Grand Fond (WA22) needs immediate reconstruction or relocation • Castle Bruce intake needs a new sluice gate • Lack of water during dry season in Castle Bruce, Morne Jaune and Riviere Cyrique intakes • Problems with siltation and high-turbidity episodes in San Sauveur • Very difficult access to intakes. No vehicle access
Supply lines	<ul style="list-style-type: none"> • Temporary supply line in Morne Jaune (WA23)

Component	Major Deficiencies
	<ul style="list-style-type: none"> • Sections of line above ground are exposed to damage (landslides, tree fall, rock fall, etc.) • Very difficult access for pipeline maintenance
Water Treatment	<ul style="list-style-type: none"> • No water treatment. Water quality is very susceptible to rainfall- related high-turbidity episodes. Chlorination is conducted without proper control (i.e. flow-controlled chlorination).
Storage Tanks	<ul style="list-style-type: none"> • Maintenance works due in some tanks (concrete improvement, piping, valves, etc.) • Insufficient storage capacity • Lack of bulk water meters
Project Area: Calibishie (WA 17)	
Intakes	<ul style="list-style-type: none"> • Relocation or improvement of current intake • Problems with siltation and high-turbidity episodes • Very difficult access to intake. No vehicle access
Supply lines	<ul style="list-style-type: none"> • Drive mains to ram pumps are very vulnerable. A new pipe route needs to be implemented. • Very difficult access for pipeline maintenance near intake
Water Treatment	<ul style="list-style-type: none"> • No water treatment. Water quality is very susceptible to rainfall- related high-turbidity episodes. Chlorination is conducted without proper control (i.e. flow-controlled chlorination)
Pumping Stations	<ul style="list-style-type: none"> • Existing ram pumps need to be replaced by new electrical pumps
Storage Tanks	<ul style="list-style-type: none"> • Poor condition of existing tanks. Rehabilitation or substitution is required. • Insufficient storage capacity

MULTI-CRITERIA DECISION ANALYSIS AND PRIORITISATION OF WATER AREAS

FIGURE 1: STEPS OF DECISION MAKING WITH MCDA



1. OBJECTIVE OF THE MULTI-CRITERIA DECISION ANALYSIS:

1.01 The objective is to prioritise the components and water areas that require detailed assessments and possible investments to increase their resilience.

2. SELECTION OF CRITERIA

2.01 Selection of criteria and indicators as outlined at (a) and (b) below:

(a) Criteria: Vulnerability Assessment

INDICATORS USED TO EVALUATE VULNERABILITY

	Exposure	Fragility	Resilience
Intakes	<ul style="list-style-type: none"> • Landslide risk • Water availability 	<ul style="list-style-type: none"> • Intake type • Physical condition 	<ul style="list-style-type: none"> • Access
Supply lines	<ul style="list-style-type: none"> • Landslide risk 	<ul style="list-style-type: none"> • Pipe installation • Physical condition 	<ul style="list-style-type: none"> • Access
Tanks	<ul style="list-style-type: none"> • Landslide risk 	<ul style="list-style-type: none"> • Material • Physical condition 	<ul style="list-style-type: none"> • Access
Pumping Stations	<ul style="list-style-type: none"> • Landslide risk 	<ul style="list-style-type: none"> • Physical condition 	<ul style="list-style-type: none"> • Access • Power Supply

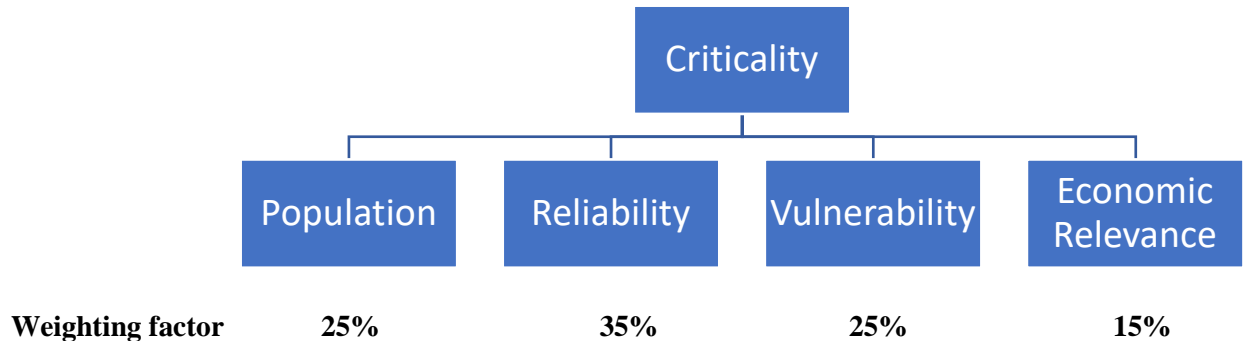
(b) Criteria: Criticality Score

Population	Design population for each WA
Reliability*	This criterion is an aggregated index considering water demand deficit, storage volume deficit and continuity in each WA.
Vulnerability	Vulnerability Score
Economic Relevance	According to the relevance granted in the National Physical Development Plan, economic and touristic relevance, etc.

2.02 ***Reliability** was constructed with three sub-criteria: water demand deficit, storage volume deficit and reliability. *Water demand deficit* was the difference between water currently being supplied to each WA and the future water demand in 2049. *Storage volume deficit* was defined as the current storage volume in each WA vs the required storage volume. *Reliability* considered the continuity of service currently existing in each WA. That means, those areas that currently have more problems in terms of continuous water supply (whatever the reasons: pipe burst, water scarcity at the intake, lacking storage capacity, etc.) were valued with a higher score, and therefore, higher *criticality*.

3. WEIGHTING OF CRITERIA

FIGURE 2: AGGREGATION CONCEPT FOR CRITICALITY SCORE AND WEIGHTING FACTORS



4. EVALUATION OF CRITERIA

4.01 For each criterion evaluation scales were defined to assess each component in a systematic and transparent way. Indicators were assessed on a qualitative scale from 1 to 5, 1 being least vulnerable and 5 being most vulnerable.

4.02 **Overall Vulnerability of WA:** The aggregation of the vulnerability scores of each component resulted in an overall vulnerability score for each Water Area. The five highest ranked most vulnerable WA according to the results of the assessment were Bagatelle (WA 28), Riviere Cyrique (WA 24), Morne Jaune (WA 23), Grand Fond (WA 22) and Wotten Waven/Trafalgar (WA 35/36).

4.03 **Population:** Census data and forecast data to 2049 was utilised in the assessment of the population. The most populated areas were WA-1 and WA 3-11.

4.04 **Reliability:** The reliability indicator was assessed aggregating the three sub-indicators: Water demand deficit, storage volume deficit and continuity. The least reliable Water Areas were Morne Prosper (WA 34), Laudat (WA 37) and West Coast (WA 3-11). The most reliable Water Areas were Vielle Casse (WA 13), Grand Fond (WA 22) and Bagatelle (WA 28).

4.05 **Economic Relevance:** This assessment was based on the economic as well as strategic importance of each WA from a development point of view. The assessment was based on the NPDP. As indicated in this document, Greater Roseau (WA 1), Portsmouth (WA 3-11) and Marigot (WA 18-19) were ranked with the maximum score. Roseau Valley WA, Wotten Waven/Trafalgar (WA 35/36) and Laudat (WA 37), were assigned a score of 4, since they are not directly integrated in the Greater Roseau Area but their touristic relevance is very high. Castle Bruce (WA 20), Grandbay (WA 30) and La Plaine (WA 25) were scored with a 2, since they are considered tertiary centres in the NPDP. The rest of the WA were scored with 1.

4.06 **Criticality:** The aggregation of the four last indicators (Population, reliability, economic relevance and vulnerability) according to their corresponding weighting factors resulted in the overall criticality score. According to these results the most critical WA is West Coast Area (WA 3/11), followed by WWM (WA 18/19), Roseau Area (WA 1), Wotten Waven/Trafalgar (WA 35/36) and Laudat (WA 37).

TABLE 1: CRITICALITY SCORE FOR EACH WATER AREA

Rank	WA	Name	Population	Reliability	Overall Vulnerability	Economic Relevance	Overall Criticality
1	WA3_11	West Coast	5.00	4.00	3.05	5.00	4.16
2	WA 18_19	WWM	4.00	3.00	2.29	5.00	3.37
3	WA1	Roseau	5.00	1.80	2.70	5.00	3.30
4	WA 35_36	Wotten Waven/Trafalgar	3.00	2.60	3.26	4.00	3.08
5	WA37	Laudat	1.00	4.20	2.60	4.00	2.97
6	WA33	Giraudel	3.00	3.00	3.14	1.00	2.73
7	WA 25	La Plaine	2.00	3.80	2.37	2.00	2.72
8	WA 30	Grand Bay	4.00	2.20	2.49	2.00	2.69
9	WA17	Calibishie	2.00	3.40	3.20	1.00	2.64
10	WA 34	Morne Prosper	1.00	4.40	2.62	1.00	2.59
11	WA42	Kalinago Territory	4.00	2.20	2.52	1.00	2.55
12	WA20	Castle Bruce	2.00	2.80	2.99	2.00	2.53
13	WA14_15	Paix Bouche	3.00	2.60	2,58	1.00	2.45
14	WA32	Bellevue Chopin	2.00	2.80	2.80	1.00	2.33
15	WA31	Soufriere	3.00	2.20	2.40	1.00	2.27
16	WA44	Pond Casse	3.00	2.20	2.40	1.00	2.27
17	WA23	Morne Jaune	1.00	2.80	3.45	1.00	2.24
18	WA38	Cochrane	1.00	3.40	2.34	1.00	2.18
19	WA24	Riviere Cyrique	1.00	2.40	3.50	1.00	2.12
20	WA26	Delices	2.00	1.80	3.08	1.00	2.05
21	WA12	Penville	2.00	2.20	2.45	1.00	2.03
22	WA21	San Saveur	2.00	2.20	2.29	1.00	1.99
23	WA22	Grand Fond	2.00	1.40	3.30	1.00	1.97
24	WA16	Bense	1.00	2.20	3.07	1.00	1.94
25	WA28	Bagatelle	1.00	1.40	3.67	1.00	1.81
26	WA43	Boetica	1.00	1.60	2.72	1.00	1.64
27	WA13	Vielle Casse	1.00	1.40	2.75	1.00	1.58

5. WATER AREA PRIORITISATION

5.01 The results obtained, the most critical areas are West Coast Area (WA 3-11), followed by WWM (WA 18/19), Roseau Area (WA 1), Wotten Waven/Trafalgar (WA 35/36) and Laudat (WA 37).

OVERVIEW OF ALTERNATIVES FOR THE PRIORITISED WATER SUPPLY SYSTEMS

WA-1 Roseau	
Water Intake	<ul style="list-style-type: none"> • New intake River Claire • Access Road
Alternative ROS-1	<ul style="list-style-type: none"> • Supply line to River Claire WTP • WTP River Claire (90l/s) • Supply line to Goodwill • Access road to WTP • Electrical connection WTP • Mini-turbine • Storage tank treated water
Storage Tanks	<ul style="list-style-type: none"> • Antrim WTP, 2,500 m³ • Goodwill / Stockfarm 650 m³ • Castle Comfort 450 m³ • Loubiere 480 m³ • Pointe Michel 400 m³ • Fortune 200 m³ • Tarreau 150 m³ • Installation of water level sensors • Replacement and rehabilitation of float valves
Hydraulic Control	<ul style="list-style-type: none"> • 30 flow control valves
Improvement of distribution network	<ul style="list-style-type: none"> • Buk water meters • Implementation of 20 DMAs with pressure zones
SCADA System	<ul style="list-style-type: none"> • Installation of SCADA system
Supply line expansion	<ul style="list-style-type: none"> • Expansion of the existing supply line (DN 200 – DN 600)
Roseau Valley	
Water intake and supply line	<ul style="list-style-type: none"> • New intake Providence River • Access road • Supply line to Springhill WTP
WTP	<ul style="list-style-type: none"> • WTP Springhill (22 l/s) • Electrical connection WTP • Mini-turbine • Storage tank treated water
Transmission lines	<ul style="list-style-type: none"> • Interconnection of WA • River crossings
Storage tanks	<ul style="list-style-type: none"> • Trafalgar 175 m³ • Wotten Waven 150 m³ • Shawford 80 m³ • Laudat 175 m³ • Maintenance of Copthall tank • Including bulk water meters and water level sensors • 5 flow control valves
Pumping stations	<ul style="list-style-type: none"> • New pumping station to Laudat • New pumping main

Improvement of distribution network	<ul style="list-style-type: none"> • Bulk water meters • Implementation of 6 DMAs with pressure zones
SCADA System	<ul style="list-style-type: none"> • Installation of SCADA system
West Coast Project	
Improvement Picard intake	<ul style="list-style-type: none"> • Improvement Picard intake
WTP Picard	<ul style="list-style-type: none"> • WTP Picard (80 l/s) • Electrical connection WTP • Storage tank treated water 1,000 m³
Alternative WC-1	<ul style="list-style-type: none"> • New intake Coulibistrie • Supply line • WTP Morne Rchette (30 l/s) • Storage tank treated water 1,000 m³ • Micro-turbine • Booster station • Interconnection DN 150 to Mero / St Joseph • New pumping station Grand Savanne • Expansion of existing supply line
<ul style="list-style-type: none"> • Storage tanks 	<ul style="list-style-type: none"> • New tank Salisbury (400 m³) • New tank Grand Savanne (50 m) • New tank in Lagoon (390 m³) • New tank in Glanvillia area (850 m³) • New tank in Picard (250 m³) • New tank in Coulibistrie (125 m³) • New tank in Savanne Paille (50 m³) • New tank in Dublanc (75 m³ m³) • Bulk water meters and water level sensors • 14 flow control valves
Improvement of distribution network	<ul style="list-style-type: none"> • Bulk water meters • Implementation of 14 DMAs with pressure zones
SCADA system	<ul style="list-style-type: none"> • Installation of SCADA system
East Coast	
Water intake and supply line Grand Fond	<ul style="list-style-type: none"> • New intake Grand Fond • Access road • Supply line to Grand Fond WTP
WTP	<ul style="list-style-type: none"> • WTP Grand Fond (6 l/s) • Electrical connection WTP • Storage tank treated water 900 m³
Storage tanks	<ul style="list-style-type: none"> • Castle Bruce 250 m³ • San Sauveur tank 45 m³ • Morne Jaune 75 m³ • Maintenance to existing tanks • Including bulk water meters and water level sensors • 9 flow control valves
Alternative EC-1	<ul style="list-style-type: none"> • Interconnection of WA 22-24 • New WTP Castle Bruce (10 l/s) • Rehabilitation of existing irrigation system

Improvement of distribution network	<ul style="list-style-type: none"> • Bulk water meters • Implementation of 9 DMAs with pressure zones
SCADA System	<ul style="list-style-type: none"> • Installation of SCADA system
Calibishie	
WTP	<ul style="list-style-type: none"> • WTP Calibishie (5 l/s) • Electrical connection WTP • Connection to existing irrigation system • Supply line to new Calibishie tank
rehabilitation of Calibishie irrigation system	<ul style="list-style-type: none"> • Rehabilitation works in intake • Construction of access road/path to intake • Rehabilitation of river crossings • Improvement of pipeline appurtenances • Replacement of pipeline sections
Storage tanks	<ul style="list-style-type: none"> • Calibishie tank 180 m³ • Including bulk water meters
Improvement of distribution network	<ul style="list-style-type: none"> • Bulk water meters • Implementation of 1 DMA with pressure zones

INFRASTRUCTURE PRIORITISATION FRAMEWORKS AND PROJECT SELECTION

APPROACH AND CRITERIA

1. Infrastructure Prioritisation Framework (IPF) – using the World Bank’s IPF methodology – has been developed for the prioritisation of the different subprojects. This framework is based on multi-criteria decision analysis (MCDA) approaches that:

- (a) Identify the ‘best’ value investment options – as measured in the Social and Environmental (SE) and Financial and Economic (FE) achievement scores.
- (b) Rank the subprojects in order of preference for investment purposes based on the SE and FE scores.

S-E Policy-decision Criteria from NRDS2030 as determined by stakeholders		Impact-Achievement criteria		
Achievement goals	Determined value %	Interpretation of NRDS2030	Impact weight %	achievement score %
Population with un-interrupted water supplies (% covered)	50	Increase in resilience of subproject system		
	20	Increase water-use efficiency		
Socially-inclusive communications plan	10	Communication plan developed for communities		
Urgent action taken to protect catchments	20	Catchment protection plan implemented		
	100%	Total Social & Environmental SE Score		0%

F-E Efficiency of investment allocation in WS		Impact-Achievement criteria		
Achievement goals	Determined value %	Interpretation of NRDS2030	Impact weight %	achievement score %
OPEX cost for Water Supplies	50	Water: Lowest per capita capital cost for subprojects		
W&S to areas with high economic potnl	40	Water : Lowest O&M/capita cost scores highest		
	10	Local W&S services to support economic growth		
	100%	Total Financial-economic FE Score		0%

TABLE 1: SUB-PROJECTS RANKED AGAINST SOCIO-ENVIRONMENTAL

Subproject	Rank	SE%	CAPEX	CAPEX Cumulative total
6. WS East Coast – Castle Bruce	1 st	75	4,71	4,71
7. WS East Coast-Grand Fond	2 nd	74	4,35	9,05
3. WS Calibishie	3 rd	70	1,59	10,64
4. WS West Coast-Colibistrie	4 th	68	6,32	16,96
2. WS Roseau Valley	5 th	63	5,67	22,64
5. WS West Coast-Picard	6 th	51	10,64	33,28
1.WS Roseau WA-1	7 th	40	3,13	36,41

Key:

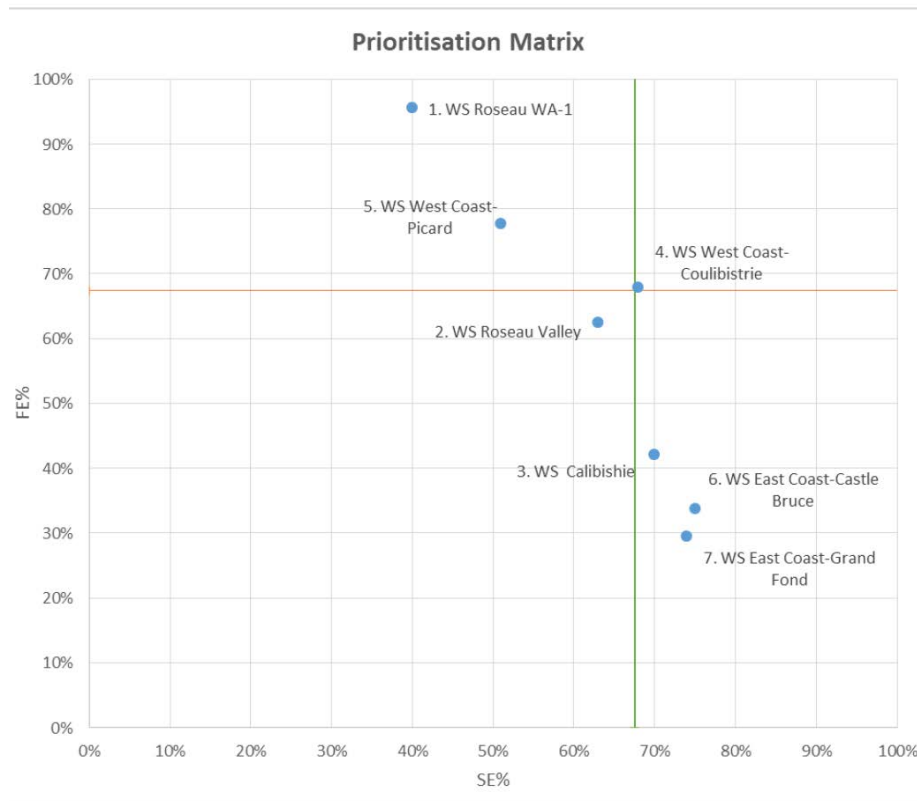
Less than CAPEX Investment Budget available USD mn
Up to 8.99% over CAPEX Budget
10% or more over CAPEX Investment Budget available USD mn

TABLE 2: SUB-PROJECTS RANKED AGAINST FINANCIAL-ECONOMIC (FE)

Subproject	Rank	SE%	CAPEX	CAPEX Cumulative total
1.WS Roseau WA-1	1 st	96	3,13	3,13
5. WS West Coast-Picard	2 nd	78	10,64	13,77
4. WS West Coast-Colibistrie	3 rd	68	6,32	20,09
2. WS Roseau Valley	4 th	63	5,67	25,77
3. WS Calibishie	5 th	42	1,59	27,36
6. WS East Coast – Castle Bruce	6 th	34	4,71	32,06
7. WS East Coast-Grand Fond	7 th	30	4,35	36,41

Key:

Less than CAPEX Investment Budget available USD mn
Up to 8.99% over CAPEX Budget
10% or more over CAPEX Investment Budget available USD mn



GENERAL CONSIDERATION FOR PROJECT SELECTION

(a) **Precarious systems----urgent improvement needed---largest increase in resilience:**

West Coast (WC) Coulibistrie system and East (EC) Grand Fond System

(b) **Systems affected by drought and landslides:**

EC Castle Bruce System, Roseau Valley and Calibishie

(c) **Areas with largest storage capacity deficit:**

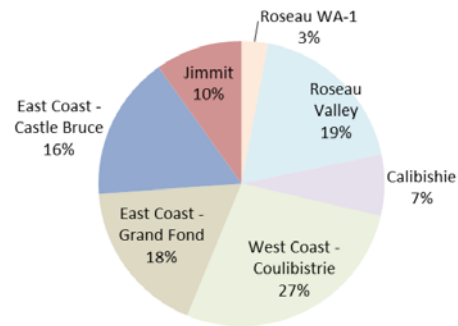
- (i) Coulibistrie
- (ii) Castle Bruce
- (iii) Wotten Waven
- (iv) Trafalgar
- (v) Sailsbury

(d) **Urgency in improvement measures:**

Intake system (intake + WTP + supply lines) > Storage capacity > improvement distribution networks (DMA)

INVESTMENT COST SUMMARY

Project	Investment Cost (USD)
Roseau WA-1	688,892
Roseau Valley	4,295,544
Calibishie	1,589,273
West Coast - Coulibistrie	6,320,222
West Coast – Picard	0
West Coast – Grand Fond	4,047,029
East Coast – Castle Bruce	3,741,803
Jimmit	2,256,323
Sub-Total	22,939,097
General Cost (5%)	1,146,955
Contingencies (10%)	2,293,910
Total	26,379,962



SCADA monitoring has been assigned to project Roseau WA-1

LOTS' BUDGET

Lot	Investment Cost (USD)
Lot 1 – DMA WA-1	0
Lot 2 – WTP	8,451,329
Lot 3 – Roseau Valley/Calibishie	3,073,331
Lot 4 – West Coast	4,030,432
Lot 5 – East Coast	5,127,683
Lot 6 – Jimmit WWTP	2,256,323
Sub-Total	22,939,097
General Costs (5%)	1,146,955
Contingency (10%)	2,293,910
Total	26,379,962

LIST OF DESIGN CRITERIA – REGULATIONS, STANDARDS AND PROTOCOLS

Component/Designs	Requirement/Criteria	Standard/Specification/Protocols
Water Treatment Plants	Water quality standards for drinking water	WHO Standards and Guidelines
Wastewater Treatment Plant and Outfall	Environmental and Wastewater Treatment	<p>LBS Protocol - for the determination of the required effluent quality.</p> <p>According to the categorisation requirements indicated in the Land Based Sources (LBS) Protocol, the receiving body classifies as Class I waters:</p> <p>Class I waters refer to water bodies that due to inherent or unique environmental characteristics or human use, are sensitive to the impacts of domestic wastewater. Class I waters include waters used for recreation.</p>
	Wastewater pollution loads	WHO Standards and Guidelines
Electrical Designs	All electrical equipment	<ul style="list-style-type: none"> • International Electrotechnical Commission (IEC) Standards • Special Standards and regulations set by the DOMLEC (reference WSSP Reports)
Structural Designs	Design Codes	<ul style="list-style-type: none"> • American Concrete Institute (ACI) 318M - Building Code American Concrete Institute • ACI 224R - Control of Cracking in Concrete Structures • ACI 350-06 - Code Requirements for Environmental Engineering Concrete Structures and Commentary • American Society for Testing and Materials (ASTM) A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement • UBC 97 Uniform Building Code (to find seismic loads)

WATER DEMAND BASE YEAR 2019 AND DESIGN YEAR 2049

The 2019 water demand was determined considering key factors of population, connecting rate, domestic consumption, non-domestic consumption and water losses. This water demand was determined to be 33,733 m³/d. A design demand population of 85,894¹ for 2049 was used to determine future water demand in addition to the consideration being given to the aforementioned factors. The 2049 water demand was determined to be 35,424 m³/d. This is an increase demand of 5.0129%.

TABLE 1: OVERVIEW ESTIMATED WATER DEMAND FOR ALL WAs 2019 VS 2049

No.	Water Demand Design Parameter	Units	DOWASCO Area 2019	DOWASCO Area 2049
1.	Population, connection rate, population served			
1.1	Population	Persons	69,308	84,046
1.2	Connection rate of customers	%	71.6	100
1.3	Population served	Persons	49,610	84,046
2.	Water demand			
2.1	Water consumption/revenue water 41.5%			
2.1.1	Domestic consumption per person (WA 1-2, 3-11)	l/c*d	230	230
2.1.2	Domestic consumption per person (rest of WA)	l/c*d	170	170
2.1.3	Non-domestic consumption per person (WA 1-2, 3-11)	l/c*d	61.7	61.7
2.1.4	Non-domestic consumption per person (rest of WA)	l/c*d	45.6	45.6
2.1.2	Consumption	m ³ /d	13,999	33,782
2.2	Water losses/Non-revenue water (58.5% - 2019 and 30% - 2049)	m ³ /d	19,734	10,627
	Total Water Demand	m³/d	33,733	35,424

Source: D1 Report Water Sector Strategic Plan – Diagnosis of Water Supply System

TABLE 2: PRIORITISED WA WATER DEMAND FORECAST 2049

WA	Pop	Consumption					Water losses 30.0%	Future tourist development			Daily Demand	Daily max	Hourly Max
		Domestic		Non-domestic		Total		Total	Spec. Consum.	Demand			
		hab	l/p/d	l/s	l/p/d	l/s	l/s	l/s	Pers.	l/p/s	l/s	l/s	125%
WA-1 (1-2)	36,377	230	96.84		36.33	133.16	57.07	0	500	0.00	190.24	237.79	475.59
Roseau Valley (34-37)	3,552		8.02		3.01	11.02	5.26	216		1.25	17.53	21.92	43.83
West Coast (3-11)	14,952		39.80		14.93	54.73	26.97	1,416		8.19	89.90	112.37	224.74
East Coast (20-24)	3,645		8.23		3.08	11.31	4.85	0.00		0.00	16.16	20.20	40.39
Calibishie(17)	999		2.25		0.85	3.10	1.33	0.00		0.00	4.43	5.54	11.07

Source: D2 Report - Water Sector Strategic Plan – Options to Build Resilience in Water Supply

¹ 2049 Projected Population - a reduced project population of 67,850, migration/development plans population of 2,726 and tourism development population of 1,848. (D1 Water Diagnosis Report – Table 5-15)

INSTITUTIONAL ASSESSMENT

1. INTRODUCTION

1.01 As part of the development of the WSSP, a comprehensive assessment was conducted of key agencies within the sector, including DOWASCO as the water utility. Recommendations made focused on creating an enabling environment, strengthening institutional and organisational capacity, and providing technology and support. The following section highlights the key issues identified, as well as recommendations made to strengthen DOWASCO, and the action plan developed for the implementation of the adopted recommendations.

2. CREATING AN ENABLING ENVIRONMENT: GOVERNANCE

2.01 The renewal of DOWASCO's water licence, which expired in 2014, is under active consideration by GOCD and is expected to be effected within the first half of 2022. Pursuant to the provisions of the Water and Sewerage Act Chapter 43:40, of 1989, DOWASCO has dual responsibility for water resources management and the provision of water and sanitation services. One of the recommendations of the WSSP (2021), is the establishment of a distinct agency responsible for providing leadership on water resource management in Dominica, separate and apart from the water utility. The separation of duties is expected to lead to greater focus and efficiency within the utility.

2.02 DOWASCO has dual responsibility for water resources management and the provision of water and sanitation services. One of the recommendations of the WSSP 2021, is the establishment of a distinct agency responsible for providing leadership on water resource management in Dominica, separate and apart from the water utility. The separation of duties is expected to lead to greater focus and efficiency within the utility.

2.03 In support of creating an enabling environment, the consultants looked at water sector utility models across the Region. The model recommended for Dominica is that of a commercialised statutory authority. This model is based on a semi-autonomous, arms' length principle of management. It is considered appropriate where operational and maintenance skills and costs are high, requiring the utility to achieve cost recovery; while at the same time the social aspects of the service provided are significant to government, as is the case of DOWASCO.

2.04 DOWASCO's current Board serves as an advisory council for DOWASCO to the line Ministry and does not have the independent powers of a Board of a corporate body. In practice DOWASCO is obliged to operate as a government line agency.

2.05 The WSSP recommends that DOWASCO have an independent board made up of both public and private sector members, that can make key decisions. Another key feature of the commercialised statutory authority model is that economic regulation would be provided by a separate entity with its own statute. GOCD has indicated its intention to bring the utility under the umbrella of the existing Independent Regulatory Commission (IRC), whose purview will be expanded beyond the electricity sector. Tariff adjustments will therefore be approved by the IRC, with incentives provided to the utility.

2.06 To support the above, a Consultancy TA will be funded under the Project to develop a strategic framework for water resources management for consideration of GOCD and DOWASCO. The objectives of the consultancy include, *inter alia* (i) the review and update of the IWRM Policy (2011) supported by proposed legislation; and (ii) the examination of the suitability of IRC and its present mandate to be expanded to that of an independent water resources management unit.

2.07 Whereas DOWASCO's external audits are conducted by reputable firms, DOWASCO does not have a formal internal audit function. The Study recommended the establishment of an internal audit function, which is being considered by DOWASCO's management with a final recommendation expected to be submitted for approval to the Board and the Ministry of Public Works and the Digital Economy by June 2022. As an independent unit, the Internal Audit unit would offer risk management and evaluate the effectiveness of DOWASCO's internal controls, corporate governance, and accounting processes. Legal services are expected to continue to be outsourced on an as needed basis.

3. STRENGTHENING INSTITUTIONAL AND ORGANISATIONAL CAPACITY

Corporate Capabilities

3.01 Following the presentation of strategic options for institutional capacity building, the Study elaborated an institutional strengthening plan for DOWASCO. The plan proposes activities which are mainly in the areas of organisational development and personnel development as the key complementary drivers for corporate capabilities.

3.02 Despite its lean organisation with only four hierarchical levels, DOWASCO has 56 different job positions i.e. every third job holder has a different job description. In several instances, it appears that positions have been created around job holders rather than designed according to the real organisational needs. This high degree of individualised positions reflects a low degree of alignment and lack of clarity of roles, which leads to a lower degree of job efficiency and overall company performance.

3.03 The Study recommends a redesigned organisation, based on a functional structure. It is recommended that the division of four departments be maintained. However, compared to the current set up, a clearer role allocation per department has been defined in order to avoid overlapping of activities, decision making processes which involve two managers, or the lack of some activities currently not assigned to any department/unit.

3.04 The four departments are engineering, operations, commercial and finance and administration. The proposed Engineering Department redesign has been aligned with the project management cycle, with sub-divisions ranging from project development (which includes prefeasibility studies), to project management and project works (where projects are implemented). The Operations Department would focus on on-going operational activities, and would be organised based on activities rather than an existing geographical approach. This department would include sub-divisions such as production, quality control, distribution, maintenance, and sanitation. Public relations and Customer services activities have been removed from the Human Resources function and would now form part of a separate the Commercial Department, which, along with Sales, would have a customer focus. Finance and Human Resources have been grouped into support services, along with procurement and information services, under the umbrella of a Finance and Administrative Services Department.

3.05 The Board of DOWASCO has endorsed the recommended job redesign. Based on internal discussions with executive management, it was agreed that DOWASCO's target organisation should be operational by January 2024. A phased approach would be employed, and the re-structuring of the Engineering and Operations departments targeted for implementation by 2023. An external change management consultant has been hired to guide and coach company-identified 'change agents' in addition to the management team in order to ensure that all next steps are clearly communicated across the entire organisation. Change agents will also be involved during the different project steps, such as the design of transitional organisational charts and the validation of the catalogue of generic job descriptions.

3.06 DOWASCO aims to maintain the current headcount level for the target organisation unless the business development justifies an increase in the number of positions and staff. Optimisation of the organisational structure will therefore be driven by reassignment or redeployment of the existing workforce. This is not expected to result in significant increases in personnel cost.

3.07 Key milestones identified in the organisational transition include a competency gap analysis, and a multiannual capacity building plan based on the gap analysis. DOWASCO has reached out to employees to submit updated resumes to build its database of employee skills set, which would inform the competency gap assessment and relevant training plan. In parallel, DOWASCO is in the process of implementing several measures to address organisational capacity issues, including the redesign of job descriptions to improve consistency among job classes, based on a workflow analysis. It has also commenced cross-training across lower organisational levels to support employee enrichment, job enhancement opportunities and skill redundancy.

3.08 DOWASCO is in the process of transitioning from an organisation with a former personnel administration department towards a modern human resources department. HR policies and procedures such as the performance management policy are currently in the process of being reviewed and redrafted. DOWASCO is also in the process of developing a formal recruitment policy, as well as an employee handbook to support the onboarding of new employees. A training and development plan is being developed to include both technical skills and soft skills trainings; team building and leadership training; coaching and mentoring; talent management; succession planning; and performance management. In response to the COVID-19 pandemic, DOWASCO has implemented new protocols as part of its occupational safety and health plan to ensure business continuity and the health and safety of staff.

4. TECHNOLOGY AND SUPPORT

Institutional Strengthening

4.01 The IT platform at DOWASCO has been identified as one of the key areas for improvement. As DOWASCO seeks to strengthen its efforts towards digitalisation, it is expected to introduce an enterprise management system, which will have a huge impact on DOWASCO's technical capabilities and interdepartmental coordination. With regard to a common Human Resources Information System, this would cover the key modules of modern human resources practices such as HR administration; digital personnel file; payroll; recruitment; and personnel development.

4.02 The company has also commenced upgrades to its billing and collections systems, which went live at the end of second quarter, 2021. Additionally, the compatibility of the billing system to a modified accounting system is being reviewed to ensure a seamless flow of transactions and to improve the efficiency of financial reporting. The tendering process has also been begun for the server and GIS applications. These IT upgrades are expected to be fully implemented by 4Q 2023, subject to the availability of funds.

5. OPERATIONAL RISK AND PERFORMANCE

Insurance

5.01 Prudent management requires that a company protects its assets against catastrophe and other risks. Given Dominica's proclivity to extreme weather events, it is important that the water utility provide adequate insurance coverage for its assets, to bolster its capacity to restore service to customers in the aftermath of a disaster, and as part of its risk management strategy. Traditionally, DOWASCO has had comprehensive insurance coverage for all of the utility's assets. DOWASCO currently has several intakes, plants, and pipelines lying along riverbanks or in other vulnerable locations, which have presented a

challenge for obtaining coverage post Hurricane Maria. DOWASCO is in the process of negotiating insurance for these assets under the Caribbean Water Utility Insurance Company (CWUIC), an insurance mutual being developed under a project by the IDB Group. Attempts are being made to link the CWUIC with the parametric coverage offered under the Caribbean Catastrophe Risk Insurance Facility (CCRIF), with the hope to have coverage in place by the 2022 Hurricane Season.

5.02 Non-Revenue Water: DOWASCO continues provide a reliable water supply, serving 95% of the population. However, notwithstanding the utility's strong operational performance, DOWASCO continues to be plagued by performance issues such as NRW. One of the main outputs of the water audit, which was conducted in 2016 and 2017, as part of a CDB-funded project, was a NRW Reduction Action Plan. This plan presented a strategy to reduce the NRW level by 28.5% over a five-year implementation period. This target has however been revised, given the current challenges to the water sector, particularly the recovery efforts following the passage of Hurricane Maria and the COVID-19 pandemic. In light of the aforementioned, a revised NRW of 45% by 2024 has been determined.

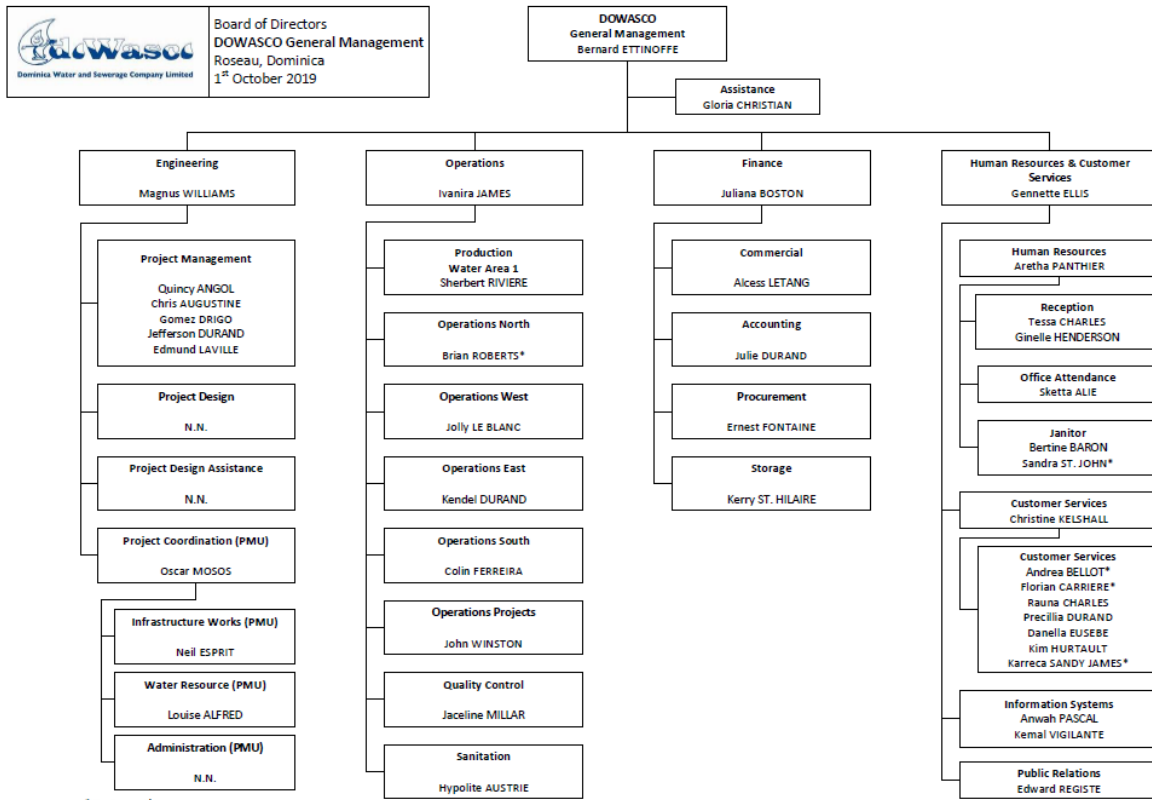
5.03 While full implementation of the plan has been constrained by the need for post-hurricane repairs to water systems and a subsequent shift in focus to plans for holistically building resilience in the water sector, several elements of the plan are currently under implementation. This includes the installation of bulk meters, for which locations have been already selected and chamber already designed. The procurement process has also begun for leak detection equipment as part of the pipe replacement programme. The GIS system is also actively being deployed, and data collected by a GIS specialist to create the necessary maps/models of the different features of the distribution system. Based on the current WSSP, it is expected that the target NRW of 30% would be achieved by 2049. DOWASCO is currently seeking funding under the Green Climate Fund to facilitate the completion of remaining elements of the action plan.

Tariff

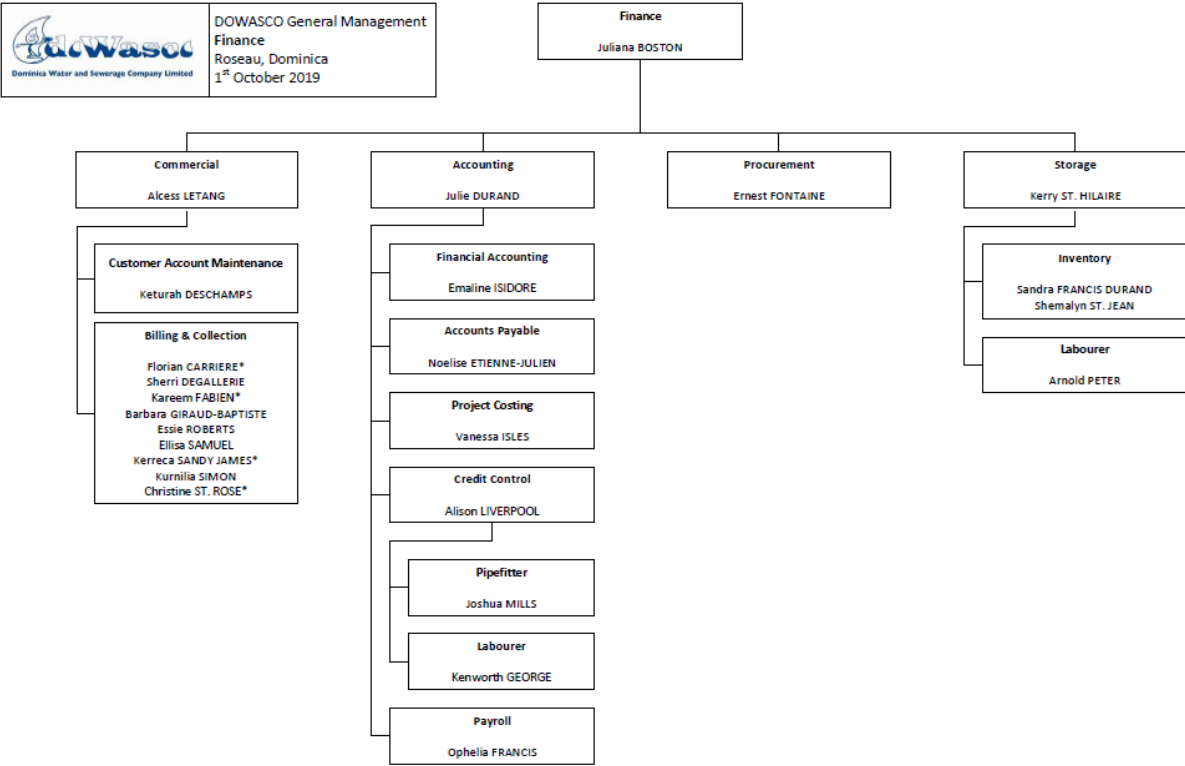
5.04 Under the WSA, DOWASCO is expected to achieve full cost recovery¹ but can only adopt the tariffs that have been approved by the Ministry of Public Works and the Digital Economy. The last tariff increase was granted in 2011. In 2020, DOWASCO engaged consultants to perform a cost of service and tariff study, which recommended a one-time 41% increase in water tariffs and a 61% annual increase in sewerage tariffs for all customer classes for the next 4 years to fully recover its operating costs. However, with full Board endorsement, DOWASCO has proposed a staggered approach to tariff increases to GOCD and awaits its approval. This differential approach involves a 20% and 35% increase in tariffs for domestic and commercial customers, respectively, in year one, followed by 5% consecutive increases in years 2, 3, and 4. However, given the current pandemic and its negative financial impact on customers, the approval of a significant increase in tariffs is unlikely in the near term. GOCD has stated that despite the non-granting of a tariff increase, it is committed to support the utility financially. Post Hurricane Maria, the government has made debt service payments on DOWASCO's behalf, and has reaffirmed its commitment to these subventions in the future.

¹ Under the WSA, DOWASCO's revenues should be sufficient to cover operating costs, including taxes, if any, and to provide adequate maintenance and depreciation, and interest payments on borrowing; meet periodic repayment on long-term indebtedness to the extent that any such repayment exceeds the provisions for depreciation; and create reserves for the purpose of future expansion.

ORGANISATIONAL CHART

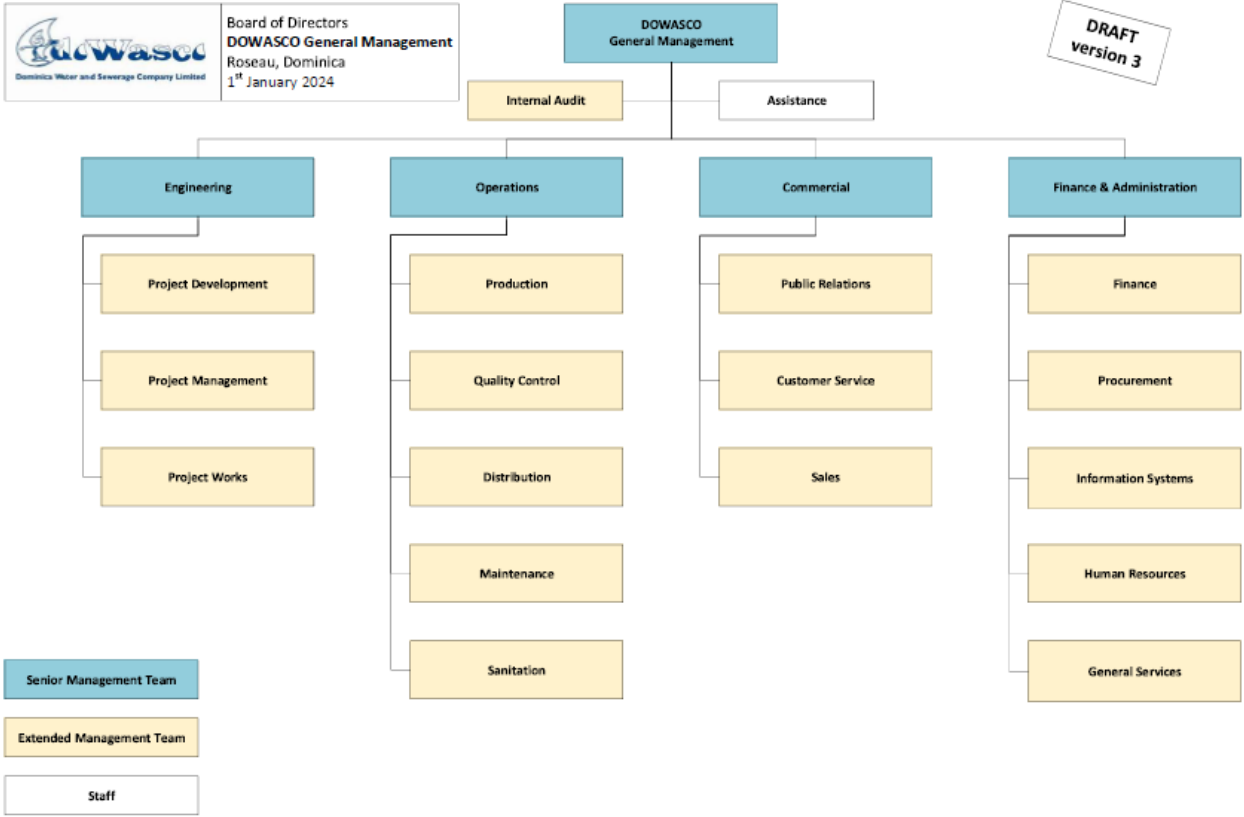


ORGANISATIONAL CHART cont'd



* Portsmouth

PROPOSED ORGANISATIONAL CHART



DRAFT
version 3

HISTORICAL BALANCE SHEET AS AT JUNE 30, 2016-2020
(XCD '000)

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.

HISTORICAL INCOME STATEMENT FOR THE PERIOD ENDED JUNE 30, 2016-2020
(XCD '000)

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.

HISTORICAL CASH FLOW STATEMENT FOR THE YEARS ENDED JUNE 30, 2016-2020
(XCD '000)

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.

HISTORICAL KEY FINANCIAL RATIOS FOR THE YEARS ENDED JUNE 30, 2016-2020
(XCD '000)

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.

**ASSUMPTIONS TO THE ECONOMIC ANALYSIS
AND ECONOMIC RATE OF RETURN CALCULATION**

1. The project life is assumed to be 30 years.
2. Benefits and costs are calculated at 2021 constant prices.
3. The historic compounded annual population growth rate of 1% for Dominica is used as the basis for future population-based demand coefficient calculations.
4. The Standard Conversion Factor (SCF) for Dominica was estimated at 0.94.
5. Conversion factors used for the different cost components are provided in Tables 1 to 2 below.

TABLE 1: CONVERSION FACTORS FOR COST ADJUSTMENT

Item	Shadow Rate	SCF	Specific Conversion Factor (SpCF)
Skilled Labour	1.00	0.94	0.94
Unskilled Labour	0.70	0.94	0.66
Local Materials	0.80	0.94	0.75
Imported Materials and Equipment	1.00	0.94	0.94

TABLE 2: DERIVATION OF SpCFs FOR WORKS

Item	Skilled Labour	Unskilled Labour	Local Materials	Imported Materials and Equipment	SpCF
Base Factor	0.94	0.66	0.75	0.94	
Project Preparation	1.0	-	-	-	0.94
Land			1.0		0.94
Infrastructure Works	0.3			0.7	0.94
Engineering and Construction-related Services	1.0				0.94
Goods				1.0	0.94
Institutional Strengthening	1.0				0.94
Other Project Support Services	1.0				0.94
Project Management	0.8			0.2	0.90

6. The overall conversion factor has been estimated at 0.94. This was used to convert the investment cost components of the Project to their border price equivalents. The calculations are shown in Table 3.

TABLE 3: OVERALL CONVERSION FACTOR FOR THE PROJECT

Base Factor + Physical Contingences			
Item	Financial Cost (XCD)	SpCF	Economic Cost (XCD)
Project Preparation	1,258,677	0.94	1,258,677
Land	1,350,000	0.94	1,350,000
Infrastructure Works	81,329,135	0.94	76,449,387
Engineering and Construction-related Services	7,174,977	0.94	6,744,479
Goods	640,608	0.94	602,171
Institutional Strengthening	676,856	0.94	636,245
Other Project Support Services	663,061	0.94	623,277
Project Management	3,544,430	0.90	3,198,494
Total Base Cost and Physical Contingencies	96,637,744		90,862,729
Project Conversion Factor			0.94

*Project Preparation costs consist of an allocation of the total cost of the preparation of the Programme for the entire island.

7. The quantified project benefits include:

- (a) Increased water consumption;
- (b) Reduced operating and maintenance costs; and
- (c) a reduction in the level of NRW.

8. It is expected that the Project will result in increased availability of pipe-borne water in the five water areas. It is also anticipated that the construction of additional storage tanks would result in longer periods of uninterrupted service. Upgrades in the water supply network will result in increased water availability leading to increased consumption by existing customers, as well as increased demand from new household connections.

9. Due to significant interconnectivity of water systems along the West Coast, it is assumed that the upgrades in the target area would produce indirect benefits and improve water access in surrounding geographical areas. For this analysis, the total impacted population is estimated to be 28,675.

10. Non-domestic water consumption is also expected to increase based on future touristic development in the area. In order to estimate the impact of these on sales volumes for DOWASCO, the following assumptions were used:

- (a) Total population of the target areas is approximately 17,914, with an estimated connection ratio of 71.6%. Population is expected to increase at an annual rate of 1% over the 30-year life of the Project.

- (b) It is estimated that 540 new household connections would be added per year, representing 75% of DOWASCO's projected total new residential connections.
- (c) Each residential connection represents 2.7 inhabitants per household.
- (d) Current average daily water consumption per residential customer in underserved target areas is 170 litres/day based on survey data.
- (e) With increased water access, average water consumption increases to 230 litres per person per day, in line with consumption rates in the WA-1 area, where supply is more reliable.
- (f) The Cost of Service and Tariff study conducted in 2020 determine that the price of water should be XCD25.60/000 gallons, and this has been used as a proxy for customer's 'Willingness to Pay' for water supply.
- (g) Jimmit residents will pay a flat monthly rate of XCD20.30 for sewerage services, based on the current tariff structure.
- (h) Touristic developments in the Coulibistrie and Roseau Valley area are expected to result in the availability of an additional 496 rooms accommodating 1,488 persons. This is expected to result in an incremental daily demand of 743,904 litres. These benefits are assumed to accrue from 2024.

Power Cost Savings

11. The Project's economic impact on DOWASCO's Operation and Maintenance costs is two-fold (a) Reduction in power costs; and (b) reduction of water truck services. In order to estimate these cost savings, the following assumptions were used:

- (a) Annual pumping costs are approximately \$1.1 mn representing 13% of DOWASCO's total O&M cost, based on the utility's 5-year historical average.
- (b) Power costs attributable to water supply to Coulibistrie is 16% of total power costs, based on the community's relative population.

Water truck Services

12. During periods of water shortage trucked water is pumped into DOWASCO' storage tanks in the community. The cost of mobilisation of a water truck is variable and depends on the location that the water is delivered to as well as the proximity of the refill location.

- (a) Cost of mobilisation of water truck to a community: XCD \$2,500 per day.

- (b) The expected average outage days in the areas, without the Project are as follows:

TABLE 4: EXPECTED OUTAGE DAYS

Water System	Average No of outages
Roseau Valley	19
Coulibistrie	9
Calibishie	13
Grand Fond	9
Castle Bruce	12

- (c) It is expected that based on population size and terrain, two water trucks will have to mobilised for outages in Roseau Valley and Coulibistrie.

13. Incremental cost saving from reduction in NRW is equal to estimated reduction in ‘real losses’ times the variable operation and maintenance cost. Real losses are loss production due to leakage on service connections and leakage and overflows at storage tanks. In the “Without Project” scenario, NRW is estimated at 58.5% based on the results of 2016 water audit. It is assumed that this will decrease to the targeted 45% **for the target areas** after project investments, as well as the implementation of the other NRW reduction initiatives. With the installation of the SCADA system in the WA-1 – Roseau area, NRW is also expected decrease in this area, and has been quantified as a benefit for the purpose of this analysis.

14. Variable operating and maintenance cost is projected at \$1.03 per litre, based on the historical four-year average. These benefits are assumed to accrue from 2023.

15. “Apparent (Commercial) losses” due to unauthorised consumption and customer metering inaccuracies without the Project are estimated at 18% of total input volumes (consumption) based on the findings of the 2016 Water Audit study. It is assumed that with the Project, particularly the installation of New District Meters, the level of commercial losses would decrease by 50% to 9% in the impacted areas.

16. It is assumed major maintenance would be performed on the network infrastructure in 2035 and 2045, estimated at 5% of the original capital cost. A residual value of XCD36,346 has also been recognised at the end of Project.

ECONOMIC RATE OF RETURN CALCULATION
XCD (\$'000)

Year	Capital Cost	Net Incremental O&M Cost*	Benefits from Increased Water and Sewerage Sales	Incremental Revenues from Reduction in Apparent (Commercial) Losses	Cost Savings from Reduction in NRW	Net Benefits
2021	1,337		-		-	(1,337)
2022	51,052				-	(51,052)
2023	37,289		2,298		377	(34,614)
2024	1,184	704	6,165	1,577	798	6,652
2025		711	6,204	3,272	828	9,595
2026		717	6,244	3,303	836	9,666
2027		723	6,285	3,334	844	9,739
2028		730	6,325	3,365	852	9,812
2029		736	6,366	3,396	860	9,886
2030		743	6,408	3,540	896	10,101
2031		750	6,450	3,573	904	10,178
2032		756	6,492	3,607	913	10,255
2033		763	6,535	3,641	922	10,334
2034		770	6,578	3,675	930	10,413
2035	4,543	777	6,621	3,768	954	6,023
2036		784	6,665	3,804	963	10,648
2037		791	6,710	3,839	972	10,730
2038		798	6,755	3,876	981	10,813
2039		805	6,800	3,912	990	10,897
2040		813	6,846	4,011	1,015	11,059
2041		820	6,892	4,049	1,025	11,146
2042		828	6,939	4,087	1,035	11,233
2043		828	6,939	4,087	1,035	11,233
2044		828	6,939	4,087	1,035	11,233
2045	4,543	828	6,939	4,087	1,035	6,690
2046		828	6,939	4,087	1,035	11,233
2047		828	6,939	4,087	1,035	11,233
2048		828	6,939	4,087	1,035	11,233
2049		828	6,939	4,087	1,035	11,233
2050		828	6,939	4,087	1,035	11,233
2051		828	6,939	4,087	1,035	11,233
2052	(36,345)	828	6,939	4,087	1,035	47,578
ERR Calculation						10.10%

* This includes increased operating cost to supply demand, net of cost savings from reduced water truck services, and reduced power costs with the installation of the hydro-powered pumping station.

BENEFITED POPULATION

Project	Benefited Population
WA-1	29,621
West Coast	11,059
Roseau Valley	6,371
East Coast	3,791
Calibishie	5726
TOTAL	56,496

GENDER MARKER ANALYSIS

Project Cycle Stage	Criteria	Score
Analysis 1	Consultations with relevant categories of males and females and relevant gender-related public/ private sector organisations and Non-Governmental/ Community-Based Organisations will take / have taken place	Yes
Analysis 2	Socioeconomic, Sector and/or Institutional analysis considers gender risks and/or gender disparities that impact the achievement of project outcomes.	Yes
Design 1	Project interventions / policies address existing gender disparities specifically the coordination of community awareness activities in collaboration with respective Community Coordination Committees, CLO and PC and in consultation with the Gender-responsive and Socially Inclusive Communication Plan Consultant.	Yes
Design 2	Project objective / outcome includes the enhancement of gender equality or the design of gender-responsive policies or guidelines.	Yes
Implementation 1	Implementation arrangements include either: Capacity building initiatives to enhance gender mainstreaming of the executing and/or implementing agency. Or Active participation of representatives of gender-relevant stakeholders in project execution.	Yes
Implementation 2	Terms of Reference of consultancy/project coordinating unit/project management unit includes responsibilities and resources, including budgets for gender mainstreaming.	Yes
Monitoring and Evaluation 1	Sex-disaggregated data included in the baselines, indicators and targets of the RMF. Or Collection of sex-disaggregated data is part of the production and monitoring of a Social Management Plan for mainstreaming gender equality and universal design environmental access requirements and/or standards for PWDs.	Yes
Monitoring and Evaluation 2	At least one gender-specific indicator at the outcome and/or output level in the RMF or included in tranche releases of PBLs.	Yes

Analysis	Design	Implementation	Monitoring & Evaluation	Score	Code
1.0	1.0	1.0	1.0	4.0	Gender Mainstreamed

The Project is gender mainstreamed when there is the potential to contribute significantly to gender equality. Interventions that reduce women’s drudgery can free up time and energy which could be used more productively.

GENDER ACTION PLAN

Output	Targets/Indicators	Responsibility	Time
Cross-cutting Strategies integrated in Project Cycle and Project Management			
Host consultations with men and women, vulnerable groups, and indigenous populations as a project component during preparation, implementation, and completion.	Consultations held with men and women and other vulnerable groups throughout the project.	PMT-DOWASCO, MPWDE	Ongoing
Integrate stakeholder inputs into the design, implementation of the project.	Stakeholder feedback and needs are reflected within the project.	PMT-DOWASCO, MPWDE	Ongoing
Collect disaggregated data by sex for gender monitoring across all relevant project components.	Disaggregated data is collected, analysed, and integrated across all relevant project components.	PMT-DOWASCO, MPWDE	Ongoing
Gender Action Plan performance is included in all project reviews and reporting requirements.	Gender Action Plan implementation included within all project reporting frameworks.	PMT-DOWASCO, MPWDE	Ongoing
Monitor the implementation of the ESMP which includes potential impacts and mitigations measures such as social and gender sensitisation training of contractors and construction workers, development of a Stakeholder Engagement Plan, and contractor's requirement to establish a GRM.	ESMP effectively implemented. (yes/no).	Contractor CSC PMT-DOWASCO, MPWDE	TBD
Water abstraction, storage and distribution systems for targeted water areas expanded and rehabilitated.			
Wastewater System expanded and upgraded at Jimmit			
Gender-sensitive and socially inclusive standards integrated in the design and works	Environmental, Social, Health and Safety Plans effectively implemented. (yes/no)	PMT-DOWASCO, MPWDE Contractors CSC CDB	TBD
Encourage contractors to prioritise the employment of local workers within project communities and to maximise use of women and other vulnerable populations in labour- based work.	Community members employed during the construction phase of the project (disaggregated by sex, age cohort, indigenous identity, and disability status). (#) Employment opportunities announced and recruitment notices widely circulated, targeted at women as well as men and other vulnerable groups.	PMT-DOWASCO, MPWDE Contractors CSC	TBD

Output	Targets/Indicators	Responsibility	Time
	<p>Equal pay for equal work for women and men for all construction and maintenance work.</p> <p>Register of persons with the relevant skills (e.g women, indigenous people, youth, PWDs) developed to encourage the employment of poor and vulnerable groups and small businesses identified at the community level.</p>	CDB	
Promote safe and inclusive working conditions in contractors' duties and responsibilities through the supervision of construction services.	<p>Basic facilities (separate toilets, clean water) are provided for female as well as male construction workers at construction sites.</p> <p>Supervision of safe conditions during construction for both male and female workers and training orientation sessions on labour standards/ equal wages/ awareness on STI (incl. HIV) prevention, conflict management, sexual harassment, exploitation, and gender-based violence.</p>	<p>PMT-WSG, MPWDE</p> <p>CDB</p>	TBD
Operational capacity and recommendations of Feasibility Study implemented			
Build individual and organisation capacity for gender-responsive and socially inclusive water resources management, communications and engagement	<p>Development and adoption of the Strategic Framework for Water Resource Management with clear gender equality and social inclusion (yes/no)</p> <ol style="list-style-type: none"> 1. Framework developed (y/n) 2. Framework adopted (y/n) 	<p>PMT-DOWASCO, MPWDE</p> <p>Consultant</p> <p>CDB</p>	TBD
	<p>Gender-responsive and Socially Inclusive Commutations Plan developed and implemented (yes/no)</p> <ol style="list-style-type: none"> 3. Plan developed (y/n) 4. Plan implemented (y/n) 	<p>PMT-DOWASCO, MPWDE</p> <p>Consultant</p> <p>CDB</p>	TBD

CLIMATE CHANGE ADAPTATION AND MITIGATION MEASURES AND CLIMATE FINANCE – SUMMARY

Lot 1 – Construction of Water Treatment Plants for Five Sites

STEP	ASSESSMENT										
Vulnerability Context	<p>The major risks of climate change to the different project areas include strong winds and landslides, especially as a result of tropical storms. In addition, intensive rainfalls may increase turbidity in the water bodies from which water is abstracted. On a minor level, drought and heat waves may also affect water availability and water quality.</p> <p>The main impacts related to these risks are:</p> <ul style="list-style-type: none"> - Infrastructure damage due to strong winds - Power outage - Elevated water turbidity causing water service interruption - Landslides 										
Statement of Intent	<p>The project is mainly motivated as an adaptation measure to CC. More intense and frequent rainfalls cause an increase in water turbidity, which in many cases requires the interruption of water abstraction. If the turbidity episode is long enough, water shortages in the distribution areas result.</p> <p>The construction of WTSs help cope with these turbidity increases and keep the water service functioning. In those cases where extreme turbidity episodes may occur, the foreseen water storage tanks at the WTP help to overcome these periods, until turbidity lower and the WTP can start functioning again. This way, water service interruptions due to increased turbidity will be almost eliminated.</p> <p>The function of the water storage tanks at the WTP will be double: 1st allow for a “shut off” period of the plant due to turbidity above the design capacity; 2nd provide an additional water storage in case of emergency for the supply networks.</p> <p>Finally, two of the WTPs include a mini-hydropower plant to make use of the elevation difference between the intake and the WTP. In Coulibistrie a mini-turbine with 86kW power generation will be implemented, which will offset the large energy demand requested at the pumping station (105kW). IN Castle Bruce, the mini-turbine will produce 60kW of power, which exceeds the energy requirements at the WTP (33kW). The surplus energy can be sold to the electrical grid.</p>										
Link to project Activities	<table border="1"> <thead> <tr> <th>Adaptation Measures</th> <th>Estimated Cost difference (USD)</th> </tr> </thead> <tbody> <tr> <td>Storage tanks</td> <td align="right">2,408,000</td> </tr> <tr> <td>Emergency generator at WTP</td> <td align="right">75,600</td> </tr> <tr> <td>Mitigation Measures</td> <td></td> </tr> <tr> <td>Mini-hydropower plants</td> <td align="right">470,000</td> </tr> </tbody> </table>	Adaptation Measures	Estimated Cost difference (USD)	Storage tanks	2,408,000	Emergency generator at WTP	75,600	Mitigation Measures		Mini-hydropower plants	470,000
Adaptation Measures	Estimated Cost difference (USD)										
Storage tanks	2,408,000										
Emergency generator at WTP	75,600										
Mitigation Measures											
Mini-hydropower plants	470,000										

Lot 2 – Construction of New Water Supply Systems for Roseau

STEP	ASSESSMENT
Vulnerability Context	<p>The major risks of climate change to the Roseau Valley Area and Calibishie include strong winds, floods and landslides, especially as a result of tropical storms. In addition, intensive rainfalls may increase turbidity in the water bodies from which water is abstracted. On a minor level, drought and heat waves may also affect water availability and water quality. The main impacts related to these risks are:</p> <ul style="list-style-type: none"> - Infrastructure damage due to strong winds - Power outage - Elevated water turbidity causing water service interruption - Landslides

STEP	ASSESSMENT								
Statement of Intent	<p>Roseau Valley</p> <p>The project is mainly motivated as an adaptation measure to CC. In the Roseau Valley area major problems with landslides have affected the existing intakes, mainly Trafalgar and Wotten Waven. In addition, the intake supplying Morne Prosper has shown insufficient yield in the dry season. The abstraction of water from a centralised source with higher discharge such as the Providence River is addressed to overcome these problems.</p> <p>Landslides in the Providence River Area may occur, but the vulnerability is relatively low. The pipeline routes will mainly follow the existing roads, which are less susceptible against landslides and easier to access in case of repair need.</p> <p>The required river crossings will be carried out as underground crossings, with the pipelines buried in the riverbed and protected by a protection steel pipe.</p> <p>Calibishie</p> <p>The project is mainly motivated as an adaptation measure to CC. The existing intake will be rehabilitated and protection measures against debris flow implemented. In addition, the pipeline route towards the tanks has been completely rearranged. The current pipeline is laid cross-country, in areas with very difficult access. Instead, a new pumping station will be built near the existing ram pumps, but in another location not vulnerable to landslides. The force main will be laid along the existing access road towards the new WTP.</p>								
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Increased capacity storage tank Wotten Waven	441,000								
Increased capacity storage tank Trafalgar	424,000								
Longer route for supply line avoiding steep slopes (Shawford area)	100,000								

Lot 3 – Construction of New Water Supply Systems for the West Coast

STEP	ASSESSMENT
Vulnerability Context	<p>The major risks of climate change to the West Coast Area include strong winds, floods and landslides, especially as a result of tropical storms. In addition, intensive rainfalls may increase turbidity in the water bodies from which water is abstracted. On a minor level, drought and heat waves may also affect water availability and water quality.</p> <p>The main impacts related to these risks are:</p> <ul style="list-style-type: none"> - Infrastructure damage due to strong winds - Power outage - Elevated water turbidity causing water service interruption - Landslides
Statement of Intent	<p>The project is mainly motivated as an adaptation measure to CC. The West Coast supply system was severely impacted by the effects of Hurricane Maria. The two main intakes in the area, Picard and Coulibistrie were affected: the first one was only partially damaged but the second one was completely destroyed alongside the supply line.</p> <p>The new Coulibistrie intake has been relocated from its original position to a less vulnerable location. The design has been optimised to better withstand floods and debris flow.</p>

STEP	ASSESSMENT														
	<p>Similarly, COANDA screens would help reduce turbidity.</p> <p>In Coulibistrie a mini-hydropower plant has been considered at the WTP. This mini-turbine has been optimised to generate as much energy as possible to offset the energy demand at the WTP pumping station (see Report D6-L3). For that purpose, the supply pipe diameter has been increased compared to the one considered in the FS (from original DN200 to DN300).</p>														
Link to project activities	<table border="1"> <thead> <tr> <th>Adaptation Measures</th> <th>Estimated Cost difference (USD)</th> </tr> </thead> <tbody> <tr> <td>Increased capacity storage tank Coulibistrie</td> <td>347,000</td> </tr> <tr> <td>Increased capacity storage tank Grande Savanne</td> <td>577,000</td> </tr> <tr> <td>Increased capacity storage tank Salisbury</td> <td>265,000</td> </tr> <tr> <td>Improved design intake Coulibistrie</td> <td>40,000</td> </tr> <tr> <td colspan="2">Mitigation Measures</td> </tr> <tr> <td>Pipeline diameter increase for hydropower generation at Coulibistrie</td> <td>1,050,000</td> </tr> </tbody> </table>	Adaptation Measures	Estimated Cost difference (USD)	Increased capacity storage tank Coulibistrie	347,000	Increased capacity storage tank Grande Savanne	577,000	Increased capacity storage tank Salisbury	265,000	Improved design intake Coulibistrie	40,000	Mitigation Measures		Pipeline diameter increase for hydropower generation at Coulibistrie	1,050,000
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Improved design intake Coulibistrie	40,000														
Mitigation Measures															
Pipeline diameter increase for hydropower generation at Coulibistrie	1,050,000														

Lot 4 – Construction of New Water Supply Systems for the East Coast

STEP	ASSESSMENT
Vulnerability Context	<p>The major risks of climate change to the East Coast Area include strong winds, floods and landslides, especially as a result of tropical storms. In addition, intensive rainfalls may increase turbidity in the water bodies from which water is abstracted. Drought and heat waves have also recently affected water availability and water quality.</p> <p>The main impacts related to these risks are:</p> <ul style="list-style-type: none"> - Infrastructure damage due to strong winds - Power outage - Elevated water turbidity causing water service interruption - Landslides - Water shortage
Statement of Intent	<p>The project is mainly motivated as an adaptation measure to CC. The Grand Fond supply system was severely impacted by the effects of Hurricane Maria. The intakes were completely destroyed, and the supply lines washed away. Large efforts had to be made to recover supply in this area. However, the condition of the system is very precarious. Therefore, a new intake and supply line need to be constructed.</p> <p>Other intakes in the area (Castle Bruce, Riviere Cyrique and Monre Jaune) suffer from water shortage in the dry season due to small watersheds and less precipitation. These problems will be overcome with the construction of a new intake Castle Bruce, with large water availability and the interconnection of the Riviere Cyrique and Morne Jaune systems to the Grand Fond system, which has also large water availability.</p> <p>The risk of destruction of the Grand Fond intake has been reduced by the selection of a less vulnerable area, far downstream. Although not accessible by (the old intake was not accessible either), the intake is located much nearer to the town, and access trails and material ropeways will be provided. In addition, the design of the intake is intended to better resist debris flows. In addition, COANDA screens have been included to reduce turbidity in the abstracted water. The new location of the intake, lower than the tanks, has required the implementation of a pumping station. This has been planned as ram-pumps, which do not require electricity energy, thus reducing</p>

STEP	ASSESSMENT														
	<p>operating expenses. In order for this work a larger inlet pipe (DN 450 instead of DN150) needs to be installed.</p> <p>The rehabilitation of the Castle Bruce intake has been conceived to better withstand the expected impacts (flooding, debris flow), by means of optimised geometrical design and reinforcements to prevent erosion downstream. Similarly, COANDA screens would help reduce turbidity.</p> <p>In Castle Bruce a mini-hydropower plant has been considered at the WTP. This mini-turbine has been optimised to generate as much energy as possible with the existing sections of the irrigation pipeline. The energy produced will be used at the WTP, the effluent pumping station as well as sold to the grid (see Report D6-L2).</p>														
Link to project activities	<table border="1"> <thead> <tr> <th>Adaptation Measures</th> <th>Estimated Cost difference (USD)</th> </tr> </thead> <tbody> <tr> <td>Increased capacity storage tank Castle Bruce</td> <td>540,000</td> </tr> <tr> <td>Increased capacity storage tank Morne Jaune</td> <td>347,000</td> </tr> <tr> <td>Improved design intake Grand Fond</td> <td>40,000</td> </tr> <tr> <td>Landslide protection to pipeline at Castle Bruce Intake</td> <td>17,800</td> </tr> <tr> <td>Mitigation Measures</td> <td></td> </tr> <tr> <td>Implementation of ram-pumps stations</td> <td>360,000</td> </tr> </tbody> </table>	Adaptation Measures	Estimated Cost difference (USD)	Increased capacity storage tank Castle Bruce	540,000	Increased capacity storage tank Morne Jaune	347,000	Improved design intake Grand Fond	40,000	Landslide protection to pipeline at Castle Bruce Intake	17,800	Mitigation Measures		Implementation of ram-pumps stations	360,000
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Mitigation Measures															
Implementation of ram-pumps stations	360,000														

Lot 5 – Construction of Sewer and Wastewater Treatment Plant Jimmit

STEP	ASSESSMENT								
Vulnerability Context	<p>The impacts of climate change to the project area a mainly strong winds and flooding as a result of tropical storms, which are bound to increase both in intensity and frequency in the future due to CC.</p> <p>The main impacts related to these risks are:</p> <ul style="list-style-type: none"> - Infrastructure damage due to strong winds <ul style="list-style-type: none"> - Power outage - Flooding as a result of storm surge 								
Statement of Intent	<p>The project is not mainly motivated as an adaptation measure to CC, but it addresses an urgent need for improvement of the sanitation system (especially the wastewater treatment). However, the design has considered the above-mentioned potential impacts to the infrastructure.</p>								
Link to project activities	<table border="1"> <thead> <tr> <th>Adaptation Measures</th> <th>Estimated Cost difference (USD)</th> </tr> </thead> <tbody> <tr> <td>Gabion wall (flood protection)</td> <td>22,500</td> </tr> <tr> <td>Emergency generator at WWTP</td> <td>13,000</td> </tr> <tr> <td>Sea outfall protection</td> <td>15,000</td> </tr> </tbody> </table>	Adaptation Measures	Estimated Cost difference (USD)	Gabion wall (flood protection)	22,500	Emergency generator at WWTP	13,000	Sea outfall protection	15,000
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Emergency generator at WWTP	13,000								
Sea outfall protection	15,000								

The summary of the adaptation and mitigation measures costs for each Lot results as follows:

Lot	Adaptation Cost (USD)	Mitigation Cost (USD)	Total (USD)
Lot 1 - WTP	2,483,600	470,000	2,953,600
Lot 2 – Roseau Valley/Calibishie	965,000	-	965,000
Lot 3 – West Coast	1,229,000	1,050,000	2,279,000
Lot 4 – East Coast	944,800	360,000	1,304,800
Lot 4 - Jimmit	50,500	-	50,500
TOTAL	5,672,900	1,880,000	7,552,900

**LEGAL STATUS, FUNCTIONS, POWERS AND DUTIES OF
DOMINICA WATER AND SEWERAGE COMPANY LIMITED**

THE EXECUTING AGENCY

Legal Status

1. DOWASCO is a limited liability company incorporated in Dominica on June 1, 1989, under the former Companies Ordinance of the Laws of Dominica. On October 22, 1997, it was continued under the new Companies Act, 1994, which came into force on September 1, 1995.
2. DOWASCO is empowered by paragraph 3 of its Memorandum of Association, *inter alia*, to:
 - (a) carry out the business of suppliers of water for sanitary, domestic and non-domestic uses for export and sale, collection of sewage and to construct the necessary works for such supply and collection;
 - (b) establish, maintain and extend water supply systems throughout Dominica;
 - (c) determine, alter, charge, and collect rates, fees and other charges for the use of its facilities or for the water or other commodities or services sold, rendered or performed by it;
 - (d) make rules and regulations to allow DOWASCO to operate within the standards established by a public utility commission;
 - (e) do all such other things as may be for the time being or from time to time authorised by WSA; and
 - (f) do all such other things as are incidental, or which DOWASCO may think conducive to the attainment of its objects or any of them.
3. DOWASCO is further empowered under paragraph 3(g) of its Memorandum of Association, *inter alia*, to borrow money or receive money on deposit either without security or secured by debenture stock, mortgage or other security charged on its undertaking or on all or any of its assets, including its uncalled capital.
4. In addition, Section 27(2) of WSA authorises DOWASCO, subject to the provisions of WSA in such manner as it considers appropriate, but subject to the approval of the Minister having responsibility for Water Supply (the Minister), to borrow sums required by it for meeting any of its obligations and discharging any of its functions.
5. DOWASCO is accordingly endowed with authority to carry out the Project in respect of which the CDB grant is being sought and to borrow for that purpose.

Shareholding

6. DOWASCO has an authorised share capital of \$30 mn divided in thirty million shares each of a par value of \$1. Of these, five shares were issued and fully paid-up in 1989 on formation of the company and held by or on behalf of GOCD. DOWASCO has been receiving share subscriptions from GOCD from 1989 but has not converted these funds into fully paid up and issued shares. It has been agreed between

DOWASCO and GOCD that any further financial assistance from GOCD is to be converted into shares up to the authorised total of thirty million.

Water and Sewerage Charges

7. Subject to the provisions of WSA, and the approval of the Minister, DOWASCO has power to fix, demand, take and recover rates and charges for the services it performs.

8. The procedure is as follows:

- (a) Where DOWASCO considers it necessary from time to time it may serve a notice in writing on the Minister supported by its most recent audited profit and loss statement, stating any changes proposed to be made to the authorised rates and charges then in force, and the time when the changes are to take effect.
- (b) If within sixty (60) days of the receipt of such notice the Minister approves the changes to the authorised rates and charges proposed by DOWASCO or any variation thereof agreed to by DOWASCO, then notwithstanding anything contained in any other enactment, the authorised rates shall be changed in accordance with such proposals including any variations thereof and the Minister shall by Regulations cause notice of such changes of the rates and charges to be published in the Gazette.
- (c) If within sixty (60) days of the receipt of any such notice served by DOWASCO on the Minister and the Minister disapproves or does not approve the changes to the authorised rates proposed in the notice (or any such variation thereof) then the changes proposed by DOWASCO shall be forthwith referred by DOWASCO to the Public Utilities Commission (PUC) which shall determine whether or not and to what extent the changes in the authorised rates proposed by DOWASCO are fair and reasonable.
- (d) In making such determination, PUC shall adhere to the principle that DOWASCO's revenues must be sufficient to enable DOWASCO to pay compensation when required to do so to cover operating expenses, provide adequate maintenance, depreciation and interest charges, meet long-term debt and create reserves for future expansion.

Government Control

9. The Minister is empowered under WSA to make Regulations for conserving water and for preventing waste, undue consumption, misuse or contamination of water supplied by DOWASCO.

10. DOWASCO is required to comply with all directives, instructions, regulations and standards set up by the Ministry responsible for Health for water quality and any sanitary aspects of the waterworks.

Acquisition and Vesting

11. The Minister responsible for Lands may, whenever land is required for the purposes of WSA, acquire under the provisions of the Land Acquisition Ordinance any lands, and may by order vest any land so acquired in DOWASCO.

12. Article 84 of DOWASCO's Articles of Association provides that its business shall be managed by its Directors who may exercise all of its powers as are not, by the Companies Ordinance or the Articles,

required to be exercised by DOWASCO in general meeting. DOWASCO's directors are all representatives of GOCD.

Functions, Powers, and Duties

13. Under the provisions of WSA, DOWASCO is:

- (a) obliged, so far as reasonably possible, to provide to the public, in accordance with the provisions of WSA, and any Regulations made thereunder, a supply of potable water for domestic purposes and a potable or otherwise satisfactory supply for agricultural, industrial or commercial purposes, and in particular to:
 - (i) prepare schemes for the development of water resources and for the provision of water supplies and to construct, operate and maintain such schemes;
 - (ii) keep under constant review the quality, reliability and availability of water supplies and keep the Minister informed thereon;
 - (iii) control and regulate the production, treatment, storage, transmission, distribution and use of water for public water supply purposes;
 - (iv) design, construct, acquire, operate and maintain waterworks for the purpose of supplying water for public purposes; and
 - (v) disseminate information and advice with respect to the management, collection, production, transmission, treatment, storage, supply and distribution of water.
- (b) responsible for:
 - (i) carrying out GOCD's policy in relation to water supply;
 - (ii) maintaining and developing the waterworks and other property relating thereto transferred to it under WSA;
 - (iii) providing the public with a safe, adequate and reliable supply of water; and
 - (iv) carrying out GOCD's policy in relation to sewerage and providing the public with dependable sewerage services, within such period prescribed by the Minister;
- (c) required to provide, in accordance with the provisions of WSA, such public sewers as may be necessary, and to make such provision, by means of sewage disposal works, marine treatment or otherwise, as may be necessary for effectually dealing with the contents of the sewerage system. In particular and without prejudice to the foregoing, DOWASCO may:
 - (i) prepare schemes for sewage disposal services and construct, maintain and operate such schemes;
 - (ii) design, construct, acquire, operate and maintain sewage works for the purpose of receiving, treating and disposing of sewage;

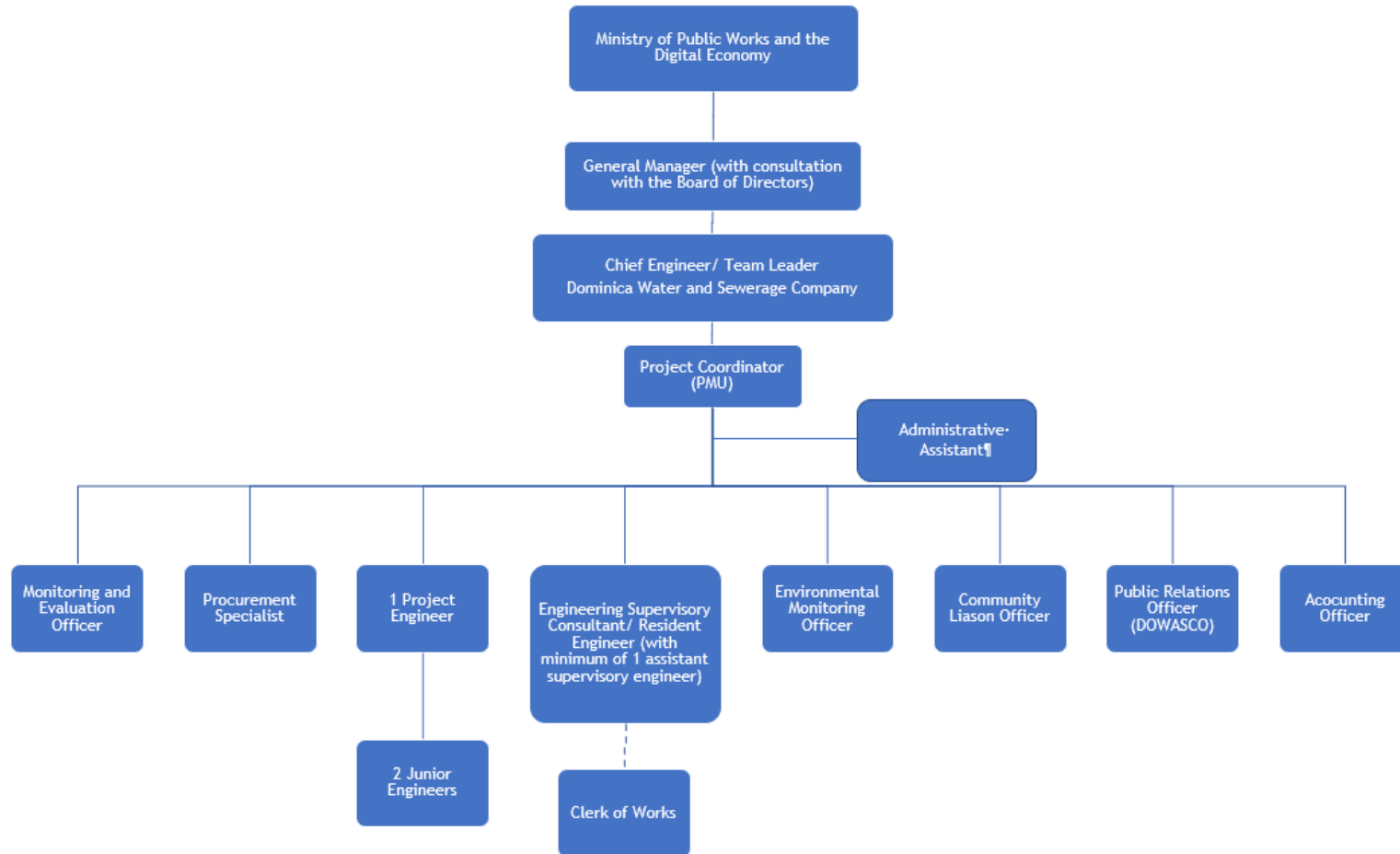
- (iii) control and regulate the disposal of sewage through the sewerage system; and
- (iv) by Regulations under WSA, control the installation, operation and maintenance of sewers and waste disposal systems which are not connected to the sewerage system.

14. In discharging these functions DOWASCO is:

- (a) obliged to comply with the Public Health Act, 1968 or any Act replacing that Act and the Regulations made thereunder. Also required to:
 - (i) take such action as may be necessary or expedient (in consultation with the Ministry of Agriculture) for the purpose of conserving, redistributing or otherwise augmenting water resources in Dominica;
 - (ii) carry out periodical surveys of water consumption patterns in Dominica and prepare reports thereon;
 - (iii) prepare estimates of the future demand for the use of water; and
 - (iv) so exercise and perform its functions as to ensure that its revenues are not less than sufficient to:
 - (aa) pay compensation when required to do so;
 - (bb) cover operating expenses, including taxes, if any, and to provide adequate maintenance and depreciation, and interest payments on borrowing;
 - (cc) meet periodic repayment on long-term indebtedness to the extent that any such repayment exceeds the provisions for depreciation; and
 - (dd) create reserves for the purpose of future expansion.
- (b) empowered:
 - (i) if it appears that, by reason of deforestation or the presence of animals, the storage capacity or sanitation of any gathering ground is seriously threatened, to request the Ministries responsible for Forestry and Health to take appropriate action to prevent or regulate the threat to the gathering ground;
 - (ii) whenever it becomes possible to provide a water supply to any land from works acquired or constructed under WSA, to declare by notice in the Gazette and one local newspaper in Dominica the works to be effective in that area, whereupon:
 - (aa) the owner of any land in the area is liable to such rates or charges as may be prescribed, whether or not the land is connected to the works or is occupied;

- (bb) DOWASCO may, by notice in writing, require any owner of land in the area to connect that land to the works in the manner prescribed and within such time as is specified in the notice; and
- (cc) DOWASCO may on its own initiative or on an application in the prescribed manner and form by any owner of land or his agent, agree to connect the land to the works on such terms and in such manner as is prescribed to do anything that in the opinion of DOWASCO is calculated to facilitate or is conducive or incidental to the discharge of its functions.

PROJECT MANAGEMENT UNIT – ORGANISATIONAL CHART



DUTIES AND RESPONSIBILITIES - PROJECT TEAM LEADER
PROJECT MANAGEMENT UNIT

PROJECT TEAM LEADER

1. The PTL is responsible for the strategic management of the PMU, DOWASCO and to direct the overall planning, management and execution of the projects assigned to the Unit, including the projects within CDB Project Portfolio (PP). The PTL will report to the General Manager, DOWASCO and will also interact with:

- (a) Financial Secretary, Ministry of Finance.
- (b) Permanent Secretary, Ministry of Public Works and Digital Economy.
- (c) Operations Officer, Economic Infrastructure Division, CDB.

2. His/her duties will include but will not be limited to:

Coordination

- (a) Coordinating meetings, consultations or other activities associated with the implementation and management of CDB Operations Officer.
- (b) Serving as Deputy Chairperson for Project Steering Committee and ensuring that appropriate action is taken on resolutions and directives of PSC.
- (c) Coordinating the preparation of annual work plans and budgets for CDB Portfolio of Projects (CDB PP).

Project Portfolio Development and Implementation

- (a) Recommending, developing and implementing strategies that will support the long-term sustainability of Projects under CDB PP
- (b) Overseeing the development and execution of project plans, budgets and activities to ensure timely delivery of the goods, works and services for all projects under CDB PP.
- (c) Assisting in identifying and resolving issues and challenges that may arise during project implementation.

Resource Mobilisation and Communication

- (a) Undertaking necessary actions to mobilise GOCD resources required to support the successful delivery of the CDB PP.
- (b) Ensuring effective communication on matters arising during implementation to internal and external stakeholders.

Administrative and Capacity Building

- (a) Providing technical support and advice to PMU staff as required.
 - (b) Developing and maintaining relevant policies, procedures and control systems for the efficient management of PMU resources.
 - (c) Conducting periodic reviews of the CDB PP and the PMU's activities to ensure that implementation is in accordance with the requirements of the respective Financing Agreements.
 - (d) Developing strategies and programmes for building capacity of the PMU through training, mentoring and coaching.
 - (e) Any other duties assigned by General Manager (GM), DOWASCO.
3. Prospective candidates must have the following minimum qualifications:
- (a) a Master's Degree or equivalent in Civil Engineering, Project Management, Construction Management or a related discipline; together with a minimum of 15 years' experience in a similar role and 5 years' experience in managing projects of comparable complexity and budgetary value as projects to be funded under the CDB PP.

DRAFT TERMS OF REFERENCE
PROJECT COORDINATOR – PROJECT MANAGEMENT UNIT

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica (GOCD) wishes to engage the consultancy services of a Project Coordinator (PC) to function within the Project Management Unit (PMU) of the Dominica Water and Sewerage Company Limited (DOWASCO). DOWASCO, through PMU, will be responsible for the management and implementation of the Dominica Water Sector Strategic Project-financed by the Caribbean Development Bank (CDB) through the United Kingdom Caribbean Infrastructure Partnership Fund resources.

1.02 The captioned project's impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers

1.03 The Consultant shall report directly to the Project Coordinator, of the PMU or his/her designate.

2. JOB DESCRIPTION

2.01 The PC will be responsible for coordinating and monitoring all aspects of the implementation of the Project. Additional administrative, technical and clerical support will be provided by PMU, DOWASCO. PC's duties will include, but will not be limited to:

- (a) preparation and submission to GOCD and CDB of annual work plans for the project;
- (b) providing direction to, and supervision of, the day-to-day operations of the project, guided by the project documents and the annual work plans;
- (c) monitoring and evaluation of the project, in a manner consistent with the Project's Monitoring and Evaluation Framework;
- (d) supervision of all components, including ensuring that activities and procurement schedules are carefully planned and executed;
- (e) developing close working relationships with all project participants and stakeholders (including Non-governmental organisations, Government departments, private sector, and Local Government officials) to achieve a shared vision of the Project and its objectives;
- (f) representation of GOCD in all its dealings with consultants, suppliers, contractors and other stakeholders;
- (g) convening, at least monthly, meetings with the contractor(s) and engineering consultants, and with other consultants and/or supplier as required, for the purpose of coordinating activities;

- (h) liaising with CDB on all relevant technical, financial and administrative aspects of the Project;
- (i) submitting to CDB the required Project reports outlined in the Reporting Requirements section of CDB's Appraisal Report in the time and manner prescribed;

Social and Environmental

- (j) oversight of the effective integration of the social and gender elements of the project, including incorporating and monitoring the social and gender aspects of the project at strategic points during implementation;
- (k) incorporation of gender aspects of the Project at strategic points during implementation, including ensuring that project-level ESMPs are fully implemented; and
- (l) ensuring that the mechanisms incorporated to meet CDB's Environmental and Social Safeguards are implemented.

Time Management

- (m) establishing and updating on a monthly basis, a project implementation schedule (in Gantt chart format) showing progress against the baseline;

Financial Management

- (n) controlling the budget and introducing safeguards acceptable to CDB to prevent funds and assets misuse;
- (o) keeping accounts on project-related expenditure and disbursement activities;
- (p) expediting of the preparation and submission to CDB of claims for disbursement/reimbursement with regard to all components financed from the Grant;
- (q) submitting the required financial reports outlined in the Reporting Requirements section of CDB's Appraisal Report in the time and manner prescribed;

Procurement

- (r) managing the procurement processes and ensuring that there is adherence to CDB's procurement policy and procedures;

Contract Management

- (s) management and administration of the implementation of the Project's contracts;
- (t) ensure that all contractual obligations are adhered to and make all necessary arrangements to ensure implementation meets projected targets;
- (u) submitting the required Contract reports outlined in the Reporting Requirements section of CDB's Appraisal Report in the time and manner prescribed.

2.02 Templates to guide the reporting requirements, including content and format, will be provided by CDB.

3. QUALIFICATIONS AND EXPERIENCE

3.01 The successful candidate should have:

- (a) a first degree and post-graduate degree in a relevant discipline (e.g. Engineering and or Construction/Project Management) with a minimum of 10 years' experience in project management, contract management, contract administration or logistics, and 5 years' experience in managing projects of comparable complexity and budgetary value as this Project; or
- (b) a first degree in a relevant discipline (e.g. Engineering and Professional Engineering designation and or Construction/Project Management) with a minimum of 15 years' experience in project management, contract management, contract administration and logistics in managing projects of comparable complexity and budgetary value as this Project.

4. DURATION

4.01 The consultancy is expected to be conducted fulltime over a period of approximately 40 months.

DRAFT TERMS OF REFERENCE
PROCUREMENT SPECIALIST – PROJECT MANAGEMENT UNIT

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica (GOCD) wishes to engage the consultancy services of a Procurement Specialist to function within the Project Management Unit (PMU) of the Dominica Water and Sewerage Company Limited (DOWASCO). DOWASCO, through PMU, will be responsible for the management and implementation of the Dominica Water Sector Strategic Project – financed by the Caribbean Development Bank (CDB) through the United Kingdom Caribbean Infrastructure Partnership Fund resources.

1.02 The captioned project’s impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers.

1.03 The Consultant shall report directly to the Project Coordinator, of the PMU or his/her designate.

General Accountabilities

2.01 The Procurement Specialist (PS) reports to the Project Coordinator (PC), PMU and is responsible for providing technical advice on procurement activities to internal and external clients during all phases of the procurement cycle as specified in the Procurement Plans. He/she will contribute to the development of institutional capacity with respect to procurement policies and procedures to ensure projects realise a high standard of procurement throughout the implementation process.

Specific Accountabilities

2.02 The responsibilities of the PS are to:

- (a) act as a secretary to the Evaluation Committees, ensuring that evaluation of bids/proposals received is done on the basis of criteria stipulated in the bidding documentation and performed in accordance with the procurement procedures set forth in the respective Grant Agreement of assigned CDB projects;
- (b) ensure procurement of works, goods and services is conducted, including advertising, in accordance with the Grant Agreement;
- (c) formulate appropriate evaluation criteria, in the preparation of draft bidding documents, and transmission of those documents to CDB and PMU, DOWASCO in a timely fashion for review and no objection;
- (d) monitor receipt of bids and proposals and ensure their safekeeping until bid opening;
- (e) carry out public bid openings and prepare minutes of these openings;

- (f) providing assistance to PMU staff in drafting terms of reference, defining technical requirements;
- (g) manage complaints and debriefings of unsuccessful bidders;
- (h) specifications, negotiating contracts, etc., as needed;
- (i) ensure preparation of comprehensive evaluation reports according to the standards of the CDB and timely transmission of evaluation reports to CDB for review and no objections;
- (j) notify winning bidders in a timely fashion, and draw up contracts for approval and signature by those individuals authorised to sign on behalf of PMU, DOWASCO, ensuring transmission to CDB of draft contracts requiring prior review and no objection;
- (k) establish and maintain on the premises of the PMU efficient procurement and contracting tracking system (noting important approval dates, awards, contract amounts, etc.), as well as a proper filing system to ensure quick retrieval of procurement information by PMU, DOWASCO staff, visiting supervision missions, annual auditor, etc.;
- (l) for consulting contracts subject to prior review, send copies of draft negotiated contracts for CDB's review and no objection;
- (m) update the procurement plan as needed;
- (n) send procurement notices and contract awards for publication by CDB and national newspaper;
- (o) maintain regular communication with the PC and Accounting Officer to ensure that procurement tracking information is well coordinated with other project planning, project budgeting and other project financial reporting information;
- (p) in consultation with PC, develop and implement a project management and contract administration mentorship programme for Junior Engineers in PMU, DOWASCO aimed at closing significant skill gaps. The programme will be implemented on a rotational basis and address areas such as procurement, time and cost control, contract documentation, and other issues related to management and administration of the implementation of construction contracts; and
- (q) perform any other appropriate tasks determined by PC.

3. QUALIFICATIONS AND EXPERIENCE

3.01 The successful candidate should have:

- (a) a first degree and post-graduate degree in a relevant discipline (e.g. Engineering, Law, Procurement, Finance or Business) with a minimum of eight years' experience in procurement, contract management, contract administration or logistics, of which at least two years must be directly related to a rules-based procurement management function typically associated with a multilateral institution;
- (b) training directly related to procurement or a recognised qualification in procurement;

- (c) knowledge of the current concepts, principles and practices which govern international procurement of goods and works and the contracting of consultant services;
- (d) knowledge of public procurement legislation, systems, organisation and practices, reinforced by prior experience of working on public procurement policy; and
- (e) proven ability to carry out assessments of procurement capacity of implementing agencies, design procurement arrangements for new operations and monitor actions during project implementation.

4. DURATION

4.01 The consultancy is expected to be conducted intermittently over a period of approximately six months.

DRAFT TERMS OF REFERENCE
MONITORING AND EVALUATION OFFICER – PROJECT MANAGEMENT UNIT

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica (GOCD) wishes to engage the consultancy services of a Monitoring and Evaluation Officer to function within the Project Management Unit (PMU) of the Dominica Water and Sewerage Company Limited (DOWASCO). DOWASCO, through PMU, will be responsible for the management and implementation of the Dominica Water Sector Strategic Project – financed by the Caribbean Development Bank (CDB), through the United Kingdom Caribbean Infrastructure Partnership Fund resources.

1.02 The captioned project’s impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers.

1.03 The Consultant shall report directly to the Project Coordinator (PC), of the PMU or his/her designate.

2. OBJECTIVE

2.01 Under the overall guidance of the PC and direct supervision of the Project, the Monitoring and Evaluation (M&E) Officer will be responsible for (a) monitoring the progress on achievement of outputs and ensuring high quality and timely inputs, across all project components; (b) identifying any impediments or challenges that may put the project deliverables or timelines at risk and proposing remedial action to ensure that the project achieves its intended objectives; and (c) managing the project’s evaluation-readiness by adhering to frameworks, processes and schedules for data collection and reporting. The M&E officer will also be responsible for designing and implementing the M&E activities of the Project, assisting PC in preparing Monthly, Quarterly and Annual reports on project progress and monitoring project activities on a regular basis. The M&E Officer will also develop and maintain a system for data collection, analysis and management for the Project. The M&E Officer will adopt a socially inclusive and gender-sensitive approach to data collection, analysis and reporting activities. All data will, to the extent possible, be disaggregated by sex (male, female), age group 15-29 years; and 30 and over, disability status and poverty status.

3. DUTIES AND RESPONSIBILITIES

3.01 The M&E Officer will carry out all data collection, analysis, reporting and related work required to achieve the outlined objectives. Officer will be expected *inter alia* to:

- (a) Develop and strengthen monitoring, inspection and evaluation procedures.
- (b) Monitor all project activities, expenditures and progress towards achieving project output.

- (c) Finalise the logical framework and Results Monitoring Framework for the project including baselines and targets for output, outcome and impact indicators.
- (d) Implement results Monitoring Framework to track project implementation and measure the development impact of the project. This includes preparing suitable databases for data collection and analysis; scheduling and conducting data collection activities; and reporting on a regular and routine basis during project implementation.
- (e) Provide logistical and technical assistance to relevant M&E activities and processes, including support of monitoring visits to project sites.
- (f) Develop monitoring and impact indicator for the project success.
- (g) Monitor and evaluate overall progress on achievement of results and report to project stakeholders on progress and performance.
- (h) Provide feedback to the PC on project strategies and activities, suggesting strategies for improving the efficiency and effectiveness of the project by identifying bottlenecks in completing project activities and developing plans to minimise or eliminate such bottlenecks.
- (i) Produce monthly, quarterly and annual progress reports to document achievement across project components (in the required formats) and provide input, information and statistics for ad hoc and other reporting by the PC.
- (j) Extract lessons learned, share knowledge and disseminate good practices to improve overall program planning, implementation and evaluation.
- (k) Conduct capacity assessment on existing monitoring and evaluation system and develop indicators and a monitoring strategy for the project.
- (l) Participate in annual project reviews and planning workshops and assist the Project Coordinator in preparing relevant reports.
- (m) Lead evaluation efforts to determine the effectiveness and impact of the project.
- (n) Assist in coordinating across project components to ensure effective implementation of M&E/Management Information Systems (MIS).
- (o) Assist project personnel with M&E tools and support them in their use.
- (p) Perform other duties as required.
- (q) Outputs and Performance Indicators shall include:
 - (i) Monthly MIS reports.
 - (ii) Training on M&E/MIS for project and government staff.
 - (iii) Input to reports on the findings and lessons learned from project innovations.

- (iv) Monthly, quarterly and ad hoc reports on project progress based on MIS reports and other data.
- (v) Revised M&E system and processes for the project.
- (vi) Up to date project database.

4. COMPETENCIES

4.01 The successful candidate should have:

- (a) Organises and accurately completes multiple tasks by establishing priorities while taking into consideration special assignments, frequent interruptions, deadlines, available resources and multiple reporting relationships.
- (b) Plans, coordinates and organises workload while remaining aware of changing Priorities and competing deadlines.
- (c) Establishes, builds and maintains effective working relationships with staff and clients to facilitate the provision of support.
- (d) Knowledge Management and Learning.
- (e) In-depth knowledge on MIS, M&E and development issues.
- (f) Excellent knowledge of monitoring and the application of methodology.
- (g) Good understanding of capacity assessment methodologies; excellent ability to identify significant capacity building opportunities.
- (h) Excellent communication skills (written and oral): sensitivity to and responsiveness to all partners, respectful and helpful relations with donors and project staff.
- (i) Ability to lead implementation of new systems (business side) and affect staff behavioural/attitudinal change.

5. SELF MANAGEMENT

- (a) Focuses on result for the client.
- (b) Consistently approaches work with energy and a positive, constructive attitude.
- (c) Demonstrates strong oral and written communication skills.
- (d) Remains calm, in control and good humored even under pressure.
- (e) Demonstrates openness to change and ability to manage complexities.
- (f) Responds positively to critical feedback and differing points of view.
- (g) Solicits feedback from staff about the impact of his/her own behavior.

6. REQUIRED SKILLS AND EXPERIENCE

6.01 The successful candidate should have:

- (a) a first degree and post-graduate degree in Business Administration, Economics public policy, politics, development studies or a related field (required), with a minimum of five years' experience in programme/project formulation, monitoring, and evaluation; and implementation of M&E/MIS in developing countries or in the evaluation of development programmes/ projects;
- (b) specialised training in M&E (official degree or post-graduate certificate programme or a recognised training programme);
- (c) experience in designing tools and strategies for data collection, analysis and production of reports;
- (d) proven Information and communications technology skills;
- (e) expertise in analysing data using statistical software;
- (f) strong training and facilitation skills; and
- (g) the ability to work as part of a team.

7. DURATION

7.01 The consultancy is expected to be conducted intermittently over a period of approximately 36 months.

DRAFT TERMS OF REFERENCE
ENVIRONMENTAL MONITORING OFFICER – PROJECT MANAGEMENT UNIT

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica (GOCD) wishes to engage the consultancy services of an Environmental Monitoring Officer (EMO) to function within the Project Management Unit (PMU) of the Dominica Water and Sewerage Company Limited (DOWASCO). DOWASCO, through the PMU, will be responsible for the management and implementation of the Dominica Water Sector Strategic Project – financed by the Caribbean Development Bank (CDB) through the United Kingdom Caribbean Infrastructure Partnership Fund resources.

1.02 The captioned project’s impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers.

1.03 The Consultant shall report directly to the Project Coordinator, of the PMU or his/her designate.

2. JOB DESCRIPTION

General Accountabilities

2.01 The EMO, is responsible for ensuring that environmental requirements are adhered to during the construction phase of the project financed by CDB implemented by the PMU, DOWASCO through the PMU. His/her duties will include, but will not be limited to:

- (a) reviewing mitigation measures in the contractor’s environmental protection plan (EPP) for suitability and appropriateness and likelihood of meeting performance requirements as stated in the bid documents/contract specifications and project design details including specific items such as responsibilities for environmental monitoring, health and safety, environmental, reporting, public information, consultations and grievance mechanisms;
- (b) monitor the implementation of the EPP ensuring proper implementation of the Environmental Health and Safety mitigation measures;
- (c) liaising with the engineering and supervision consultants engaged by PMU, DOWASCO to ensure effective and timely implementation of environmental management measures;
- (d) undertake regular site visits to verify contractor compliance with the contractor EPP implementation at each project site throughout project implementation;
- (e) participate in meetings to engage the appropriate community/stakeholders;
- (f) prepare weekly and monthly Environmental Monitoring Reports. The reports should identify any environmental and social issues or cases of non-compliance, and make

recommendations for corrective action in a corrective action plan, including specific steps and timing for any remediation/corrective actions to re-establish compliance;

- (g) monitor the implementation of the Corrective Action Plan;
- (h) review Compliance Reports on EPPs submitted by the consulting and supervision engineers engaged under the project; and
- (i) **Transfer of Knowledge:** GOCD is desirous of enhancing the capacity of the officers assigned to the PMU. The Consultant will be responsible for the preparation of a training/mentoring programme where the transfer of knowledge will be pivotal. A training programme with a clearly outlined methodology shall be submitted with the proposal.

3. QUALIFICATIONS AND EXPERIENCE

3.01 Prospective candidates should have a minimum of the following qualifications and experience:

- (a) a Master's Degree in Environment Engineering/Environmental Sciences/Environmental Studies or related field with a minimum of eight years' demonstrated experience in environmental management and environmental sustainability and supervision of environmental aspects of infrastructure projects. Have the ability to express and report results in a concise and clear manner; and
- (b) demonstrate ability to work within a multi-disciplinary team environment, while demonstrating initiative and self-motivation.

4. DURATION

4.01 The consultancy is expected to be conducted intermittently over a period of approximately 36 months.

DRAFT TERMS OF REFERENCE
COMMUNITY LIAISON OFFICER

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica (GOCD) wishes to engage the consultancy services of a Procurement Specialist to function within the Project Management Unit (PMU) of the Dominica Water and Sewerage Company Limited (DOWASCO). DOWASCO, through the PMU, will be responsible for the management and implementation of the Dominica Water Sector Strategic Project – financed by the Caribbean Development Bank (CDB) through the United Kingdom Caribbean Infrastructure Partnership Fund resources.

1.02 The captioned project’s impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers.

1.03 There are significant benefits to be realised from the Project but there are also a range of social and environmental safeguard issues that were identified through the Environmental and Social Impact Assessment (ESIA) which must be managed during implementation. In this regard, the engagement of a Community Liaison Officer (CLO) is imperative to support the Project Coordinator (PC) and the PMU in managing the safeguard aspects of the Project. This critical input is intended to increase the likelihood of realising the project’s intended outcomes.

2. SCOPE OF SERVICES

2.01 The CLO will promote constructive partnerships and communication between DOWASCO and the communities on issues relating to project implementation and will be responsible for implementing community engagement activities as set out in the Stakeholder Engagement Plan. Among other activities, CLO will:

- (a) Review SEP with a view to identifying and documenting any gaps in the (i) stakeholder identification and analysis that were undertaken; (ii) stakeholder engagement programme (e.g., information to be disclosed, format and communication methods; stakeholder consultation methods); and (iii) schedule for the various stakeholder engagement activities. Information in the ESIA should be used to support SEP review and implementation. The SEP must be updated to address any gaps identified;
- (b) Maintain updates to SEP as necessary, based on issues arising during implementation that may include *inter alia*, stakeholder engagement, and land acquisition. Any major changes to the project activities and/or schedule will be duly reflected in the updated SEP.
- (c) Provide timely feedback to PC on concerns raised by community leaders.
- (d) Provide timely feedback to community members on project implementation, concerns raised or important decisions taken by DOWASCO in accordance with agreed protocols.

- (e) Develop public relations programmes along with PMU, DOWASCO and the Gender Responsive and Socially Inclusive Communication Consultant, Non-Governmental Organisations, and Community-based Organisations to educate community members about the project and encourage their continuous buy-in and active participation throughout the project cycle.
- (f) Facilitate dialogue and sensitise Project-affected communities as necessary, with particular attention being paid to obtaining information from the less vocal persons in the communities through the use of differential participatory techniques.
- (g) Manage community members' expectations of the project during scheduled meetings and ad-hoc interaction, as necessary.
- (h) Identify potential grievances or project risks and/or opportunities.
- (i) Review and assist in the finalisation of the Resettlement Action Plan and its implementation in consultation with the Ministry of Housing and Lands.
- (j) Assist Resettlement Action Committee with management of, and timely responses to grievances lodged through the Grievance Redress Mechanism of the SEP.
- (k) Liaise with contractors as needed (e.g. during the local labour recruitment process by assisting with drafting gender-responsive local hiring policies and procedures) especially where community requirements are being solicited.
- (l) Raise awareness of employment opportunities, especially for vulnerable groups in the society and within the Project areas including women, youth and Persons with Disabilities (PWDs).
- (m) Manage stakeholder engagement logistics such as soliciting suggestions/grievances from suggestion boxes, placing communication materials on notice boards and via social media, and arranging community meetings.
- (n) Facilitate stakeholder participation at all relevant levels in accordance with the identified needs of the different categories of stakeholders, particularly women, youth, and PWDs. This may include other activities – participatory assessments and problem-solving of issues, concerns and opportunities, focus group discussions, information-sharing, and community meetings.
- (o) Assist in evaluating the social, environmental and economic impacts of Project activities on the well-being of community members using participatory approaches.
- (p) Monitor implementation of the recommendations proposed under the Consultancy – “Gender Responsive and Socially Inclusive Communication Plan” and participation in training activities;
- (q) Assist PC in ensuring that the implementation of project activities is in conformance with GOCD's and CDB's environmental and social requirements.

- (r) Attend Project Steering Committee meetings as required and provide information on community discussions, highlighting any current and/or potential challenges likely to impact implementation progress.
- (s) Maintain comprehensive and updated minutes of meetings with the community and other stakeholders.
- (t) Prepare and submit to PC inputs for incorporation into monthly progress reports to CDB.
- (u) Prepare and submit to PC, inputs for incorporation into a Project Completion Report (PCR), within three months after practical completion of the works.
- (v) Promote and conduct awareness training on health and safety risks directly associated with the Project. These should include but not be limited to mitigating potential conflicts between any foreign workers and local communities that may arise from an influx of workers to the Project sites during construction, increased risks of harmful practices such as sex work, gender-based violence and the use of illegal drugs.

3. DURATION

- 3.01 The consultancy is expected to last no more than thirty-six (36) months from the date of contract signing.

4. REPORTS/DELIVERABLES

- 4.01 CLO shall report to PC. CLO will furnish reports/deliverables on the assignment as set out below:

- (a) Prior to commencement of the works, develop and implement a results-based, gender-sensitive M&E framework/plan for the SEP that monitors the implementation of SEP and includes the following indicators:
 - (i) number of consultation meetings and other public discussions (forums, focus groups, etc.) conducted within a reporting period. The reporting period will be defined in the framework (e.g. monthly, quarterly, or annually);
 - (ii) % of women participating in consultations by reporting period and disaggregated by at least sex, age and disability status;
 - (iii) number of grievances received within a reporting period, number of those resolved within the prescribed timeline, disaggregated by sex of the complainant; and
 - (iv) number of project-related press materials published /broadcasted in the national media.
- (b) Other information to be collected shall include:
 - (i) Geographic origin and type of grievances received, and reasons for non-resolution within the prescribed timeline including an analysis of trends.
 - (ii) Analysis of project-related press releases content: proportion that is favourable, unfavourable, neutral, and trends.

- (c) Provide a monthly (structured) field report to DOWASCO including consultations undertaken, attendance registers (where applicable), concerns raised, requests raised, concerns resolved, potential risks, grievances or opportunities identified;
- (d) Assist in compiling a quarterly report for external stakeholders on stakeholder engagement activities undertaken during the previous quarter including the current status of M&E actions. The quarterly report shall include summarised information on participatory methods employed, grievances received from stakeholders (including information on incidents and events that resulted in grievances) and will be collated by the responsible staff and referred to the PC. These summaries will be accompanied by information on the implementation status of associated corrective and preventative actions and recommendations. This report shall form part of the quarterly status reporting (provided by PC) for the Project; and
- (e) Assist in the compilation of relevant sections of the PCR.

5. QUALIFICATIONS AND EXPERIENCE

5.01 CLO is expected to possess the following minimum qualifications:

- (a) At least a Master's Degree in Sociology, Rural Development, Anthropology, International Development, Community Development or other relevant discipline.
- (b) A minimum of seven years' relevant practical experience encompassing stakeholder engagement practice, community development, and/or social research using participatory methodologies.
- (c) Fluency in English is required.
- (d) Proficient computer skills and good written and oral communication skills are required.
- (e) Administrative and management competence would be an asset.

DRAFT TERMS OF REFERENCE - PROJECT ENGINEER

1. The Project Engineer will report to the Project Coordinator, Project Management Unit (PMU) and will mainly be responsible for assisting with the implementation of the infrastructure works. His/her duties will include, but will not be limited to:

- (a) assisting PMU with the supervision of the engineering consultants, including review of the monthly and PCR prepared by the Engineering Consultants;
- (b) advising PMU on technical aspects and costs variations of construction;
- (c) assisting PMU with the management and administration of the construction contracts;
assisting PMU with the supervision of the implementation of the Environment and Social Management Plan to ensure that the needs of vulnerable groups of men, women, persons with disabilities, youth and elderly;
- (d) assisting PMU with overseeing capacity-building consultancies for the (1) provision of social and gender capacity building training for the Ministry of Public Works and Digital Economy and other Government agencies, road contractors' and construction workers' and (2) development and implementation of a Gender-responsive and socially inclusive communication plan; and
- (e) any other duties assigned by PMU.

2. Prospective candidates must be civil engineers with a minimum of the following qualifications:

- (a) a Masters' Degree or equivalent in a civil engineering discipline, Project Management, Construction Management or related subject together with a minimum of five years' experience in engineering design and supervision, including project implementation; or
- (b) a Bachelors' Degree in civil engineering and a minimum of eight years of suitable experience in engineering design and supervision, including project implementation;
- (c) a Bachelors' Degree in civil engineering and a minimum of eight years of suitable experience in engineering design and supervision, including project implementation;
- (d) a Masters' Degree or equivalent in a civil engineering discipline, Project Management, Construction Management or related subject together with a minimum of five years' experience in engineering design and supervision, including project implementation; or
- (e) a Bachelors' Degree in civil engineering and a minimum of eight years of suitable experience in engineering design and supervision, including project implementation.

DUTIES AND RESPONSIBILITIES - ACCOUNTING OFFICER

1. The AO reports to PC of the PMU, DOWASCO and is primarily responsible for keeping accounting records and preparing financial statements and payroll on expenditures for PMU and disbursement claims for financing agencies. AO is responsible for assisting PMU in tracking budgetary expenditure of the Project and preparing the relevant reports. AO also assists PMU in the preparation of the administrative budget of the Project.

Specific Accountabilities

2. This position must:

- (a) assist PMU in the preparation of the administrative budget of the Project;
- (b) maintain a General Ledger and Schedules (or such other recording and accounting systems required by DOWASCO and in accordance with generally accepted accounting practices) of all expenditures relating to projects under implementation;
- (c) coordinate with PC and DOWASCO Management in the establishment of a system of reporting on local counterpart requirements and disbursements;
- (d) prepare requests for disbursements from the financing agencies;
- (e) prepare monthly financial statements and supporting schedules;
- (f) prepare financial statements as required for management and/or as specified by lending/donor agency agreements with GOCD;
- (g) prepare financial information for special reports for internal and external use;
- (h) review and track details of all claims from consultants and contractors;
- (i) prepare the payroll (inclusive of benefits, deductions, etc.) for PMU staff;
- (j) prepare accounts receivable billings for staff and others, reconcile suppliers' statements and accruals of quarterly and yearly administrative expenses; and
- (k) any other administrative duties assigned by PC, PMU.

Qualifications and Experience

3. AO is expected to have a Bachelors' degree in accounting or related field or mid-level accounting professional qualification (e.g. Level 2 ACCA, Level 3 CGA). A minimum of three years' experience in accounting is required, in addition to proficiency in computer skills, including use of spreadsheets, database management and word processing. Good written and oral communications skills are required. Prior project-related experience would be an asset.

QUALIFICATION AND EXPERIENCE
OF JUNIOR ENGINEER, PUBLIC RELATIONS OFFICER AND
ADMINISTRATIVE ASSISTANT

1. JUNIOR ENGINEER

1.01 Prospective candidates must be a civil engineer with a minimum of a Bachelor of Science Degree in civil engineering and a minimum of two years of suitable experience in engineering design and supervision, including project implementation.

2. PUBLIC RELATIONS OFFICER

2.01 Prospective candidates must have a minimum qualification of a Bachelors' Degree in Public Relations or related field like Marketing, Communications or Journalism. A minimum of 5 years' experience in in the field of Public Relations. Excellent communication in English and excellent reporting writing skills and understanding of the Jamaican context. Strong analytical and organisational skills.

3. ADMINISTRATIVE ASSISTANT

3.01 Prospective candidate must have a minimum qualification of an Associate Degree in any humanities or social sciences disciplines plus a minimum of five years' experience working in a secretarial or administrative capacity; or advanced secretarial/administrative certification plus five years' working experience in a secretarial/administrative capacity. Previous experience in community-based development projects.

DRAFT ROLES AND RESPONSIBILITIES

**PROJECT STEERING COMMITTEE – UNITED KINGDOM CARIBBEAN
INFRASTRUCTURE FUND PORTFOLIO OF PROJECTS
COMMONWEALTH OF DOMINICA**

1. PURPOSE/ROLE

1.01 The Project Steering Committee (PSC) is integral to achieving effective project delivery. The PSC will review, prioritise and approve changes that exceed thresholds established by the PSC for scope, schedule, and cost in a timely manner relating to the delivery of the undermentioned United Kingdom Caribbean Infrastructure Fund (UKCIF) Projects:

- (a) Road and Bridge Rehabilitation Loubiere to Bagatelle and Road Network Safety Assessment – Post Tropical Storm Erika.
- (b) Development of a Water Sector Strategic Plan, Feasibility Study and Preparation of Detailed Designs for Selected Interventions.

1.02 The outlined roles and responsibilities will be for the finalisation of the Technical Assistance and the Capital Works phases of both projects.

1.03 This will be done in a manner to ensure proper oversight and effective management of project changes.

2. COMPOSITION

2.01 The PSC shall compose the following positions and key stakeholders:

- (a) Chairpersons: Financial Secretary (or designate of Financial Secretary) – Ministry of Finance.
- (b) Deputy Chairperson: Permanent Secretary (or designate of Permanent Secretary) – Ministry of Public Works and The Digital Economy.
- (c) Secretary: Senior Capital Projects Manager – Climate Execution Agency for Dominica (CREAD).
- (d) GM/or Chief Engineer – Dominica Water and Sewerage Company Ltd. (DOWASCO)
- (e) Chief Technical Officer – Ministry of Public Works and The Digital Economy
- (f) Project Coordinator – Ministry of Public Works and The Digital Economy and/or CREAD
- (g) Project Coordinator – Project Management Unit, DOWASCO

2.02 Key support persons – Project Specialist and other experts to attend as required. These special invitees will, however, not be authorised to vote.

2.03 For the proceedings of the meeting to be valid a minimum of four members must be in attendance for a quorum to be formed. This is to include: Chairperson or Deputy Chairperson; Secretary; and the

Project Coordinator for the respective project being discussed. In the absence of the Project Coordinator, the Chief Engineer (DOWASCO) or the Chief Technical Officer (Ministry of Public Works and the Digital Economy) must be present for the water or road project respectively.

3. RESPONSIBILITIES

3.01 The PSC approves or rejects proposed recommended changes for the projects. Approved recommended changes are to be submitted to CDB for review and or 'no-objection' in accordance with the Grant Agreement.

3.02 Additionally, the PSC shall:

- (a) provide overall operational guidance for the implementation of the Projects to ensure that the Projects meet the intended objectives, in line with GOCD policy;
- (b) provide assistance and guidance to the PCs in handling implementation and coordination problems brought to its attention;
- (c) review and approve any alternative programmes to be included in presentations to CDB for consideration and disbursement; and
- (d) monitor the efficiency and effectiveness of the resource allocation requirements for the projects.

4. RECORDING OF PROCEEDINGS

4.01 Where practicable, the Secretary shall prepare an agenda for meetings and documents that relate to the PSC which shall be forwarded to members in sufficient time to enable consideration prior to meetings.

4.02 Accurate Minutes shall be kept of each meeting of the PSC. The Minutes of a meeting shall be submitted to committee members for ratification at the next meeting of the Committee. When confirmed, the Minutes shall be signed by the Chairperson and another member of the committee.

5. FREQUENCY OF MEETINGS

5.01 Project Status Quarterly meetings shall be convened to meet with the CDB Supervisory Team.

5.02 The PSC shall convene a meeting within seven days of the submission of an evaluated change request by the Project Coordinator of the Projects at 1.01. Feedback on such issues may be sought as a matter of urgency through a round-robin procedure. The PSC meetings may be scheduled to coincide with key milestones to be achieved in the respective projects.

6. TERM

The PSC will function during the period of the Project and thereafter be disbanded.

PROJECT MANAGEMENT UNIT
BUDGET

Item	CDB (UKCIF- USD)	GOCD USD	Total USD
Project Management and Project Officers	484,500	495,929	980,429
Public Consultations/Office/Equipment	10,000	285,000	295,000
Total	494,500	780,929	1,275,429
Contingency 5%	24,725	39,046	63,771
Project Budget	519,225	819,975	1,339,200
Percentage Contribution	39%	61%	100%

PROJECT IMPLEMENTATION SCHEDULE

ID	Task Mode	Task Name	Duration	Start	2021				2022				2023				2024			
					04	01	02	03	04	01	02	03	04	01	02	03	04	01	02	03
1	✦	Water Sector Strategic Development Project	1034 days	Thu 1/14/21																
2	✦	Phase II - Feasibility Study, Designs and Bid Documents	185 days	Mon 2/15/21																
3	✦	CDB Appraisal - Captial works	51 days	Wed 9/8/21																
4	✦	CDB President's Approval	1 day	Thu 11/18/21																
5	✦	Grant Agreement Signed GOCD	1 day	Thu 12/30/21																
6	✦	Conditions Precedent to first Disbursement satisfied	1 day	Fri 12/31/21																
7	✦	Procurement of Project Management Unit Staff	61 days	Fri 1/7/22																
8	✦	Assignment of PMU staff	64 days	Mon 1/3/22																
9	✦	Procurement of Vehicles	64 days	Mon 1/3/22																
10	✦	Procurement of Computers and accessories for PMU	275 days	Mon 3/14/22																
11	✦	Procurement of Engineering Supervisory Consultants	61 days	Fri 10/1/21																
12	✦	Engagment of Engineering Supervisory Consultants	527 days	Tue 1/4/22																
13	✦	Engagement of Gender-responsive and Socially Inclusive Consultant	128 days	Mon 6/6/22																
14	✦	Prequalification of Contractors	33 days	Wed 9/15/21																
15	✦	Issuance of Bids	66 days	Wed 11/17/21																
16	✦	Award of Bids	4 days	Mon 2/28/22																
17	✦	Construction Works	400 days	Tue 3/1/22																
18	✦	Lot 1 - Water Treatment Plants	283 days	Fri 4/1/22																
19	✦	Lot 2 - Roseau Valley and Calibishie	323 days	Tue 3/1/22																
20	✦	Lot 3 - West Coast	300 days	Tue 3/1/22																
21	✦	Lot 4 - East Coast	360 days	Fri 4/1/22																
22	✦	Lot 5 - Jimmit WWTP, Sewer System and Outfall	400 days	Tue 3/1/22																
23	✦	Defects Liability Period	357 days	Wed 5/3/23																
24	✦	Lot 1 - WTP	262 days	Wed 5/3/23																
25	✦	Lot 2 - Roseau Valley and Calibishie	262 days	Fri 5/26/23																
26	✦	Lot 3 - West Coast	262 days	Tue 4/25/23																
27	✦	Lot 4 - East Coast	262 days	Fri 8/18/23																
28	✦	Lot 5 - Jimmit WWTP, Sewer System and Outfall	262 days	Tue 9/12/23																
29	✦	Project Completion	1 day?	Thu 9/12/24																

Data 1

DRAFT TERMS OF REFERENCE
ESTABLISHMENT OF A COMMUNITY OVERSIGHT COMMITTEE

1. BACKGROUND

1.01 The Government of the Commonwealth of Dominica has requested assistance from the Caribbean Development Bank for financing to provide by the United Kingdom through the Department for International Development to implement the Water Sector Strategic Plan (WSSP). The captioned project's impact is to improve universal access to reliable and affordable water and sanitation services with emphasis on vulnerable communities in Dominica. This objective is expected to yield the following outcomes:

- (a) efficient, climate resilient, reliable and sustainable supply of potable water and sanitation systems to all consumers within targeted networks of Dominica; and
- (b) enhanced operational capacity of DOWASCO to deliver better service to customers.

1.02 The Project will be executed by the Dominica Water and Sewerage Company Limited (DOWASCO), through a Project Management Unit (PMU).

1.03 Given the focus of DOWASCO and recognising the importance of community participation to successful implementation and outcomes sustainability, the establishment and operation of a Community Oversight Committee (COC) in all project communities is necessary.

2. PURPOSE

2.01 The COC will be set up in each community to serve as liaison between the community and DOWASCO and to assist DOWASCO with project oversight during the construction phase. The COC will provide a mechanism for two-way communication between the community and DOWASCO during project implementation.

3. COMPOSITION

3.01 The COC will comprise three persons selected by DOWASCO in consultation with the Community Council and should have at least one female representative and a representative from persons with disabilities, where practicable.

4. FUNCTIONS

4.01 The COC's functions will include the following:

- (a) keeping community members informed about matters related to construction of the water supply systems;
- (b) monitoring progress of construction;
- (c) reporting matters of concern to DOWASCO, including concerns and any feedback or suggestions on improving implementation or building on good practice; and
- (d) participating in public education and promotional activities related to the Project.

ESTIMATED QUARTERLY DISBURSEMENT SCHEDULE

Year	Quarter	OSF-GBP	Finance Charges	Total	Cumulative
2022	2022 - Q1	1,608,224	-	1,608,224	1,608,224
	2022 - Q2	4,803,930	-	4,803,930	6,412,154
	2022 - Q3	5,333,422	-	5,333,422	11,745,576
	2022 - Q4	5,351,185	-	5,351,185	17,096,761
Sub-total		17,096,761	-	17,096,761	17,096,761
2023	2023 - Q1	5,338,665	-	5,338,665	22,435,426
	2023 - Q2	5,320,251	-	5,320,251	27,755,677
	2023 - Q3	1,911,702	-	1,911,702	29,667,379
	2023 - Q4	326,569	-	326,569	29,993,948
Sub-total		12,897,187	-	12,897,187	29,993,948
2024	2024 - Q1	324,924	-	324,924	30,318,872
Sub-total		324,924	-	324,924	30,318,872
Total		30,318,872	-	30,318,872	30,318,872

PROCUREMENT PLAN

A. General

1. Project Information

Country: Commonwealth of Dominica
Beneficiary: Government of the Commonwealth of Dominica
Project Name: Dominica Water Sector Strategic Development Project
Executing Agency: Dominica Water and Sewerage Company Limited

2. Bank's Approval Date of the Procurement Plan: December 9, 2021

3. This Procurement Plan is valid until: March 31, 2024

4. Prior Review Thresholds: Procurement decision subject to prior review by the Bank.

Procurement Method	Prior Review Threshold (USD)	Comments
Limited Bidding (LB) - national	greater than and equal to 20,000	
Limited Bidding (LB) – international	greater than and equal to 20,000	
ICB (works)	greater than and equal to 1,000,000	
Firms/Individuals Direct Contracting	All	
Individual Consultant Selection	greater than 55,000	
Non-Bank Funded	No review	Procurement procedures of GOCD apply

5. Reference to relevant Procurement Guidelines

- Procurement Policy and Procedures for Projects Financed by CDB (2019)
- Procurement Procedures for Projects Financed by CDB (January 2021)

6. Any Other Special Procurement Arrangements

- Not Applicable

7. Procurement Waivers

- No Procurement Waivers were required as part of this Appraisal

B. Goods Works and Non-Consulting Services

Ref No.	Contract (Description)	Estimated Cost (USD)	Procurement / Selection Method	Prequalification (Yes/No)	Review by Bank (Prior/Post)	Expected Bid-Opening Date	Comments
73608-G-31	Stakeholder Consultations and Workshops	■	LB - National	No	Post	February 2022	
73608-G-5	Vehicles (3)	■	LB – National	No	Post	January 2022	
73608-G-6	GIS Software, IT Software, training and support equipment	■	LB – National	No	Prior	January 2022	
73608-G-7	Computers and accessories	■	LB	No	Prior	June 2022	
73608-W-25	Lot 2 - Roseau Valley/Calibishie	■	ICB	Yes	Prior	February 2022	Prequalification commenced September 10, 2021, and submissions was November 20, 2021
73608-W-26	Lot 3 - West Coast	■	ICB	Yes	Prior	February 2022	Prequalification commenced September 10, 2021, and submissions was November 20, 2021
73608-W-27	Lot 4 - East Coast	■	ICB	Yes	Prior	February 2022	Prequalification commenced September 10, 2021, and submissions was November 20, 2021
73608-W-28	Lot 5 - Wastewater Treatment Plant Jimmit	■	ICB	Yes	Prior	February 2022	Prequalification commenced September 10, 2021, and submissions was November 20, 2021
73608-W-3	Lot 1 Water Treatment Plants	■	ICB	Yes	Prior	February 2022	Prequalification commenced September 10, 2021, and submission was November 20, 2021

C. Consulting Services

Ref No.	Assignment (Description)	Estimated Cost	Selection Method	Review by Bank (Prior/Post)	Expected Proposal Submission Date	Comments
73608-C-10	Project Coordinator	■	DS	Prior	December 2021	PC was previously engaged under CDB's Guidelines for the Selection and Engagement of Consultants by Recipients of CDB Financing of the Third Water Supply Project. PC is now to be contracted using the DS method to reflect the natural continuation of existing functions within the PMU, as allowed for under paragraph 8.22 (b) of CDB's Procurement Procedures (2021)
73608-C-11	Procurement Specialist	■	ICS	Prior	March 2022	
73608-C-13	Monitoring and Evaluation Officer	■	ICS	Prior	December 2021	Request for Expressions of Interest issued September 30, 2021. Date of submission was November 4, 2021
73608-C-14	Community Liaison Officer	■	ICS	Prior	December 2021	Request for Expressions of Interest issued September 30, 2021. Date of submission was November 4, 2021.
73608-C-16	Project Engineer	■	DS	Prior	December 2021	PE was previously engaged under CDB's Guidelines for the Selection and Engagement of Consultants by Recipients of CDB Financing of the Third Water Supply Project. PC is now to be contracted using the DS method to reflect the natural continuation of existing functions within the PMU, as allowed for under paragraph 8.22 (b) of CDB's Procurement Procedures (2021)
73608-C-23	Gender Responsive and Socially Inclusive Communication Plan	■	QCBS	Prior	May 2022	
73608-C-4	Construction Supervision	■	DS	Prior	October 2021	The CSC was previously engaged under the Study, utilising CDB's Procurement Procedures. The CSC is now to be contracted using the DS method to reflect the natural continuation of services to the Project, as allowed for under paragraph

						8.22 (b) of CDB's Procurement Procedures (2021). Request for proposal issued September 2021. Consultant submitted financial proposal October 2, 2021.
73608-C-9	Strategic Framework for the Water Sector in Dominica	■	DS	Prior	March 2022	Specialist legislative drafting services within the GOGD to be engaged. The Consultant shall be engaged using the DS method to reflect the engagement of a firm which is qualified or has experience of exceptional worth for the assignment, as allowed for under paragraph 8.22 (e) of CDB's Procurement Procedures (2021) and who would have completed similar services for the GOCD successfully in the past.

D. Summary of Proposed Procurement Arrangement

Project Components / Contracts	CDB ('000)						NBF ('000)		Total Cost ('000)
	DS	ICB	ICS	LIB	QCBS	Shopping	Counterpart	Co-Financing	
Infrastructure Works	-	█	-	-	-	-	█	-	█
Lot 1 Water Treatment Plants	-	█	-	-	-	-	█	-	█
Lot 4 - East Coast	-	█	-	-	-	-	█	-	█
Lot 3 - West Coast	-	█	-	-	-	-	█	-	█
Lot 2 Roseau Valley/Calibishie	-	█	-	-	-	-	█	-	█
Lot 5 - Wastewater Treatment Plant Jimmit	-	█	-	-	-	-	█	-	█
Engineering and Construction-related Services	█	-	-	-	-	-	█	-	█
Construction Supervision	█	-	-	-	-	-	█	-	█
Goods	-	-	-	█	-	-	-	-	█
Vehicles (3)	-	-	-	█	-	-	-	-	█
Computers and accessories	-	-	-	█	-	-	-	-	█
GIS Software, IT Software, training and support equipment	-	-	-	█	-	-	-	-	█
Institutional Strengthening	█	-	-	-	-	-	█	-	█
Strategic Framework for the Water Sector in Dominica	█	-	-	-	-	-	█	-	█
Other Project Support Services	-	-	-	-	█	-	█	-	█
Gender Responsive and Socially Inclusive Communication Plan	-	-	-	-	█	-	█	-	█
Project Management	█	-	█	-	-	█	-	-	█
Project Coordinator	█	-	-	-	-	-	-	-	█
Project Engineer	-	-	█	-	-	-	-	-	█
Monitoring and Evaluation Officer	-	-	█	-	-	-	-	-	█
Community Liaison Officer	-	-	█	-	-	-	-	-	█
Procurement Specialist	-	-	█	-	-	-	-	-	█
Stakeholder Consultations and Workshops	-	-	-	-	-	█	-	-	█
Summary Costs	█	█	█	█	█	█	█	-	█

This information is withheld in accordance with one or more of the exceptions to disclosure under the Bank's Information Disclosure Policy.

Goods, Works and Non-Consultancy Services

- NCB - National Competitive Bidding
- ICB - International Competitive Bidding
- RCB - Regional Competitive Bidding
- LB - Limited Bidding
- DS - Direct Selection
- FA - Force Account
- CP - Commercial Practices
- APA - Alternative Procurement Arrangements
- NBF - Non-Bank Financed
- Other

Consultancy Services:

- QCBS - Quality and Cost-Based Selection
- QBS - Quality-Based Selection
- FBS - Fixed Budget Selection
- LCS - Least-Cost Selection
- CQS - Consultants' Qualification Selection
- DS - Direct Selection
- CP - Commercial Practices
- APA - Alternative Procurement Arrangements
- ICS - Individual Consultants Selection
- NBF - Non-Bank Financed
- Other (as above)

REPORTING REQUIREMENTS

Report Implementation		Frequency	Deadline for Submission	Responsibility
1.	Progress Reports on implementation status and performance of the project in relation to planned schedule and objectives (planned versus actual) in the required formats. Minutes of project steering committee/Technical advisory group and monthly reports from supervising consultant and contractor should be attached	Monthly/ Quarterly	Within 10 days after the end of each calendar month until Project implementation is completed, commencing one month after the signing of Grant/Loan Agreement	PC with input from the M & E Officer
2.	Evaluation Reports on prequalification and tenders for works	-	Within two weeks of the submission deadlines.	PC
3.	Project Investment Cost Reports on the investment costs of the Project. Updated project schedule (Gantt Chart with task dependencies)	Quarterly	Two weeks after the end of each quarter until Project implementation is completed, commencing with the first quarter.	PC
4.	Civil Works Progress Reports for each phase of the Civil Works contracts.	Monthly	Within three weeks after the end of each calendar month until Project implementation is completed.	Construction Supervision Consultant(s).
5.	Consultant's Report on Technical assistance and related components	As applicable	Per applicable Contract. Submitted to CDB within 1 week of receipt from consultant	Technical Assistance Consultant(s)
6.	Completion Report for each Civil Works Contract (including as-built drawings).		Within two months of the date of issue of a certificates of practical completion for each Phase of Works Contract.	Construction Supervision Consultant(s)
7.	Annual Work Plan and Budget (AWPB) by project component detailing planned activities associated with costs and timing	Annually	Beginning one quarter after the Grant/Loan Agreement is signed	PC
8.	Updated Procurement Plan	Annually or more regularly as needed	Always covering the entire period of project implementation, until completion	PC
9.	PCR on the implementation and on the early operation stage of the Project.		Within three months of practical completion of the Project.	PC
10.	Operation: Maintenance Plan for the Project, including reports of condition assessments	Annually	By December 31, commencing in 2024.	DOWASCO
11.	<u>DOWASCO Annual Monitoring report - Operating Performance Indicators including</u> number of households serviced; unplanned water supply disruptions due to high turbidity; turbidity; NRW	Semi-annual	Within one month of the end of the half-year	DOWASCO

FORM OF PROJECT COMPLETION REPORT

1. Dispatch of information: designation of the person responsible:

(a) The information below has to be sent to CDB under the responsibility of:

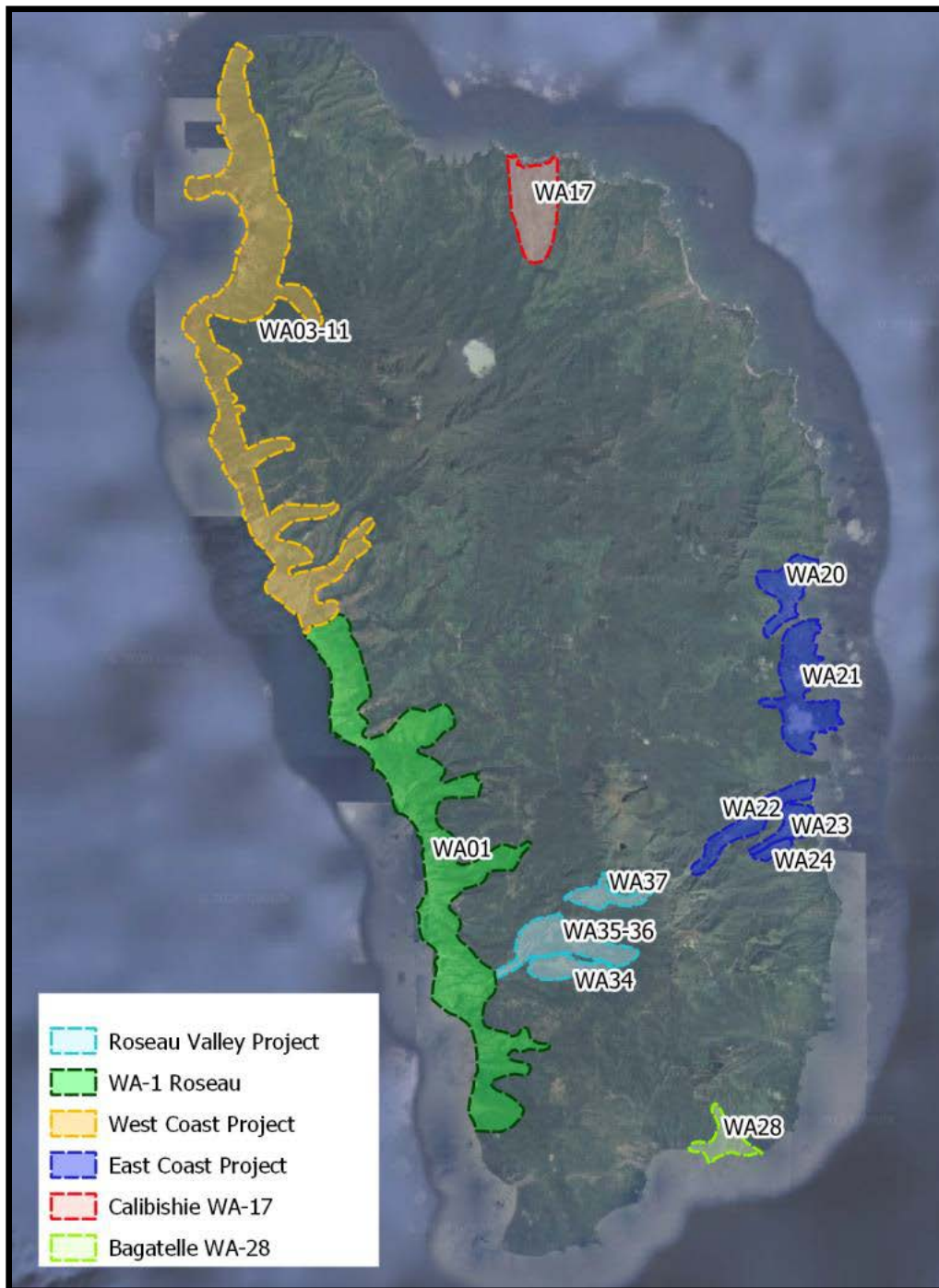
Company	
Contact person	
Title	
Function/Department	
Address	
Phone	
Fax	
Email	

(b) The above-mentioned contact person(s) is (are) the responsible contact(s) for the time being. GOCD shall inform CDB immediately in case of any change.

2. Information on the end of works and first 12 (twelve) months of operation:

- (a) GOCD shall deliver to CDB a completion report with the following information on project completion and initial operation after a year of the commissioning of the project:
- (i) a brief description of the technical characteristics of the project as completed, explaining the reasons for any significant change;
 - (ii) the date of completion of each of the main project's components, explaining the reasons for any possible delay;
 - (iii) the final cost of the Project, explaining the reasons for any possible cost increases vs. initial budgeted cost;
 - (iv) the number of new jobs created by the project: both jobs during implementation and permanent new jobs created;
 - (v) a description of any major issue with impact on the environment;
 - (vi) description of the Climate Action and/or CC resilience (adaptation) aspects of the project and their implementation and level of success in operation to date;
 - (vii) update on the project's demand or usage and comments;
 - (viii) any significant issue that has occurred and any significant risk that may affect the project's operation; and
 - (ix) any legal action concerning the project that may be ongoing.

PRIORITISED WATER AREAS



Note: Bagatelle WA-28 not considered for implementation under this project.