Ex-Ante Evaluation (for Japanese ODA Loan)

Central America and the Caribbean Division,
Latin America and the Caribbean Department,
Japan International Cooperation Agency

1. Name of the Project

（１）Country: Co-operative Republic of Guyana (Guyana)

（２）Project Site / Target Area: Demerara-Mahaica

（３）Project: Water Supply Improvement Project

Loan Agreement: January 22, 2026

2. Background and Necessity of the Project

（１）Current State and Issues of the Water Sector and the Priority of the Project in Guyana

Guyana, a member country of the Caribbean Community, is located on the northern coast of South America bordering Venezuela and Suriname, and has a population of approximately 820,000 (WHO, Data on Guyana, 2024). Since oil production began in 2020 following the discovery of major offshore oil reserves in 2015, the country's real GDP has continued to grow at a double-digit rate, i.e., 20.1% in 2021, 63.3% in 2022, 33.8% in 2023, and 43.4% in 2024. As investment has increased, there has been a rapid influx of population into the outskirts of Georgetown, the capital city, where the government has been developing residential land and providing housing to low and middle-income earners. This development, however, has been hindered by underdeveloped water infrastructure (IDB, 2025).

According to the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) report (2023), the percentage of the population across Guyana who can use an improved water service when needed rose from 85% in 2015 to 88% in 2022 due to donor support and other factors. At the same time, however, the report also points out that there are still disparities in supply volume, quality, and hours of availability of water supply services between urban and peri-urban (urban fringe) areas. In particular, in Demerara-Mahaica, the region that includes the capital city of Georgetown and whose population is growing rapidly, water infrastructure development remains inadequate despite the region being rich in surface and ground water resources. The population of Demerara-Mahaica is increasing at an annual rate of 5.3%, and with the existing infrastructure, it is forecast that there will be a demand-supply

gap of 26,000 m3/day by 2044. In addition, Guyana's existing water infrastructure depends on outdated facilities built in the 19th century, with insufficient meter installation and a water bill collection system that has yet to be adequately digitized and integrated, resulting in a high non-revenue water rate of 63%. Furthermore, the country relies mostly on groundwater sources for its existing water supply system and Guyana Water Incorporated (GWI), the national provider responsible for water supply and sewerage services, is under financial strain due to the electricity bills associated with constant operation of well pumps, which consumes a large amount of electricity. Consequently, Guyana has been unable to make adequate and timely capital investments to meet its water demand, which has been increasing year-by-year.

The long-term state development policy of Guyana "Green State Development Strategy: Vision 2040" sets out that one of the goals that the country seeks to achieve by 2040 is to provide its people, particularly the poor, with sufficient access to quality public services (electricity, water and sanitation facilities) in line with international health standards.

In order to increase the sustainability of water and sanitation services with respect to provision, management and finance, the GWI Strategic Plan (for 2021-2025) aims to reduce the non-revenue water rate and achieve access to safely managed drinking water by installing water meters and developing improved infrastructure with better resilience to climate change.

The Water Supply Improvement Project (hereinafter referred to as "the Project") will contribute to achievement of this goal by: constructing a water treatment plant that will utilize surface water from the East Demerara Water Conservancy, the largest reservoir in Guyana, for use in Diamond, Demerara-Mahaica, one of the districts that are predicted to face a particularly serious supply-demand gap in water supply in the future; improving the water transmission and distribution pipe networks in three districts with a particularly high non-revenue water rate, namely East Bank of Demerara (EBD), East Coast Demerara (ECD), and Cummings Lodge Water System (CLWS); and helping increase the capacity of GWI to take measures against non-revenue water.

（２）Japan's and JICA's Policy Cooperation Policy and Operations in the Water Sector

The Country Development Cooperation Policy for the Co-operative Republic of Guyana (April 2022) cites the "construction of a resilient society" as a priority area, while the JICA Country Analysis Paper for the Caribbean Community

(CARICOM) (March 2022) notes that although Guyana's rate of access to drinking water (percentage of the population who can use an improved water service when needed) is high at 88%, the water supply pipeline coverage rate is low at 65.4%, so that improving this rate is an urgent task.

Furthermore, in the JICA Global Agenda (issue-specific strategies) for "Sustainable Water Resources Management and Water Supply," the cluster strategy for "Supporting the Growth of Water Utilities" also identifies the improvement of operation and management of water utilities as a priority area. The Project is therefore in line with the above policy, analysis and strategy.

In addition, the Project will contribute to the SDGs, namely Goal 6 "Ensure access to water and sanitation for all" and Goal 11 "Make cities and human settlements inclusive, safe, resilient, and sustainable."

Furthermore, the Japanese government's "Kumamoto Initiative for Water," announced by former Prime Minister Kishida at the 4th Asia-Pacific Water Summit in April 2022, will provide 500 billion yen in aid over five years to accelerate water-related efforts in the Asia-Pacific region and around the world with the aim of achieving the SDGs by 2030 and carbon neutrality by 2050 through the use of digital technology and innovation, etc., to develop quality infrastructure. The Project will also contribute to this initiative.

（3）Other Donors' Activities

The Inter-American Development Bank (IDB) and World Bank (WB) are major donors to Guyana's water sector. Through the Water Supply and Sanitation Infrastructure Improvement Program (2014-2021) and other initiatives, the IDB has implemented projects such as for water supply/sewerage system improvement and waste management in Georgetown and Linden, the second largest city in Guyana, with the aim of increasing the efficiency, quality, and sustainability, etc. of drinking water services, and supports enhancement of the organization of GWI. Through the Guyana Water Sector Consolidation Project (2006-2011), the WB aimed toward creating an environment in which sustainable and universal use of affordably-priced safe water is available even to the poorest people. It improved water supply facilities and other infrastructure in Pomeroon-Supenaam (Region 2), Essequibo Islands-West Demerara (Region 3), and Mahaica-Berbice (Region 5), which are coastal peri-urban areas, and provided technological cooperation in the field of water supply technology. Furthermore, the European Investment Bank and Caribbean Development Bank are working under a joint initiative to supply safe water to five communities through

construction of five water treatment plants, replacement of aging pipes and installation of water meters in both Regions 2, 3 and 5 of Guyana, and East Berbice-Corentyne (Region 6), which is also a coastal area. All the above projects by other donors were implemented for GWI.

3. Project Description

（１）Project Description

① Project Objective

The objective of the Project is to increase access to safe drinking water in the target area, Demerara-Mahaica, by constructing a water treatment plant, improving the water transmission and distribution pipe networks, and helping increase the ability to take measures against non-revenue water, thereby contributing to improvement of the living environment, and industrial and economic development.

② Project Components

The Project consists of two components: A) Civil Works and Procurement of Equipment and B) Consulting Services.

A) Construction of a new water treatment plant (capacity: 26,000 m3/day) in the Diamond district, together with installation of water transmission and distribution pipes (approximately 15 kilometers), and installation of solar power generation equipment (0.6 MW) inside the plant. Implementation of measures against non-revenue water (network updates, water leak repairs, and installation of ultrasonic smart water meters) in EBD, ECD and CLWS.

B) Consulting services (construction management support, creation of action plans for non-revenue water reduction, activities to raise residents' awareness, etc.)

③ Project Beneficiaries（Target Group）

Approximately 150,000 people in approximately 38,000 households living in the Diamond district, EBD, ECD and CLWS

（２）Estimated Project Cost

7,484 million Yen (Japanese ODA loan: 5,242 million Yen)

（３）Schedule (cooperation period)

July 2025 – December 2030 (66 months)

In accordance with the definition set by IDB, the co-financing partner, completion of all disbursements including those associated with consulting services (December 2030) is considered as the completion of the Project.

（４）Project Implementation Structure

１）Borrower: Co-operative Republic of Guyana

２）Guarantor: None

３）Executing Agency/Operation and Maintenance System: Guyana Water Incorporated (GWI)

（５）Collaboration and Sharing of Roles with Other Donors

１）Japan’s Activity

Japan has implemented water sector cooperation projects for Guyana through GWI, namely the grant aid project “Project for Water Supply in Corriverton” (First phase: Exchange of Note in July 2006 with a grant amount of 651 million yen, Second phase: Exchange of Note in June 2007 with a grant amount of 725 million yen) and the grant aid project “The project for Water Supply in Corriverton (Phase II)” (Grant Agreement in January 2009 with a grant amount of 867 million yen), which enabled 24/7 supply of safe water in the town of Corriverton, located near the eastern border with neighboring Suriname, mainly through the construction of two water treatment plants and installation of water transmission and distribution pipes in the town. In addition, Japan has also carried out grant aid projects on the East Demerara Water Conservancy, which is planned to be the water source for the Project, namely the “Project for the Rehabilitation of the East Demerara Water Conservancy” (Grant Agreement in March 2011 with a grant amount of 289 million yen) and “The Project for the Rehabilitation of the East Demerara Water Conservancy (2)” (September 2011 with a grant amount of 302 million yen), to assist with repair of the reservoir, which had been damaged due to record-breaking heavy rain. In the past, Japan has provided technological cooperation to the water sector of Guyana mainly through acceptance of trainees. Most recently, in FY2024, Japan accepted a trainee from Guyana into the themed training program “Water Supply Management and Slow Sand Filtration (Ecological Purification System).”

２）Other Donors’ Activity

As stated in “2. Background and Necessity of the Project (3) Other Donors’ Activities,” the IDB and WB have been working to improve the water supply and sewerage facilities, and also enhance the organization of GWI. The Project is a syndicated loan program co-financed by the IDB and JICA.

（３）Environmental and Social Consideration and Gender Category

１）Environmental and Social Consideration

① Category: B

② Reason for Categorization: The Project does not relate to the sensitive sectors or characteristics, and is not located in the sensitive areas given in the JICA Guidelines for Environmental and Social Considerations (January 2022), and its potential adverse impact on the environment is not likely to be significant.

③ Environmental Permit: The laws of Guyana require the creation of an EIA report. With the cooperation of the co-financing partner the IDB, a draft Environmental and Social Impact Assessment (ESIA) report was completed in June 2025 and is expected to be approved by the local certification authority, the Environmental Protection Agency (EPA), by the end of February 2026.

④ Anti-Pollution Measures: Although no large-scale emission of air pollutants is expected, relevant measures and monitoring will be implemented to ensure that emission standards are met. It is planned for wastewater to be appropriately managed during construction through suitable wastewater control, monitoring, testing and recording. The Project is not expected to produce any special or hazardous waste, and the small amounts of waste resulting from machine and vehicle maintenance work will be properly disposed of in accordance with the relevant regulations of Guyana. Construction work may affect the quality of the soil, for example as a result of construction soil being washed away during land preparation or drilling, but the impact can be minimized by implementing mitigation measures, such as protective measures that prevent sediment runoff and the introduction of appropriate sanitation systems (such as portable toilets).

⑤ Natural Environment: The project site is not located within or adjacent to any sensitive areas such as national parks, and any adverse impact on the natural environment is expected to be minimal.

⑥ Social Environment: The project site is owned by the government, is uninhabited, and is not farmed for commercial crops. Implementation of the Project is therefore unlikely to result in any involuntary relocation of residents, or financial compensation. Stakeholder consultation was held and completed in April 2025, at which time no particular objections to the Project were raised.

⑦ Other/Monitoring: During construction, contractors will perform pollution monitoring under the supervision of the executing agency, and during operation, the executing agency will perform monitoring of pollution control

measures (amount of waste generated, implementation status of waste management plans, etc.)

２）Cross-Sectoral Issues

① Climate Change Measures

By utilizing surface water as a water source, the Project will reduce use of conventional well pumps, which consume large amounts of electricity, and is therefore expected to produce a climate change mitigation effect (estimated reduction of GHG emissions) equivalent to a reduction of 2,013 tons/year of CO2 emissions. The coastal areas of Guyana, including the Demerara-Mahaica region, are subject to a variety of natural disasters that are exacerbated by climate change, such as floods, storm surges and rising sea levels. As water supply and sewerage infrastructure in coastal areas is extremely vulnerable to flood damage, it is planned for the water treatment plant and distribution pipes constructed by the Project to be designed with consideration given to resilience against disasters. Hence, by utilizing surface water to reduce GHG emissions, and developing infrastructure that is resilient to climate change, the Project will also help Guyana to achieve its Nationally Determined Contributions (NDC) goals.

② Poverty Measures and Awareness

Nothing in particular.

③ AIDS/HIV and Other Infectious Disease Measures

Nothing in particular.

④ Participatory Development

Nothing in particular.

⑤ Disability Considerations Etc.

It is expected for the Project to establish plans to further expand the participation of women and people with disabilities in GWI operations, and provide training on gender and inclusion.

３）Gender Category:■ GI (S) (Gender Informed (Significant))

<Details of Activities/Reason for Categorization>

The IDB conducted a preliminary gender analysis and found that GWI did not have its own gender policies, and only achieved partial gender equality at managerial level. To address this problem, it has been agreed that the Project will develop an action plan to promote diversity, provide a leadership training program for women, and monitor the number of female employees of GWI participating in the program.

（４）Other Important Issues

Nothing in particular.

4. Targeted Outcomes

（１）Quantitative Effects

Outcomes (Operation and Effect Indicators)

Indicator	Baseline (Actual value in 2025)	Target (2030) [On project completion]*
Number of households in Diamond district connected to new water treatment plant	0	5,645
Non-revenue water rate in EBD (%)	69	47
Non-revenue water rate in ECD (%)	74	47
Non-revenue water rate in CLWS (%)	55	33
Number of female GWI employees participating in leadership training	0	30

*The Project will use the same operation and effect indicators as the IDB. As the IDB uses indicator values on completion of the Project as target values, JICA will do the same.

（２）Qualitative Effects

Improvement of the living environment, and industrial and economic development in the target area

（３）Internal Rate of Return

Based on the assumptions listed below, the economic internal rate of return (EIRR) for the Project is 14.4%.

【EIRR】14.4%

Cost: Initial costs, operation and maintenance costs, etc.

Benefit: Increased amounts of water supply, reduced costs (GWI and customers), and improved water quality and services

Project Life: 20 years

【FIRR】

Projected to go negative (as the price level is set low) and is therefore not calculated.

5. External Factors and Risk Control

（１）Preconditions: Nothing in particular.

（２）External Factors: Nothing in particular.

6. Lessons Learned from Past Projects

（１） Evaluation Results of Similar Projects

A lesson learned from the results of ex-post monitoring of the Montego Bay Water Supply (Great River) Project for Jamaica (evaluated in 2005) etc. is that to ensure stable supply of tap water it is essential for the project not only to increase the production volume of purified water through construction of new water supply facilities but also to include programs aimed at reducing non-revenue water.

（２） Application of Lessons to the Project

To ensure a stable supply of tap water, planning of the Project reflects the necessity not only of structural support, such as the improvement of water transmission and distribution facilities, installation of smart meters, and upgrading of the bill collection system, but also of non-structural support, including the creation of an action plan for reduction of non-revenue water and implementation of a campaign to raise residents' awareness.

7. Evaluation Results

The Project aligns with the development issues and development policies of Guyana, as well as the cooperation policies and analyses of Japan and JICA, and will contribute to increasing access to safe drinking water through improvement of water supply facilities and measures against non-revenue water. Since it is considered to contribute to SDG6 ("Ensure access to water and sanitation for all") and SDG11 ("Make cities and human settlements inclusive, safe, resilient, and sustainable"), there is a strong need to support implementation of the Project.

8. Plan for Future Evaluation

（１）Indicators to be Used

As indicated in Section 4.

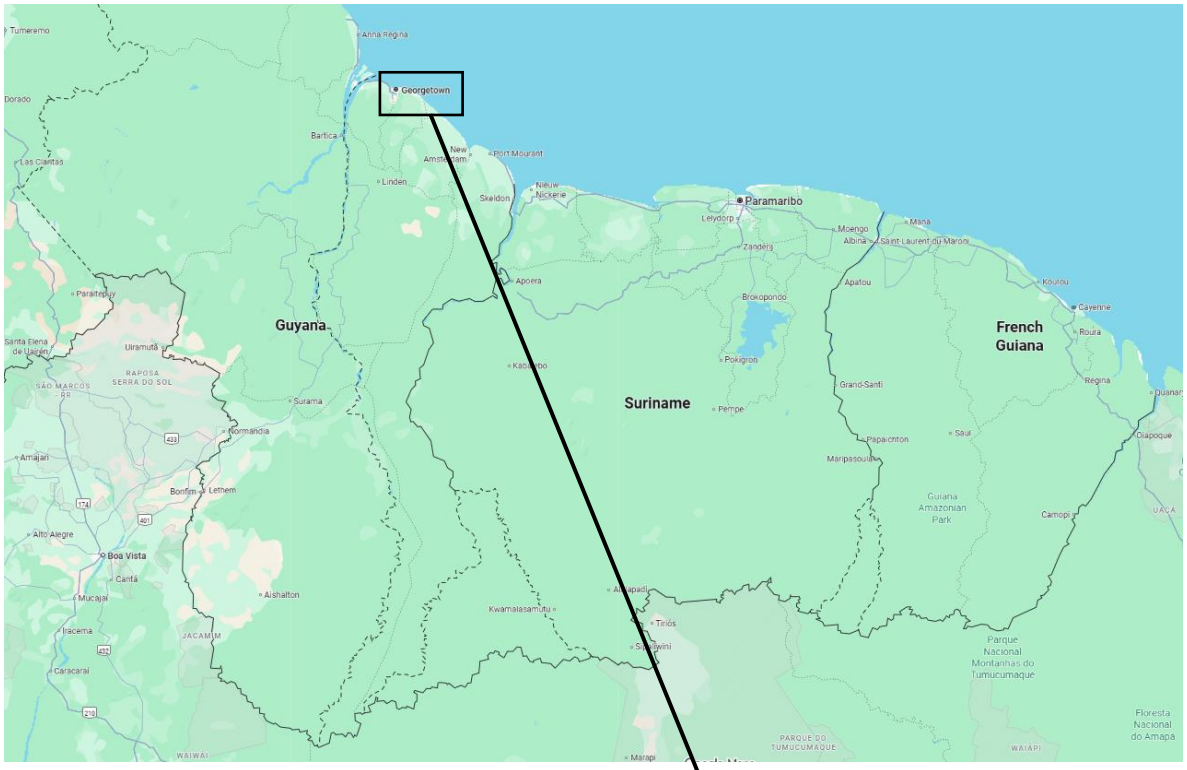
（２）Future Evaluation Schedule

Ex-post evaluation: To be decided after consultation with the IDB.

END

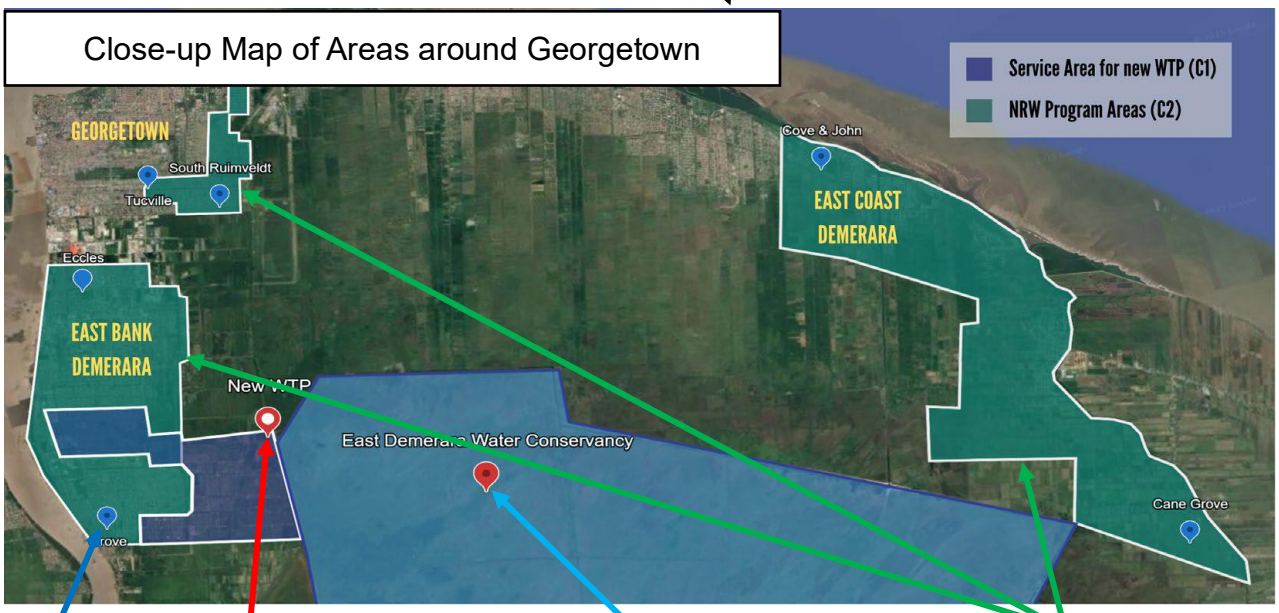
Appendix: Water Supply Improvement Project Map

Water Supply Improvement Project Map



Source: Google Maps (map data ©2025 Google)

Close-up Map of Areas around Georgetown



Service area of new water treatment plant

Construction site of new water treatment plant in Diamond district

Surface water source (East Demerara Water Conservancy)

Target areas for measures against non-revenue water (EBD/ECD/CLWS)

Source : Technical analysis document created by IDB