Project Administration Manual

Republic of Tajikistan: Dushanbe Water Supply and Sanitation Project
ABBREVIATIONS

ADB – Asian Development Bank
DMA – district metering areas
DVK – State Unitary Enterprise Dushanbevodokanal
EA – executing agency
IA – implementing agency
NRW – nonrevenue water
PIG – project implementation group
SCADA – supervisory control and data acquisition
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## I. MANAGEMENT RESPONSIBILITY FOR PREPARING PROJECT FINANCIAL STATEMENTS

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The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The executing and implementing agencies are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by executing and implementing agencies of their obligations and responsibilities for project implementation in accordance with ADB’s policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the grant agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the grant agreement, the provisions of the grant agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.
I. PROJECT DESCRIPTION

A. Rationale

1. Dushanbe, the capital city and economic center of Tajikistan, had an official population of 820,000 in 2016 but almost 1 million unofficially because of increased migration from rural areas and a significant number of returning migrants. Urban migration has added stress to the aging urban infrastructure and led to unplanned spatial expansion of the city, especially in the southeast, with low density patterns.\(^1\) This has caused environmental degradation, resulting in high coping costs, poor livability for citizens, and limited economic growth prospects.\(^2\)

2. Core problem. The WSS systems in Dushanbe, built under the former Soviet Union, have deteriorated because of age, lack of continued capital investment, and inadequate operation and maintenance (O&M). Most of the population of Dushanbe has access to piped water supply supplied by DVK, apart from new development areas in the southeast of the city. The water system is characterized by intermittent operations (4–8 hours per day), high NRW, and low water pressure and energy efficiency. Disrupted supply conditions create daily shocks that damage the network and potential sources of wastewater infiltration. The expanding urban areas are not connected to the water and sewerage systems. Lack of public understanding of water conservation, combined with low tariffs, has led to uncontrolled water consumption and wastage. Water consumption is high at 330 liters per capita per day.\(^3\) Poor water quality and frequent water contamination have resulted in high incidences of diarrhea in children aged 6–11 months and diarrhea-related deaths among children aged 1–5 years because of waterborne diseases. The incidence of ascariasis in Shohmansur district increased from 34 cases in 2015 to 53 in 2016.\(^4\)

3. Inadequate and inefficient water supply and sanitation. The WSS system is described below:

   (i) Infrastructure. Dushanbe is supplied by water from four water treatment plants (WTPs) in each quadrant of the city, with a total capacity of 520,000 cubic meters per day (m\(^3\)/d). The two in the north, Napornaya and Samotechnaya WTPs (capacity of 204,000 m\(^3\)/d), use surface water sourced from the River Varzob 16 kilometers (km) upstream from the city. The groundwater treatment plant in the southeast of the city (Kafernigan I) was commissioned in 1972 and the Southwest WTP was built in 1977. Both rely on groundwater abstraction. The centralized water supply system was built in 1932 and extended in the 1970s.

   (ii) Operation and maintenance. The water supply coverage in Dushanbe is 83%, but its service quality and reliability are poor. NRW is expected to be more than 60% because of high physical losses from the deteriorated infrastructure, high

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\(^2\) Oxfam. 2016. *Development Impact Bond for Ensuring Sustained Improvements to Water and Sanitation Services in Tajikistan.* Presentation by J. Parkinson. Zurich. 26 September. The average per capita economic impact of inadequate WSS service is about $35.00 per person/year, of which $25.00 per person/year is the coping cost for not improving water supply, about $3.00 per person/year is related to waterborne diseases attributable to poor water supply, $4.00 per person/year is attributable to poor sanitation, and $2.00 per person/year is related to contamination of water resources resulting from poor sanitation; and M. Fay, R.J. Block, and J. Ebinger. 2010. *Adapting to Climate Change in Eastern Europe and Central Asia.* Washington, DC: World Bank; and ADB. 2018. *Dushanbe Urban Water Supply and Sanitation Project.* Consultant’s report. Manila (TA9407-TAJ).


commercial losses, and poor operational management. High levels of NRW lead to low levels of business efficiency. About 187,000 customers are registered, of which only 76,500 are metered—limiting the cost recovery, user charges, and sustainability of operations.

(iii) Institutional management. DVK cannot cover its operating or capital costs because of low tariffs and high debt servicing of loans in foreign currency. Skilled technical staff are lacking in DVK for technical, procurement, financial management, and utility management because of high turnover. DVK needs adequate business planning and a competitive salary structure to become viable.

(iv) Finance. Investment is inadequate for capital and operational expenditure because of limited municipal revenue, with nominal tariffs, limited metering, low billing and collection efficiency, and high costs caused by operating inefficiencies. Energy cost is a significant part of operational expenditure. Until October 2016, tariffs were calculated per person based on an estimated household size of four persons, not volumetric consumption, leading to excessive water consumption and wastage. The 2017 tariff structure has been partially implemented, ranging from $0.07 for 1.0 m³ of water and wastewater for residential customers with water meters to $0.90 for 14.4 m³ of water and 11.4 m³ of wastewater for buildings with more than 12 floors.

4. Ongoing work. The World Bank is supporting investments in the north of the city, including improvement of the Samotechnaya WTP with a design capacity of 280,000 m³/d. The World Bank project will introduce rapid gravity filters and re-chlorination systems to improve water quality. It has supported the installation of bulk meters and 76,500 household meters. A tariff study is ongoing. ADB will continue coordination with the World Bank.

5. Sanitation. Dushanbe has one sewerage network and wastewater treatment plant (WWTP) built in the 1970s, which has undergone upgrades with the replacement of pumping units and rehabilitation of sedimentation tanks. The sewerage system is separate, without storm water entry, and operates entirely under gravity conditions. However, it has numerous overflows to water bodies and agricultural land because of a design flaw in the south sewage collector. DVK estimates that 70% of the population is connected to the sewerage system and the remainder uses septic tanks. Wastewater undergoes only basic physical treatment through primary

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5 ADB. 2010. The Issues and Challenges of Reducing Non-Revenue Water. Manila. NRW is the difference between the volume of water put into a water distribution system and the volume billed to customers. NRW has three components: (i) physical losses—leakage from all parts of the system and overflows at the utility's reservoirs; (ii) commercial losses—under-registration of customer meters, data handling errors, and theft of water in various forms; and (iii) unbilled authorized consumption—water used by the utility for operational purposes, water used for firefighting, and water provided free to certain consumer groups.

6 Decree of the Department for Anti-Monopoly Policy No. 52 dated 29 June 2016. Monthly tariffs (inclusive of 18% value-added tax) for different categories of customers effective 1 January 2017 are (i) $0.07 for 1 m³ of water and 1 m³ of wastewater for residential customers with water meters; (ii) $0.42 for 7.5 m³ of water and 3 m³ of wastewater for private houses in mahallas (neighborhood) connected to the city sewerage network; (iii) $0.72 for 10.8 m³ of water and 11 m³ of wastewater for buildings with 1–12 floors without water meters; (iv) $0.90 for 14.4 m³ of water and 11.4 m³ of wastewater for buildings with more than 12 floors without water meters; (v) $0.57 for 1 m³ of water and 1 m³ of wastewater for commercial organizations; and (vi) $0.21 for 1 m³ of water and 1 m³ of wastewater for budgetary organizations. The implementation of the tariff adjustments and universal metering are essential for the financial sustainability of DVK.

settlement. Although the WWTP has both physical and biological facilities, only the physical facilities are working.8

6. **Climate change vulnerability.** Tajikistan is the most climate-vulnerable country in Central Asia and the second least able to adapt (footnote 4). Its water security score fell from 2013 to 2016 (footnote 5), raising the need for efficient use of water. Climate change adaptation needs for the water supply sector include reducing surface water reliance by diversifying sources to improve water security, NRW reduction, and increased efficiency in O&M.

7. **Alignment with country strategy.** The project is aligned with the National Development Strategy 2030, which highlights strengthening institutional development toward efficient, transparent management and financial control by introducing modern information technology at all levels of government.9 It also complies with the legal framework for the water sector based on the Water Code (2000, amended 2012) and the draft Law on Drinking Water and Sanitation. The draft law, expected to be approved by Parliament in 2018, foresees budgetary and user tariffs as financing sources and proposes privileges and benefits for providers of drinking water and sanitation systems. The law provides guarantees on the safety and quality of water supply and the protection of water sources through the establishment of sanitary protection zones. The project advances the ADB Water Operational Plan, 2011–2020 and the concept of livable cities—an operational priority of the ADB Urban Operational Plan, 2012–2020 and Strategy 2030.10

8. **Value added by ADB assistance.** The following features provide ADB value addition:

   (i) **Project design and innovation.** The ADB intervention initiated innovative design features such as (a) pilot testing a systematic DMA approach for NRW management; (b) installing supervisory control and data acquisition (SCADA) for new network management practices, including active leak detection; and (c) installing flow meters for DMAs and smart meters for household service connections for optimized water consumption and improved billing and collection.

   (ii) **Institutional development.** ADB is introducing a holistic approach for ensuring the sustainability of the investments and operations through the business plan for DVK. The project will introduce international best practice through an incentive and accountability mechanism, with a performance benchmarking matrix. To ensure project ownership and the retention of skilled staff after the project, a cost-sharing human resources incentive model has been structured for the project implementation unit and key DVK personnel.

   (iii) **Operational efficiency and financial sustainability.** ADB is enabling integration of the customer database with the billing, collection, accounting, and reporting computerized systems. The provision of upgraded software and training will improve the billing and collection efficiency of DVK and reduce NRW, as unbilled consumption will decrease.

   (iv) **Behavior change and consumer orientation.** The project includes a behavior change and communication plan, aimed at demand-side management, to promote the new service level and its impact on health, efficient water usage, and awareness of the benefits of metering and billing among stakeholders. The project

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8 The government is discussing the rehabilitation of the WWTP with the World Bank.
will strengthen DVK communications and the media team’s capacity to manage customer relations, improve service standards, establish communication protocol, and expand the customer response units to bolster customer trust.

(v) Climate change resilience. The project will lead to enhanced climate change resilience through the development of river embankment and sewerage infrastructure which will reduce flood risk, protect groundwater well fields, and improve drainage. It will enable an overall decrease in the volume of water abstracted from groundwater aquifers, reducing vulnerability to climate change and increasing urban water resilience. It will also reduce energy demand, contributing to climate mitigation and the coping cost incurred by citizens.

9. Lessons learned. Based on experience from completed ADB projects, lessons adopted for the project include (i) aligning the project preparation and implementation schedule with the government’s approval procedures, (ii) minimizing the number of procurement packages, and (iii) using advance action for the detailed engineering design to ensure procurement readiness. The project design incorporates these lessons with a limited number of procurement packages and adequate project implementation support.

B. Impact and Outcome

10. The project is aligned with the following impacts: quality of life, health, urban resilience, and economic growth in Dushanbe improved and universal access to safe and affordable drinking water by 2030 improved. The project will have the following outcome: inclusive and sustainable access to safe and resilient WSS services in Dushanbe city improved.¹¹

C. Outputs

11. Output 1: Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded. This output will be delivered through (i) rehabilitating 17 wells, 22 pumps and second stage pump stations, water metering, chlorination, and other facilities at Kafernigan I, including the installation of a SCADA system; (ii) reducing NRW through the rehabilitation of 17.2 km of transmission main, the establishment of 18 DMAs: with the installation of 42 bulk meters and 5,220 smart meters, and the improvement of 57.5 km of distributional network in six DMAs; (iii) increasing the storage capacity to 4,500 m³; and (iv) rehabilitating the south sewage collector of 9.8 km.

12. Output 2: Sustainable business model and institutional capacity developed. This output will be delivered through prioritized institutional strengthening actions: (i) a business model for DVK developed that covers technical, operational, and institutional organizational restructuring; and human resources management; (ii) an accountability and incentive mechanism established, with a performance benchmarking matrix; (iii) a smart management system enhanced for operational efficiency; asset management; and seamless integration of the customer database, billing, collection, accounting, and reporting; (iv) an NRW management system operationalized, with the installation of SCADA for new network management practices for the 18 DMAs equipped with flow meters, smart meters for household service connections, active leak detection, and calibration of meters; (v) institutional, technical, and financial capacity improved; and (vi) customer care service standards developed and behavior change communication on water conservation and smart metering conducted.

¹¹ The design and monitoring framework is in Appendix 1.
II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Table 1: Project Readiness Activities

<table>
<thead>
<tr>
<th>Indicative Activities</th>
<th>2018</th>
<th>2019</th>
<th>Responsible</th>
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<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
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<td></td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
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<td>1. Advance contracting actions</td>
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<td>(i) Procurement of South Sewerage Collect</td>
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<td>• Publish IFB</td>
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<td>• Award Contract</td>
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<td>(ii) Recruitment of PMDSC</td>
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<td>• Advertise CSRN</td>
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<td>• Award contract</td>
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<td>(iii) Recruitment of Design Institute</td>
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<tr>
<td>• Advertise CSRN</td>
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<tr>
<td>• Award contract</td>
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<td>2. Retroactive financing actions</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>3. Establish project implementation arrangements</td>
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<td>4. Government budget inclusion</td>
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<td>5. Grant negotiations</td>
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<td>6. ADB Board approval</td>
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<td>7. Grant signing</td>
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<td>8. Declaration of grant effectiveness</td>
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<td>• Ratify the grant agreement</td>
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<td>• Issue the legal opinion</td>
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<td>• Grant effectiveness</td>
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ADB = Asian Development Bank, CSRN = consultant selection recruitment notice, EA = executing agency, IA = implementing agency, IFB = invitation for bids, MOF = Ministry of Finance, MOJ = Ministry of Justice, PMDSC = project Management, Design and Supervision Consultant.

Source: ADB.
### B. Overall Project Implementation Plan

1. A Gantt chart recording outputs with key implementation activities on quarterly basis that is updated annually and submitted to ADB with contract and disbursement projections for the following year.

#### Table 2: Implementation Schedule

<table>
<thead>
<tr>
<th>Indicative Activities</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
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<tbody>
<tr>
<td><strong>A. Design and Monitoring Framework</strong></td>
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<tr>
<td>Output 1 – Climate-resilient water and sanitation infrastructure rehabilitated and expanded</td>
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<td>1.1 Rehabilitation of eastern part (KAF-1) of well fields, transmission main, distribution network and house connections rehabilitated.</td>
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<td>Construction</td>
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<td>Commission DMAs</td>
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<td>1.2. Rehabilitation of Water transmission main, Pumping Stations, distribution network and house connection and construction of reservoir (Zebunisso)</td>
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<td>Construction</td>
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<td>Commission DMAs</td>
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<td>1.3 Rehabilitation and construction of South Sewerage Collector</td>
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<td>Commission Sewer Collector</td>
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<td><strong>Output 2 – Sustainable business model and institutional capacity developed</strong></td>
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<td>2.1 Business plan adopted</td>
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<td>2.2 Sustainable DMA management capacity of DVK enhanced</td>
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<td>2.3 Smart meter connections installed in 6 pilot DMAs</td>
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### Indicative Activities

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<th>2018</th>
<th>2019</th>
<th>2020</th>
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<th>2022</th>
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<tr>
<td>2.4 Institutional and capacity building programs for DVK completed</td>
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#### B. Management Activities

1. **Procurement Plan key activities to procure contract packages**

1.1 **Procurement of Civil Works**

- Detailed-design bid document preparation and approval
- Invitation to bid and bid period
- Issue invitation to bid to first civil works
- Bid evaluation and ADB/Govt approvals
- Contract negotiation and award
- Construction works
- Commission DMAs
- Operation and maintenance

1.1.2 **Recruitment of Consulting Services**

- Issue first request for proposal
- Recruitment
- Contract Negotiation and Award
- Mobilize design institute for design of south sewerage collector
- Mobilize PMDSC Services

#### Implementation of Plans and Strategy

- Environmental Management Plan
- Land Acquisition and Resettlement Plan
- Gender Action Plan
- Capacity development programs including communication implemented
- Annual/Mid Term Reviews
- Project Completion Report

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ADB = Asian Development Bank, DMA = district metering area, DMF = design and monitoring framework, DVK = State Unitary Enterprise Dushanbevodokanal, KAF-1 = Kafernigan-1.

Source: ADB.
### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations: Roles and Responsibilities

<table>
<thead>
<tr>
<th>Project Implementation Organizations</th>
<th>Management Roles and Responsibilities</th>
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<tbody>
<tr>
<td><strong>Executing agency</strong></td>
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<tr>
<td>Executive Body of State Power of Dushanbe City</td>
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</tbody>
</table>
|  | • Ensure overall oversight of the project  
|  | • Approve establishment of PIG including its structure  
|  | • Ensure adequate allocations of budget to implement LARP  
|  | • Approves annual programs  
|  | • Facilitates inter-agency coordination  
| **Implementing agency:** |  
| SUE Dushanbe Vodokanal |  
|  | • Strengthens PIG and provide overall guidance to PIG.  
|  | • Deputes or appoint competent staff in PIG.  
|  | • Ensure good coordination with Ministry of Finance and Local Authority of city of Dushanbe for adequate allocation of annual budget to project.  
|  | • Adopt and implement business plan  
|  | • Guide institutional strengthening and capacity development consultant  
|  | • Provide office space to PIG  
|  | • Provides full technical, financial and institutional support to PIG.  
|  | • Provides overall guidance to PIG  
|  | • Conducts, reviews, and approves detailed engineering designs and estimates  
|  | • Carries out periodic quality audit of the civil works contracts  
|  | • Guides, supports and monitors PIG in implementing subprojects  
| **Project Implementation Group** |  
| Head |  
| Engineer (2) |  
| Engineer (Procurement) (1) |  
| Financial Specialist (1) |  
| Gender and Social Safeguard Specialist (1) |  
| Environmental Management, Health and Safety Specialist (1) |  
| Monitoring, Evaluation and Reporting Specialist (1) |  
| Office Assistant (1) |  
|  | • Manage the day-to-day project implementation activities;  
|  | • Act as focal point for communication with ADB on project related matters;  
|  | • Liaises with different divisions of DVK on project implementation  
|  | • Procure works and goods and administer works and goods contracts;  
|  | • Recruit consultants and administer consulting services contracts;  
|  | • Makes payments for eligible activities performed under the scope of the project  
|  | • Monitor and promptly address complaints, and ensure their effective and adequate resolution;  
|  | • Establish adequate financial management system and submit timely withdrawal applications to ADB;  
|  | • Manage the advance account;  
|  | • Prepare periodic progress reports identifying issues and action plans, and ensure their timely submission to ADB;  
|  | • Submits quarterly reports to ADB in agreed format  
|  | • Implements and monitors Gender Action Plan, initial environmental examination (IEE), LARP, and EMP and prepares consolidated reports on these.  
|  | • Prepares progress reports, as outlined in PAM and submits to ADB.  

---
### ADB
- Conducts field review missions, special project administration mission (if required), midterm review mission and project completion review missions to assess project implementation progress and compliance of loan covenants.
- Reviews PIG’s submissions for procurement of goods, civil works and services and provides comments and no objection on the submissions.
- Checks statement of expenditure and disburses the grant funds as agreed in grant Agreement and PAM.

ADB = Asian Development Bank, DVK = State Unitary Enterprise Dushanbevodokanal, EMP = environmental management plan, IEE = initial environmental examination, PIG = project implementation group, LARP = land acquisition resettlement plan, PAM = project administration manual, SUE = state unitary enterprise.


### B. Key Persons Involved in Implementation

#### Executing Agency

**Executive Body of State Power of Dushanbe City**
- **Officer's Name:** Rustami Emomali
- **Position:** Chairman
- **Telephone:** +992 2 214514
- **Email address:** dushnabe80@yahoo.com
- **Office Address:** 90 Rudukari Avenue, Dushanbe

**State Unitary Enterprise Dushanbevodokanal**
- **Officer's Name:** Ubaydzoda Mizomurod Davlatmurod
- **Position:** Director
- **Telephone:** +992 37 222 2021
- **Email address:**
- **Office Address:** 14 Ayni street, Dushanbe

#### Project Implementation Group (PIG)
- **Officer's Name:**
- **Position:** Head
- **Telephone:** +992 37 222 2021
- **Email address:**
- **Office Address:** 14 A Ayni street, Dushanbe

#### Asian Development Bank

**Urban Development and Water Division (CWUW)**
- **Staff Name:** Yong Ye
- **Position:** Director, CWUW
- **Telephone No.:** +63 2 632 6346
- **Email address:** yyong@adb.org

**Mission Leader**
- **Ramola Naik Singru**
- **Senior Urban Development Specialist**
- **Telephone No.:** +63 2 632 4401
- **Email address:** rsingru@adb.org
C. **Project Organization Structure**

2. The flow chart to show the reporting lines essential internal structures of key organizations involved in implementation including project implementation and management unit.

![Project Organization Structure Diagram]

- **City of Dushanbe** (Executing Agency)
- **SUE Dushanbe Vodokanal** (Implementation Agency) Director
- **Project Implementation Group Head**
  - **Staff Position**
    - Engineer (2)
    - Engineer (Procurement) (1)
    - Financial Specialist (1)
    - Gender and Social Safeguard Specialist (1)
    - Environmental Management, Health and Safety Specialist (1)
    - Monitoring, Evaluation and Reporting Specialist (1)
    - Office assistant (1)
- **International Consultants (Grant Funding)**
  - Management, Design and Supervision
  - Institutional Development
  - Financial Audit
  - IT Support
  - Behaviour Change
- **DVK Key Staff**
  - Chief Engineer
  - Deputy Director Finance and Administration
  - Deputy Director for Marketing
  - Chief Accountant
- **Departments**
  - Operation and Maintenance
  - Finance and Administration
  - Information Technology
  - Communication and Media
  - Customer Relations
IV. COSTS AND FINANCING

3. The project is estimated to cost $45.8 million (Table 4). The cost includes physical and price contingencies, taxes and duties, and interest charges during implementation.

Table 4: Summary Cost Estimates ($ million)

<table>
<thead>
<tr>
<th>Item</th>
<th>Amounta</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>35.2</td>
</tr>
<tr>
<td>2.</td>
<td>4.8</td>
</tr>
<tr>
<td>Subtotal (A)b</td>
<td>40.0</td>
</tr>
<tr>
<td>B.</td>
<td>5.8</td>
</tr>
<tr>
<td>Total (A+B)</td>
<td>45.8</td>
</tr>
</tbody>
</table>

SUE DVK = State Unitary Enterprise Dushanbevodokanal.

a Includes taxes and duties of $4.4 million from government resources by exemption.
b In June 2018 prices.
c Physical contingencies computed at 10% for civil works, equipment, and design and supervision. Price contingencies computed at an average of 1.6% on foreign exchange costs and an average of 7% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate. $0.09 million of the counterpart contingencies includes land acquisition and resettlement costs. In addition, $0.01 million of the counterpart contingencies include contingencies for land acquisition and resettlement estimated in the resettlement plans including income restoration program.

Source: Asian Development Bank estimates.

4. The government has requested a grant of $41.18 million from ADB’s Special Funds resources (Asian Development Fund) to help finance the project. ADB will finance the expenditures in relation to civil works and equipment, consulting services, and incremental administration. The government will provide counterpart funding of $4.62 million equivalent to cover taxes and duties, land acquisition and resettlement costs, part of the incremental administrative expenses including the staff salaries for the project implementation group (PIG) and provision of office space, and other miscellaneous costs. The summary financing plan is in Table 5.

Table 5: Financing Plan

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($ million)</th>
<th>Share of Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian Development Bank (Asian Development Fund)</td>
<td>41.18</td>
<td>90</td>
</tr>
<tr>
<td>Government of Tajikistan</td>
<td>4.62</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>45.80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Asian Development Bank estimates.

5. Climate adaptation is estimated to cost $2.08 million. ADB will finance 100% of adaptation costs.

A. Cost Estimates Preparation and Revisions

6. The cost estimates have been prepared in June 2018 by the Transaction and Advisory Technical Assistant (TRTA) consultant based on market prices for consulting services and civil works. The cost estimates will be updated upon finalization of the detailed engineering design of 3 civil works packages in December 2019.
B. Key Assumptions

7. The following key assumptions underpin the cost estimates and financing plan:

(i) Exchange rate: TJS 9.0996 = $1.00 (as of 22 June 2018).

(ii) Price contingencies based on expected cumulative inflation over the implementation period and exchange rates used are as follows:

Table 6: Escalation Rates for Price Contingency Calculation

<table>
<thead>
<tr>
<th>Item</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual rates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign rate of price inflation</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Domestic rate of price inflation</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Compounded rates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign rate of price inflation</td>
<td>0.8%</td>
<td>2.3%</td>
<td>3.8%</td>
<td>5.5%</td>
<td>7.2%</td>
<td>8.9%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Domestic rate of price inflation</td>
<td>3.5%</td>
<td>10.7%</td>
<td>18.5%</td>
<td>26.8%</td>
<td>35.7%</td>
<td>45.2%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Exchange rates used</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant purchasing power parity</td>
<td>9.3</td>
<td>9.9</td>
<td>10.4</td>
<td>10.9</td>
<td>11.5</td>
<td>12.1</td>
<td>10.7</td>
</tr>
</tbody>
</table>

### C. Detailed Cost Estimates by Expenditure Category

**Table 7: Detailed Cost Estimates by Expenditure Category**

<table>
<thead>
<tr>
<th>Item</th>
<th>(TJS million)</th>
<th>($ million)</th>
<th>% of Total Base Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Foreign Exchange</td>
<td>Local Currency</td>
<td>Total Cost</td>
</tr>
<tr>
<td><strong>I. Investment costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Civil works and equipment</td>
<td>143.26</td>
<td>178.43</td>
<td>321.69</td>
</tr>
<tr>
<td>B. Consulting Services</td>
<td>21.68</td>
<td>14.13</td>
<td>35.81</td>
</tr>
<tr>
<td>C. Incremental Project Administration</td>
<td>0.00</td>
<td>5.75</td>
<td>5.75</td>
</tr>
<tr>
<td>D. Resettlement</td>
<td>0.00</td>
<td>0.77</td>
<td>0.77</td>
</tr>
<tr>
<td><strong>Total BASELINE COSTS</strong></td>
<td>164.94</td>
<td>199.08</td>
<td>364.03</td>
</tr>
<tr>
<td><strong>II. Contingencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Physical</td>
<td>14.66</td>
<td>18.04</td>
<td>32.69</td>
</tr>
<tr>
<td>B. Price</td>
<td>8.96</td>
<td>11.10</td>
<td>20.06</td>
</tr>
<tr>
<td><strong>Total contingencies (II)</strong></td>
<td>23.62</td>
<td>29.13</td>
<td>52.75</td>
</tr>
<tr>
<td><strong>III. Financial charges during implementation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest during construction</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total Project Cost (I+II+III)</strong></td>
<td>188.56</td>
<td>228.22</td>
<td>416.78</td>
</tr>
</tbody>
</table>

Note: Numbers may not sum precisely because of rounding. Source: Asian Development Bank.
D. Allocation and Withdrawal of Grant Proceeds

Table 8: Allocation and Withdrawal of Grant Proceeds

<table>
<thead>
<tr>
<th>Number</th>
<th>Item*</th>
<th>Total Amount Allocated for ADB Financing ($)</th>
<th>Basis for Withdrawal from the Loan Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil works** and equipment</td>
<td>32,170,000</td>
<td>100.00% of total expenditure claimed***</td>
</tr>
<tr>
<td>2</td>
<td>Consulting services</td>
<td>3,340,000</td>
<td>100.00% of total expenditure claimed***</td>
</tr>
<tr>
<td>3</td>
<td>Incremental administration****</td>
<td>390,000</td>
<td>100.00% of total expenditure claimed***</td>
</tr>
<tr>
<td>4</td>
<td>Unallocated</td>
<td>5,280,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>41,180,000</td>
<td></td>
</tr>
</tbody>
</table>

* Each item of expenditure is subject to the condition for withdrawal described in paragraph 6(a) of Schedule 2 in the Grant Agreement.
** Works is subject to the condition for withdrawal described in paragraph 6(b) of Schedule 2 in the Grant Agreement (in addition to the condition for withdrawal described in paragraph 6(a) of Schedule 2).
*** Exclusive of taxes and duties for all items imposed within the territory of the Recipient.
**** ADB and Government will be providing parallel funding for different expense items in this category.

## Table 9: Detailed Cost Estimates by Financier

<table>
<thead>
<tr>
<th>Item</th>
<th>ADB Grant</th>
<th>Government</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>% of Cost</td>
<td>Amount</td>
</tr>
<tr>
<td></td>
<td>Category</td>
<td>Category</td>
<td>Category</td>
</tr>
<tr>
<td>I. Investment costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Civil Works and Equipment</td>
<td>32.17</td>
<td>91.00</td>
<td>3.18</td>
</tr>
<tr>
<td>B. Consulting Services</td>
<td>3.34</td>
<td>85.00</td>
<td>0.59</td>
</tr>
<tr>
<td>C. Incremental Project Admin</td>
<td>0.39</td>
<td>62.15</td>
<td>0.24</td>
</tr>
<tr>
<td>D. Resettlement</td>
<td>0.00</td>
<td>-</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>Total BASELINE COSTS (I)</strong></td>
<td>35.91</td>
<td>89.76</td>
<td>4.10</td>
</tr>
<tr>
<td>II. Contingencies</td>
<td>5.27</td>
<td>90.96</td>
<td>0.52</td>
</tr>
<tr>
<td>III. Financial Charges</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Project Cost (I+II+III)</strong></td>
<td>41.18</td>
<td>89.91</td>
<td>4.62</td>
</tr>
</tbody>
</table>

Note: Numbers may not sum precisely because of rounding.
ADB = Asian Development Bank
Source: Asian Development Bank estimates.
### F. Detailed Cost Estimates by Outputs, ($ million)

#### Table 10: Detailed Cost Estimates by Outputs

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost</th>
<th>Output 1</th>
<th></th>
<th>Output 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>% of Cost Category</td>
<td>Amount</td>
<td>% of Cost Category</td>
<td></td>
</tr>
<tr>
<td>I. Investment Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Civil Works and Equipment</td>
<td>35.35</td>
<td>35.10</td>
<td>99.29</td>
<td>0.25</td>
<td>0.71</td>
</tr>
<tr>
<td>B. Consulting Services</td>
<td>3.94</td>
<td>-</td>
<td>-</td>
<td>3.94</td>
<td>100.00</td>
</tr>
<tr>
<td>C. Incremental Project Administration</td>
<td>0.63</td>
<td>-</td>
<td>-</td>
<td>0.63</td>
<td>100.00</td>
</tr>
<tr>
<td>D. Resettlement</td>
<td>0.09</td>
<td>0.09</td>
<td>100.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total BASELINE COSTS (I)</strong></td>
<td>40.00</td>
<td>35.19</td>
<td>87.96</td>
<td>4.82</td>
<td>12.04</td>
</tr>
<tr>
<td>II. Contingencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>3.59</td>
<td>3.53</td>
<td>98.28</td>
<td>0.06</td>
<td>1.72</td>
</tr>
<tr>
<td>Price</td>
<td>2.20</td>
<td>2.20</td>
<td>100.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Contingencies (II)</strong></td>
<td>5.80</td>
<td>5.74</td>
<td>98.93</td>
<td>0.06</td>
<td>1.07</td>
</tr>
<tr>
<td><strong>Total Project Cost (I+II)</strong></td>
<td><strong>45.80</strong></td>
<td><strong>40.92</strong></td>
<td><strong>89.35</strong></td>
<td><strong>4.88</strong></td>
<td><strong>10.65</strong></td>
</tr>
</tbody>
</table>

Note: Number may not sum precisely due to rounding

Source: Asian Development Bank estimates.
### Table 11: Detailed Cost Estimates by Year

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Investment costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Civil works</td>
<td>35.35</td>
<td>0.09</td>
<td>2.22</td>
<td>8.11</td>
<td>11.58</td>
<td>10.89</td>
<td>2.46</td>
</tr>
<tr>
<td>B. Equipment and machinery</td>
<td>3.94</td>
<td>0.06</td>
<td>1.13</td>
<td>1.36</td>
<td>0.79</td>
<td>0.54</td>
<td>0.05</td>
</tr>
<tr>
<td>C. Detailed design and supervision</td>
<td>0.63</td>
<td>0.00</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
</tr>
<tr>
<td>D. Project implementation support</td>
<td>0.09</td>
<td>0.04</td>
<td>0.04</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total BASELINE COSTS (I)</strong></td>
<td>40.00</td>
<td>0.19</td>
<td>3.53</td>
<td>9.59</td>
<td>12.50</td>
<td>11.56</td>
<td>2.63</td>
</tr>
<tr>
<td>II. Contingencies</td>
<td>5.80</td>
<td>0.02</td>
<td>0.41</td>
<td>1.35</td>
<td>1.87</td>
<td>1.75</td>
<td>0.40</td>
</tr>
<tr>
<td>III. Financial charges during implementation</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Project Cost (I+II+III)</strong></td>
<td>45.80</td>
<td>0.21</td>
<td>3.94</td>
<td>10.94</td>
<td>14.36</td>
<td>13.32</td>
<td>3.03</td>
</tr>
<tr>
<td>% of Project Cost</td>
<td>100.00</td>
<td>0.47</td>
<td>8.59</td>
<td>23.89</td>
<td>31.36</td>
<td>29.07</td>
<td>6.62</td>
</tr>
</tbody>
</table>

Note: Numbers may not sum precisely because of rounding.
H. Contract and Disbursement S-Curve

8. Graph show quarterly contract awards and disbursement projections over the life of the project.

<table>
<thead>
<tr>
<th>Year</th>
<th>QTR 1</th>
<th>QTR 2</th>
<th>QTR 3</th>
<th>QTR4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>0.290</td>
<td>2.110</td>
<td>12.618</td>
<td>0.096</td>
<td>15.114</td>
</tr>
<tr>
<td>2020</td>
<td>0.883</td>
<td>15.266</td>
<td>9.288</td>
<td>0.259</td>
<td>25.696</td>
</tr>
<tr>
<td>2021</td>
<td>0.180</td>
<td>0.190</td>
<td>0.000</td>
<td>0.000</td>
<td>0.370</td>
</tr>
<tr>
<td>2022</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2023</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2024</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<td>0.000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>41.180</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Year</th>
<th>QTR 1</th>
<th>QTR 2</th>
<th>QTR 3</th>
<th>QTR4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>4.118</td>
<td>0.000</td>
<td>0.000</td>
<td>0.048</td>
<td>4.166</td>
</tr>
<tr>
<td>2020</td>
<td>0.855</td>
<td>0.877</td>
<td>0.876</td>
<td>0.864</td>
<td>3.472</td>
</tr>
<tr>
<td>2021</td>
<td>2.454</td>
<td>2.454</td>
<td>2.454</td>
<td>2.454</td>
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</tr>
<tr>
<td>2022</td>
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<td>2.311</td>
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<tr>
<td>2023</td>
<td>2.941</td>
<td>2.941</td>
<td>2.941</td>
<td>2.941</td>
<td>11.764</td>
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<td>2024</td>
<td>0.681</td>
<td>0.681</td>
<td>1.358</td>
<td>0.000</td>
<td>2.720</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>41.180</td>
</tr>
</tbody>
</table>


Table 13. Indicative Contract and Disbursement S-Curve
I. Fund Flow Diagram

TJS = Tajikistan somoni, SUE DVK = State Unitary Enterprise Dushanbevodokanal.

Note: The spot rate used in converting the USD advance fund from ADB. This involves conservation of USD to local currency (TAJ somoni) by the bank who will hold the advance account (USD). Any gains or losses in foreign exchange fluctuations will be borne by the MOF.
V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

9. The FMA of DVK was conducted in June 2018 in accordance with ADB’s Guidelines for the Financial Management and Analysis of Projects and the Financial Due Diligence: A Methodology Note. The FMA considered the capacity of DVK including funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. The key findings of the assessment are as follows: (i) the World Bank, in its Implementation Status and Results Report dated 13 June 2018 for its ongoing project, has rated the fiduciary risk of DVK to be substantial;12 (ii) the auditors of DVK identified a material uncertainty on DVK's ability to continue as a going concern; and (iii) while the staff of DVK lack sufficient knowledge and understanding of ADB’s grant disbursement guidelines and procedures, they are experienced in financial management and operate under a highly capable and committed leadership. Taking into consideration financial management risks and proposed mitigating actions the IA has sufficient capacity to utilize Advance Fund and SOE procedure. Proposed herein in paragraphs 24-26, the Advance Fund limit and SOE procedures ceiling for individual transaction limit are appropriate. It is, therefore, concluded based on the FMA, that the overall financial management risk of DVK for the project is Substantial. The substantial financial management risk will be mitigated through a financial management action plan that includes (i) transfer of the project grant funds to DVK’s balance sheet as equity to achieve positive equity in the first year of grant effectiveness and sustainable Debt/Equity ratio of 0.55 by 202413; (ii) establishing target DSCR and Debtors’ day ratios as financial covenants for DVK14 (iii) provision of appropriate training and consultants’ support to DVK; and (iv) provision of upgraded software to enable seamless integration of its accounting system with the customer database and increase revenues by reducing unbilled authorized consumption, which is a significant part of current high NRW. Additional findings and agreements to mitigate the financial management risk identified are as follows:

- **Experiences with Donors.** The DVK is experienced in implementing projects financed by international donors, including World Bank and the Islamic Development Bank, which employ grant disbursement procedures largely similar to those used by ADB. Training will be provided to familiarize staff with ADB procedures.

- **Implementation Arrangement.** DVK has set up PIG to take up the project management office’s (PMO) intended role with full staff and adequate capacity satisfactory to ADB. Provision of appropriate training and consultants’ support will be ensured to DVK.

- **Staffing.** The PIG will have a chief accountant, a cashier, and a financial management specialist. The accountant and financial management specialist will be trained on ADB policies and procedures in disbursement, financial reporting and auditing. Existing staff of DVK will be assigned to work at PIG to ensure adequate capacity in financial management. DVK will encourage staff involvement by augmenting the staff salaries within the allowable ceilings of existing regulations under legislation of the Republic of Tajikistan.

- **Planning and Budgeting.** DVK has adequate financial management system and policies in place but will require some adjustments to incorporate appropriate project-specific accounting, budgeting, auditing, and reporting. The PIG will prepare the project’s annual

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13 Project grant amount to be injected as equity assumed to be equivalent to TJS400 million at current exchange rate of $1=TJS9.42. 
14 DSCR measures DVK’s ability to be financially sustainable and pay off its debt obligations while Debtors’ days ratio measures collection efficiency.
budgets including required social tax for its staff for DVK's approval. Once approved, it will be submitted to the Ministry of Finance (MOF) for final approval. During project implementation, the actual expenditures will be compared with planned budgeted expenditures on a monthly and quarterly basis, and analysis of variations will be prepared. Significant variations in budgeted expenditure will require the approval of the project Director prior to actual expenditures.

- **Safeguard Over Assets.** DVK have procedures that assure sufficient controls are undertaken over project assets, and safeguards are in place to protect assets from fraud, waste, and abuse. An annual physical inventory of all stocks and materials is carried out, and the fixed assets inventory is required to be updated every two years.

- **Internal Audit.** DVK has a department for conducting internal audit and project operations. Additional capacity development for internal audit functions is included in the project to address the identified weaknesses in the existing department.

- **Project Financial Reporting and External Audit.** DVK engaged a World Bank-approved audit firm for the fiscal year (FY) 2016 and FY2017 audits. The quality of project audit submissions, including audited annual project financial statements (APFS), audit report (AR), and management letter, is satisfactory. However, the audit firm pointed out that DVK has issues with (i) international donors’ financed projects created assets and liabilities, as well as related incomes and expenses being not completely and properly accounted for and reported in these financial statements; and (ii) material uncertainty that may cast significant doubt on the DVK’s ability to continue as a going concern. This raises concerns about: (i) DVK’s financial reporting link with donor financial reporting systems; and (ii) DVK’s ability to absorb future potential losses and cover O&M expenses. The DVK has the 1C accounting software installed which it used for World Bank projects reporting. The PMO is experienced in implementing World Bank financed projects. Its staff members are familiar with donors’ requirements, including financial reporting and auditing. Provision of upgraded software will enable seamless integration of its accounting system with the customer database. PIG financial management staff will be provided with access to ADB grant financial reporting system which will mitigate auditor’s concern on reporting link for this Project.

10. The risk assessment matrix prepared based on interviews and discussions conducted with the DVK under the ADB-funded transaction technical assistance is summarized in Table 14. The corresponding financial management action plan is in Table 15.
<table>
<thead>
<tr>
<th>Risk Category/Description</th>
<th>Risk Assessment</th>
<th>Risk Description</th>
<th>Remarks/ Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementing Entity</td>
<td>Low</td>
<td>Failure to report suspected fraud, waste or misuse of project resources or assets.</td>
<td>No prior incidence in the WB projects currently being implemented by DVK of suspected fraud, waste or misuse of project resources. Monitoring of inventories and assets is held regularly and no report on irregularities has been received nor has required any action from DVK management. Regular physical verification of assets and inventories of the project before the project starts and monitoring of suspected fraud, waste or misuse of project resource or assets should be made more transparent and systematized.</td>
</tr>
<tr>
<td>Funds Flow</td>
<td>Moderate</td>
<td>Misunderstanding and misinterpretation by DVK’s Project Implementation Group and DVK Finance and Accounting Department staff of ADB’s guidelines on disbursement and withdrawals of the grant proceeds.</td>
<td>DVK has been implementing World Bank financed loan- and grant-funded projects and is familiar with their disbursement and withdrawal procedures which are similar to those used by ADB. However, the DVK Project Implementation Group and the staff of the Finance and Accounting Department need to liaise regularly with ADB and the project consultants to ensure adherence to the relevant ADB guidelines. Furthermore, the Project Implementation Group and the DVK staff of the Finance and Accounting Department and PMO will require training on ADB procedures on grant disbursements and use of advance account as required in the fund flow arrangements for the project.</td>
</tr>
<tr>
<td>Staffing</td>
<td>Moderate</td>
<td>Adequacy of staff at the Project Implementation Group and the Finance and Accounting Department and their lack of training on ADB disbursement and procedures.</td>
<td>The Project Implementation Group for the project is being established from the current DVK staff who are well aware of WB disbursements and other financial management procedures and additional staff may be hired as needed. Training of DVK’s staff on ADB’s procurement and disbursement procedures should be undertaken at project start-up and intermittently thereafter.</td>
</tr>
<tr>
<td>Risk Category/Description</td>
<td>Risk Assessment</td>
<td>Risk Description</td>
<td>Remarks/ Mitigation Measures</td>
</tr>
<tr>
<td>---------------------------</td>
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</tr>
<tr>
<td>Accounting</td>
<td>Moderate</td>
<td>Failure to comply with international standards of accounting policies and procedures in accordance with the financial reporting requirements of the Government and ADB.</td>
<td>Engage project consultants who can help the DVK upgrade their current accounting system IC version 8.3 and develop into one that incorporates project-specific financial reporting requirements.</td>
</tr>
<tr>
<td>Budgeting</td>
<td>Moderate</td>
<td>Budgets do not adequately reflect the project’s physical and financial targets.</td>
<td>DVK staff needs project consultants’ support and training in preparing the project budget and targets for the approval of DVK’s management.</td>
</tr>
<tr>
<td>Payments</td>
<td>Moderate</td>
<td>Delays or mistakes in the processing of payments for direct disbursements by ADB and from the advance account.</td>
<td>The staff of the Project Implementation Group and the Finance and Accounting Department needs training at project start-up and will also require a manual on ADB disbursement guidelines and policies from the project consultants.</td>
</tr>
<tr>
<td>Internal Audit</td>
<td>High</td>
<td>Limited capacity of DVK’s Internal Audit Department.</td>
<td>DVK’s Internal Audit Department needs to be oriented on the project’s fund flow arrangement and ADB guidelines on disbursements and financial reporting. Policies and procedures should be set to facilitate regular and timely audits. Training of DVK’s audit staff to ensure accurate record-keeping and fully reconciled accounts should be undertaken by the project consultants. Low salary scale has deterred the hiring or appointment of qualified audit staff.</td>
</tr>
<tr>
<td>External Audit</td>
<td>Moderate</td>
<td>Delayed external audits and submission of audited financial statements to ADB.</td>
<td>DVK will engage an external auditor from WB list of approved auditors for the annual audits of DVK’s as well as the project’s financial statements. Project consultants will also support the preparation of financial statements using an upgraded and automated version of DVK’s accounting system.</td>
</tr>
<tr>
<td>Reporting and Monitoring</td>
<td>Moderate</td>
<td>Delayed or poorly prepared financial reports that do not conform to the requirements of the Government and ADB.</td>
<td>Project consultants to help monitor compliance with loan covenants, including the preparation and submission of audited project and entity accounts. The electronic accounting system of DVK which uses IC version 8.3</td>
</tr>
<tr>
<td>Risk Category/Description</td>
<td>Risk Assessment</td>
<td>Risk Description</td>
<td>Remarks/ Mitigation Measures</td>
</tr>
<tr>
<td>---------------------------</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td>Information Systems</td>
<td>Moderate</td>
<td>Management information system do not appropriately safeguard confidentiality.</td>
<td>Provide regular backups to the accounting system and strengthen security measures to ensure confidentiality and integrity of data in the system.</td>
</tr>
<tr>
<td>Foreign Exchange Risk</td>
<td>High</td>
<td>Losses due to foreign exchange fluctuations, particularly with the use of Special Drawing Rights, negatively impact the financial position of DVK.</td>
<td>Negotiations will be undertaken with the MOF on the management of foreign exchange risk. It is proposed that the forex rate be fixed at the time of the withdrawal date and any losses or gains should accrue to the MOF.</td>
</tr>
<tr>
<td>Overall (combined) Risk</td>
<td>Substantial</td>
<td>The World Bank, in its Implementation Status and Results Report dated 13 June 2018 for its ongoing project, has rated the fiduciary risk of DVK to be substantial; the auditors of DVK identified a material uncertainty on DVK’s ability to continue as a going concern; and while the staff of DVK lack sufficient knowledge and understanding of ADB’s grant disbursement guidelines and procedures, they are experienced in financial management and operate under a highly capable and committed leadership. SUE DVK has been implementing World Bank-funded projects and has therefore gained experience on withdrawal procedures using an imprest account. It has also amassed a thorough understanding of foreign exchange risk and how foreign exchange losses can negatively impact financial performance. DVK’s plan for effective project financial management is to assign qualified staff such as engineers, a senior accountant and associate financial specialist and other positions needed to ensure timely and accurate processing of withdrawal applications, disbursements and other project transactions, budget preparation, procurement, and other related activities in project implementation. To encourage long term project involvement, the current salary scale will be augmented within allowable ceilings of existing regulations under the labor code. A manual of procedures, policies and guidelines for the project operations (both financial and physical development aspects) is to be prepared. An appropriate training program and consulting services will be provided under the grant to ensure prompt delivery of reports and project completion. Upgrade of the 1C accounting system will be pursued to facilitate external auditor’s preparation of project financial statements, documentation necessary to support withdrawal applications, and generation of project reports.</td>
<td></td>
</tr>
<tr>
<td>Risk Description</td>
<td>Risk</td>
<td>Action</td>
<td>Period</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td><strong>Implementing Entity</strong></td>
<td>Low</td>
<td>Regular physical verification of assets and inventories of the project before the project starts and monitoring of suspected fraud, waste or misuse of project resource or assets should be made more transparent and systematized.</td>
<td>At start and during project implementation</td>
</tr>
<tr>
<td><strong>Funds Flow</strong></td>
<td>Moderate</td>
<td>DVK has been implementing World Bank financed loan- and grant-funded projects and is familiar with their disbursement and withdrawal procedures which are similar to those used by ADB. The DVK Project Implementation Group and the staff of the Finance and Accounting Department need to liaise regularly with ADB and the project consultants to ensure adherence to the relevant ADB guidelines. Furthermore, the Project Implementation Group and the DVK staff of the Finance and Accounting Department and PMO will require training on ADB procedures on grant disbursements and use of advance account as required in the fund flow arrangements for the project.</td>
<td>Before grant effectiveness date</td>
</tr>
<tr>
<td><strong>Staffing</strong></td>
<td>Moderate</td>
<td>Training of DVK's staff on ADB's procurement and disbursement procedures should be undertaken at project start-up and intermittently thereafter. Engage Project Consultants who can help the DVK develop and make operational a project accounting system in a manner consistent with the ADB's policies and procedures for loan disbursements and financial reporting. The current accounting system is 1C 8.3 version that needs to be upgraded and integrated with project financial and technical reporting.</td>
<td>By grant effectiveness date</td>
</tr>
<tr>
<td><strong>Accounting</strong></td>
<td>Moderate</td>
<td>Engage project consultants who can help the DVK upgrade their current accounting system IC version 8.3 and develop into one that incorporates project-specific financial reporting requirements.</td>
<td>Not later than 3 months after Grant effectiveness date.</td>
</tr>
<tr>
<td>Risk Description</td>
<td>Risk</td>
<td>Action</td>
<td>Period</td>
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<tr>
<td>------------------</td>
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<tr>
<td><strong>Budgeting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeting</td>
<td>Low</td>
<td>DVK staff needs project consultants’ support and training in preparing the project budget and targets for the approval of DVK’s management. Provide training/capacity development to internal audit of DVK on funds flow arrangement and ADB guidelines on project disbursements, accounting and reporting. Standard should be set for regular audit of project implementation and on time recommendations.</td>
<td>During implementation</td>
</tr>
<tr>
<td>Compliance with procedural requirements for direct disbursements, statement of expenditures and maintenance of advance account.</td>
<td>Moderate</td>
<td>The staff of the Project Implementation Group and the Finance and Accounting Department needs training at project start-up and will also require a manual on ADB disbursement guidelines and policies from the project consultants.</td>
<td>By grant effectiveness date</td>
</tr>
<tr>
<td><strong>Internal Audit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited capacity of DVK’s Internal Audit Department.</td>
<td>High</td>
<td>DVK’s Internal Audit Department needs to be oriented on the project’s fund flow arrangement and ADB guidelines on disbursements and financial reporting. Policies and procedures should be set to facilitate regular and timely audits.</td>
<td>By grant effectiveness date</td>
</tr>
<tr>
<td><strong>External Audit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timely audit process and availability of audited financial statements.</td>
<td>Low</td>
<td>Hire an external auditor to audit project financial statements.</td>
<td>Not later than 3 months after grant effectiveness date</td>
</tr>
<tr>
<td>To facilitate both internal and external audits, financial reports will be prepared through an automated accounting system with the support of project consultants.</td>
<td></td>
<td></td>
<td>During implementation</td>
</tr>
<tr>
<td><strong>Reporting and Monitoring</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Delayed or poorly prepared financial reports that do not conform to the requirements of the Government and ADB.</td>
<td>Moderate</td>
<td>Project consultants to help monitor compliance with loan covenants, including the preparation and submission of audited project and entity accounts. The electronic accounting system of DVK which uses IC version 8.3 should be modified to integrate both the enterprise financial accounting and the project financial accounting. Preparation of reports through a computerized financial</td>
<td>During implementation</td>
</tr>
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<td></td>
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<td>Not later than 12 months after grant effectiveness date</td>
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### Risk Description

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<th>Action</th>
<th>Period</th>
<th>Responsible Agency</th>
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<tr>
<td>Information systems</td>
<td>Moderate</td>
<td>Provide regular backups to the accounting system and strengthen security measures to ensure confidentiality and integrity of data in the system.</td>
<td>Not later than 12 months after grant effectiveness date</td>
<td>DVK/PIG</td>
</tr>
<tr>
<td>Foreign Exchange Risk</td>
<td>High</td>
<td>Negotiations will be undertaken with the MOF on the management of foreign exchange risk. It is proposed that the forex rate be fixed at the time of the withdrawal date and any losses or gains should accrue to the MOF.</td>
<td>At grant negotiations</td>
<td>MOF/DVK/ADB</td>
</tr>
</tbody>
</table>

### B. Disbursement

#### 1. Disbursement Arrangements for ADB

11. The grant proceeds will be disbursed in accordance with ADB’s Loan Disbursement Handbook (2017, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available. Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

12. **Advance fund procedure.** Separate advance account will be established and maintained by IA at a commercial bank acceptable to ADB to facilitate disbursements. The currency of the advance account is the US dollar. The advance account is to be used exclusively for ADB’s share of eligible expenditures. The IA who administers the advance account is accountable and responsible for proper use of advances to the advance account. IA will establish the account in its name and shall be accountable and responsible for proper use of advances to the advance account.

13. The total outstanding advance to the advance account should not exceed the estimate of ADB’s share of expenditures to be paid through the advance account for the forthcoming 6 months. The ADB’s project team responsible for project administration, will review the reasonableness of the 6-months estimates provided by IA. The PIG under IA administering the advance account may request for initial and additional advances to the advance account based on an Estimate of Expenditure Sheet setting out the estimated expenditures to be financed through the account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by the IA in accordance with ADB’s Loan Disbursement Handbook (2017, as amended from time to time) when liquidating or replenishing the advance account.

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15 The handbook is available electronically from the ADB website (http://www.adb.org/documents/loan-disbursement-handbook).


17 Estimate of Expenditure sheet is available in Appendix 8A of ADB’s Loan Disbursement Handbook (2017, as amended from time to time).
14. **Statement of expenditure procedure.** The SOE procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the advance account. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB’s disbursement and review missions, upon ADB’s request for submission of supporting documents on a sampling basis, and for independent audit. Any individual payments to be reimbursed or liquidated under SOE will not exceed the equivalent of $200,000. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB.

15. Before the submission of the first withdrawal application (WA), the MOF should submit to ADB sufficient evidence of the authority of the persons who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per WA is stipulated in the *Loan Disbursement Handbook* (2017, as amended from time to time). Individual payments below such amount should be paid (i) by the implementing agency and subsequently claimed to ADB through reimbursement, or (ii) through the advance fund procedure if such procedure is proposed for the project, unless otherwise accepted by ADB. The IA should ensure sufficient category and contract balances before requesting disbursements.

16. **Condition for Withdrawal from Grant Account.** No withdrawals shall be made from the Grant Account (in accordance with paragraph 6, Schedule 2 of the Grant Agreement),
   
   a. for any item of expenditure, until (i) the PIG has been established and is fully equipped with professional skilled staff including a PIG director, municipal engineers (water supply and drainage), environmental specialist, social development and gender specialist, finance specialist, project management and procurement and contracts management, and (ii) an appropriate legislation, decree and/or resolution has been duly enacted to provide effective and enforceable exemption from taxes, duties and similar mandatory payments that accrue on Project expenditures in the territory of the Recipient (including, without limitation, for Services); and

   b. for Works, until the Dushanbe City Administration has allocated adequate funds and resources to SEADC and/or DVK for the implementation of the RP.

17. **Direct Payment Procedure.** The PIG will submit direct payment WA to ADB if the PIG could not pay the invoice from the advance account due to specific reasons outside the control of the PIG.

2. **Disbursement Arrangements for Counterpart Fund**

18. The PIG will be responsible for (i) preparing disbursement projections, and (ii) requesting budgetary allocations for counterpart funds and other necessary approvals from the MOF and ADB, (iii) collecting and maintaining supporting documents, and (iv) preparing and sending withdrawal application for eligible incremental project administration costs for reimbursements. Government financing covers taxes and duties exemptions, land acquisition and resettlement cost, a part of incremental administrative expenses, and other miscellaneous costs and will be carried out in accordance with regulations of the Republic of Tajikistan relevant to co-financing

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18 SOE forms are available in Appendix 7B and 7D of ADB’s *Loan Disbursement Handbook* (2017, as amended from time to time).
arrangements made with multilateral financing organizations. DVK will open and maintain a separate account for government counterpart funds. For the government-financed local taxes and duties under the project, the government will exempt, or provide funds to pay, such local taxes and duties in accordance with the appropriate government laws and regulations.

C. Accounting

19. The IA will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project for accrual-based accounting following the equivalent national accounting standards. The IA will prepare consolidated project financial statements in accordance with the government’s accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing and Public Disclosure

20. The IA will cause the detailed (consolidated) project financial statements to be audited in accordance with (International Standards on Auditing) {equivalent national standards adopted by (please specify)} {the {International Standards for Supreme Audit Institutions} {Supreme Audit Institution’s Audit Regulations}, by an independent auditor acceptable to ADB. The audited project financial statements together with the auditor’s opinion will be presented in the English language to ADB within 6 months from the end of the fiscal year by the (executing agency).

21. The audited entity financial statements, together with the auditor’s report and management letter, will be submitted in the English language to ADB within 1 month after their approval by the relevant authority.

22. The audit report for the project financial statements will include a management letter and auditor’s opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the {loan} {grant} were used only for the purpose(s) of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements (where applicable).

23. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

24. The government, EA and IA have been made aware of ADB’s approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements. ADB reserves the right to require a change in the auditor (in a manner

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19 ADB’s approach and procedures regarding delayed submission of audited project financial statements:

(i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.

(ii) When audited project financial statements are not received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB’s actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months.
consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project’s financial accounts to confirm that the share of ADB’s financing is used in accordance with ADB’s policies and procedures.

25. Public disclosure of the audited project financial statements, including the auditor’s opinion on the project financial statements, will be guided by ADB’s Public Communications Policy 2011. After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB’s confirmation of their acceptability by posting them on ADB’s website. The management letter, additional auditor’s opinions, and audited entity financial statements will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

26. All advance contracting and retroactive financing will be undertaken in conformity with ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time). The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The recipient and IA have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

27. Advance contracting. Advance contracting will be applicable for: (i) recruitment of design institute (national) for the detailed engineering design of south sewerage collectors, (ii) recruitment of Project Management, Design, and Supervision Consultant (PMDSC), (iii) procurement of south sewerage collector package, and (iv) procurement of office refurbishment package. The steps associated with these contracts to be concluded in advance would be: (i) preparation of tender documents to procure south sewerage collector; (ii) publish expression of interest for recruitment of design institute to design south collector and PMDSC; (iii) publish Invitation of Bid to procure south sewerage collector civil works and sign contract; and (iv) request for quotation for refurbishment of PIG office.

28. Retroactive financing. Retroactive financing will apply to up to a maximum of 20% of the grant amount for consulting services, and the establishment and operation of PIG incurred before effectiveness of the grant agreement but not earlier than 12 months before signing of the grant agreement.

B. Procurement of Goods, Works, and Consulting Services

29. Procurement (including consulting services) to be financed by ADB will follow ADB’s Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017, as amended from time to time).

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(iii) When audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.


21 This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. Public Communications Policy. Paragraph 97(iv) and/or 97(v).
30. Project Procurement Risk Assessment has been undertaken. The overall procurement risk assessment is “Substantial”. Based on the Procurement Risk Assessment and Management (P-RAMP) recommended in Project Procurement Risk Assessment report, an 18-month procurement plan is prepared. Procurement method for each package, review requirement, bidding procedure to be used, estimated time for advertising, document to be used are described in the Procurement plan.

31. Open competitive bidding advertised internationally will be used for the procurement of all works contracts and procurement of operation and maintenance equipment as indicated in the Procurement Plan. Request for Quotation form international suppliers will be used for procurement of SMART Management System. RFQ from national suppliers will be used for office-related equipment.

32. An estimated 452 person-months (106 international and 362 national) of consulting services are required to (i) facilitate project management, design and implementation, and (ii) strengthen the institutional and operational capacity of the IA. Two international consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality–cost ratio of 90:10. Two consulting firms will be engaged using single source selection method and 3 individual consultants will be engaged using individual consultant selection method.

33. ADB’s latest version of standard bidding documents for good and works and consulting services applied for Procurement Regulations for ADB’s Borrower (2017, as amended from time to time) will be used for procurement of goods, works and consulting services depending on the nature of different packages.

34. All contracts will be subject to ADB’s prior review except the package Goods-02-SIMS, Goods-04-OFEQ2 and Goods-05-OFEQ3.

C. Procurement Plan

35. The First Procurement Plan is indicated as below. The procurement plan will be updated by the PIG for approval by ADB, at least annually, and more frequently if necessary, and should cover the next 18 months of procurement activity. A delay in grant effectiveness, other start-up delays, and delays during implementation will require an unscheduled procurement plan update. ADB will review each updated procurement plan prior to its publication. The estimated package cost in the procurement plan is inclusive of taxes and duties.

### Procurement Plan

<table>
<thead>
<tr>
<th>Basic Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Name:</strong> Dushanbe Water Supply and Sanitation Project</td>
</tr>
<tr>
<td><strong>Project Number:</strong> 50347-002</td>
</tr>
<tr>
<td><strong>Country:</strong> Republic of Tajikistan</td>
</tr>
<tr>
<td><strong>Project Procurement Classification:</strong> B</td>
</tr>
<tr>
<td><strong>Procurement Risk:</strong> High</td>
</tr>
<tr>
<td><strong>Project Financing Amount:</strong> $45,800,000</td>
</tr>
<tr>
<td><strong>ADB Financing:</strong> $41,180,000</td>
</tr>
<tr>
<td><strong>Cofinancing (ADB Administered):</strong> None</td>
</tr>
<tr>
<td><strong>Non-ADB Financing:</strong> $4,620,000</td>
</tr>
<tr>
<td><strong>Approval Number:</strong></td>
</tr>
<tr>
<td><strong>Executing Agency:</strong> State Executive Authority of Dushanbe City</td>
</tr>
<tr>
<td><strong>Implementing Agency:</strong> State Unitary Enterprise Dushanbe Vodokanal (DVK)</td>
</tr>
<tr>
<td><strong>Project Closing Date:</strong> 30 September 2024</td>
</tr>
<tr>
<td><strong>Date of First Procurement Plan:</strong> 6 August 2018</td>
</tr>
<tr>
<td><strong>Date of this Procurement Plan:</strong> 24 August 2018</td>
</tr>
</tbody>
</table>
A. Methods, Review and Procurement Plan

Except as the Asian Development Bank (ADB) may otherwise agree, the following methods shall apply to procurement of goods, works, non-consulting services, and consulting services.

### Procurement of Goods, Works, and Non-consulting Services

<table>
<thead>
<tr>
<th>Method</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Competitive Bidding (OCB) with international advertising for Works</td>
<td>National contractors lack capacity on implementing the packages (CW-01-CW-03)</td>
</tr>
<tr>
<td>Open Competitive Bidding (OCB) with international advertising for Goods</td>
<td>There are no sufficient capable suppliers for Package.</td>
</tr>
<tr>
<td>Request for Quotations from international suppliers</td>
<td>The value of contract (Goods-02-IMS) is too small to attract bidders, however national suppliers lacks this capacity.</td>
</tr>
<tr>
<td>Request for Quotations from national suppliers</td>
<td>The value of three contracts for office equipment (Goods-02-OFEQ1-3) are too small to attract bidders and the equipment are available locally</td>
</tr>
</tbody>
</table>

### Consulting Services

<table>
<thead>
<tr>
<th>Method</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Competitive Bidding with international advertising using Quality and Cost Based Selection for Consulting Services (QCBS)</td>
<td>For Project Management and design of WS and Sewage Works, and institutional Strengthening, capacity development, there are no sufficient local firms who have such kind of expertise.</td>
</tr>
<tr>
<td>Direct Contracting for Consulting Firms (DC)</td>
<td>For Design of South Sewage Collector, given the amount of this package is small, a firm has been engaged thorough open competitive bidding (advertising local) and has done part of the Design for South Sewage Collector, so it is more economy and efficient to engage them through DC. A firm for financial audit for DVK has been engaged under the implemented project financed by WB, following WB consulting services recruitment procedure. Their work will overlap with the ADB financial audit requirement hence, it is more efficient to engage the firm through DC for Financial Audit of DVK and Project Financial Statements.</td>
</tr>
<tr>
<td>Individual Consultants Selection (Competitive)</td>
<td>Support from international experts are required to successfully implement the project. The number of contracts is small, no team work is required</td>
</tr>
</tbody>
</table>

B. List of Active Procurement Packages (Contracts)

The following table lists goods, works, non-consulting services, and consulting services contracts for which the procurement activity is either on going or expected to commence within the procurement plan duration.

### Goods, Works, and Non-consulting services

<table>
<thead>
<tr>
<th>Package Number¹</th>
<th>General Description</th>
<th>Estimated Value</th>
<th>Procurement Method</th>
<th>Review</th>
<th>Bidding Procedure</th>
<th>Advertisement Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW-01</td>
<td>Rehabilitation of eastern part KAF-1 well fields, transmission main, establishment of 18 DMAs with installation of bulk meters, with distribution network in 6 DMAs with smart meters and house connections</td>
<td>$16,700,200</td>
<td>OCB</td>
<td>Prior</td>
<td>1S1E</td>
<td>Q3/2019</td>
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</tr>
</tbody>
</table>
|       | No. of Contracts: 1  
|       | Prequalification of Bidders: No  
|       | Domestic Preference Applicable: No  
|       | Advance Contracting: Yes  
|       | Bidding Document: Large Works  
|       | Advertising Type: International |
| CW-02 | Rehabilitation of existing water supply system to Zebunniso and Karotegen | $10,067,000 | OCB | Prior | 1S1E | Q3/2019 |
|       | No. of Contracts: 1  
|       | Prequalification of Bidders: No  
|       | Domestic Preference Applicable: No  
|       | Advance Contracting: Yes  
|       | Bidding Document: Large Works  
|       | Advertising Type: International |
| e-GP: N |
| CW-03 | Rehabilitation of south sewage collector | $10,986,000 | OCB | Prior | 1S1E | Q4/2018 |
|       | No. of Contracts: 1  
|       | Prequalification of Bidders: No  
|       | Domestic Preference Applicable: No  
|       | Advance Contracting: Yes  
|       | Bidding Document: Large Works  
|       | Advertising Type: International |
| e-GP: N |
| Goods-01-OMEQ | Supply of operation and maintenance equipment | $250,000 | OCB | Prior | 1S1E | Q3/2019 | No. of Contracts: 1 |
| | | | | | | | Prequalification of Bidders: No |
| | | | | | | | Domestic Preference Applicable: No |
| | | | | | | | Advance Contracting: No |
| | | | | | | | Bidding Document: Goods |
| | | | | | | | Advertising Type: International |
| | | | | | | | e-GP: N |

| Goods-02-OFEQ1 | Office refurbishment | $40,000 | RFQ | Prior Review (sampling) | Q3/2018 | No. of Contracts: 1 |
| | | | | | | | Advance Contracting: Yes |
| | | | | | | | At least 3 quotations from national suppliers. |
| | | | | | | | Document: Shopping |
| | | | | | | | e-GP: N |
| Goods-03-OFEQ2 | Office furniture | $10,000 | RFQ | Post Review (sampling) | Q4/2018 | No. of Contracts: 1  
Advance Contracting: Yes  
At least 3 quotations from national suppliers.  
Prior review on first package only.  
Document: Shopping e-GP: N |
|---|---|---|---|---|---|---|
| Goods-04-OFEQ3 | Office equipment | $60,000 | RFQ | Post Review (sampling) | Q4/2018 | No. of Contracts: 1  
Advance Contracting: Yes  
At least 3 quotations from national suppliers.  
Prior review on first package only.  
Document: Shopping e-GP: N |
| Goods-05-SIMS | SMART Management System for seamless integration of the systems for customer database, for billing, collection, accounting and reporting | $95,000 | RFQ | Post Review (sampling) | Q4/2019 | No. of Contracts: 1  
Advance Contracting: Yes  
At least 3 quotations from international suppliers  
Document: Shopping e-GP: N |

### Consulting Services

<table>
<thead>
<tr>
<th>Package Number</th>
<th>General Description</th>
<th>Estimated Value</th>
<th>Selection Method</th>
<th>Review</th>
<th>Type of Proposal</th>
<th>Advertisement Date</th>
<th>Comments</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Package Number</th>
<th>General Description</th>
<th>Estimated Value</th>
<th>Selection Method</th>
<th>Review</th>
<th>Type of Proposal</th>
<th>Advertisement Date</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Cons</td>
<td>Project Description</td>
<td>Amount</td>
<td>Type</td>
<td>Contracting</td>
<td>Date</td>
<td>Type</td>
<td>Assignment</td>
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<tr>
<td>Cons-01</td>
<td>Project Management Design and Supervision Consultant</td>
<td>$2,500,000</td>
<td>QCBS</td>
<td>Prior</td>
<td>Full</td>
<td>Q3/2018</td>
<td>Firm</td>
</tr>
<tr>
<td>Cons-02</td>
<td>Institutional Strengthening and Capacity Development Consultant</td>
<td>$1,050,000</td>
<td>QCBS</td>
<td>Prior</td>
<td>Full</td>
<td>Q1/2019</td>
<td>Firm</td>
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<tr>
<td>Cons-05</td>
<td>Procurement Consultant</td>
<td>$40,000.00</td>
<td>Competitive</td>
<td>Prior</td>
<td>Bio data</td>
<td>Q3/2018</td>
<td>Type: Individual Assignment: International Expertise: Procurement and Consulting Recruitment Advance Contracting: No Advertising Type: ADB CSRN</td>
</tr>
<tr>
<td>Cons-06</td>
<td>Due Diligence Expert</td>
<td>$30,000.00</td>
<td>Competitive</td>
<td>Prior</td>
<td>Bio data</td>
<td>Q4/2018</td>
<td>Type: Individual Assignment: International Expertise: TBD Advance Contracting: No Advertising Type: ADB CSRN</td>
</tr>
<tr>
<td>Cons-07</td>
<td>Behavior Change and Communications Consultants</td>
<td>$30,000.00</td>
<td>Competitive</td>
<td>Prior</td>
<td>Bio data</td>
<td>Q4/2018</td>
<td>Type: Individual Assignment: International Expertise: Behavior Change and Communications Advance Contracting: No Advertising Type: ADB CSRN</td>
</tr>
</tbody>
</table>
C. List of Indicative Packages (Contracts) Required under the Project
The following table lists goods, works, non-consulting services, and consulting services contracts for which the procurement activity is expected to commence beyond the procurement plan duration and over the life of the project (i.e. those expected beyond the current procurement plan duration).

<table>
<thead>
<tr>
<th>Goods, Works, and Non-consulting services</th>
<th>Package Number</th>
<th>General Description</th>
<th>Estimated Value</th>
<th>Procurement Method</th>
<th>Review</th>
<th>Bidding Procedure</th>
<th>Comments</th>
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<tr>
<th>Consulting Services</th>
<th>Package Number</th>
<th>General Description</th>
<th>Estimated Value</th>
<th>Selection Method</th>
<th>Review</th>
<th>Type of Proposal</th>
<th>Comments</th>
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</table>

D. List of Awarded and Completed Contracts
The following table lists the awarded contracts and completed contracts for goods, works, non-consulting services, and consulting services.

<table>
<thead>
<tr>
<th>Goods, Works, and Non-consulting services</th>
<th>Package Number</th>
<th>General Description</th>
<th>Contract Value</th>
<th>Date of ADB Approval of Contract Award</th>
<th>Date of Completion</th>
<th>Comments</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Consulting Services</th>
<th>Package Number</th>
<th>General Description</th>
<th>Contract Value</th>
<th>Date of ADB Approval of Contract Award</th>
<th>Date of Completion</th>
<th>Comments</th>
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</tbody>
</table>

E. Non-ADB Financing
The following table lists goods, works, and consulting services contracts over the life of the project, financed by Non-ADB sources.

<table>
<thead>
<tr>
<th>Goods, Works, and Non-consulting services</th>
<th>General Description</th>
<th>Estimated Value (cumulative)</th>
<th>Estimated Number of Contracts</th>
<th>Procurement Method</th>
<th>Comments</th>
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<tbody>
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<tr>
<th>Consulting Services</th>
<th>General Description</th>
<th>Estimated Value (cumulative)</th>
<th>Estimated Number of Contracts</th>
<th>Selection Method</th>
<th>Comments</th>
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</tbody>
</table>
D. Consultant’s Terms of Reference

36. The terms of reference for consultant contracts attached as Appendixes 1 to 4.

VII. SAFEGUARDS

37. Environment (Category B). An initial environmental examination (IEE), including an environmental management plan (EMP), has been prepared. Public consultations were conducted and involved affected people from nearby houses and other project stakeholders. Project impacts during construction are expected to be site-specific and temporary and related to the construction activities. Expected impacts include, among others, noise, dust and exhaust emissions from equipment and construction vehicles; impacts on the river and surface water, waste management, occupational health and safety, community health and safety, construction traffic. During operation phase, potential impacts are related to limited local capacity to maintain functionality of the components, with expected positive impacts due to the rehabilitation works. Adequate mitigation measures are included as part of the assessment, and will be implemented through, the EMP and Site-specific Environmental Management Plans (SEMP).

38. PIG will be responsible for EMP and SEMP implementation, will ensure that EMP will be adequately included in bidding documents and in construction contracts. PIG will be responsible to ensure that each contractor prepares and submits SEMP to PMDSC, which will contain the method statement for construction. SEMPs shall be reviewed and endorsed by the PMDSC and submitted for PIG’s approval. PIG will approve all SEMPs before start of any construction works.

39. Monitoring of environmental quality and the implementation of mitigation measures will be performed by the PIG in line with EMP, with support from PMDSC as required, with sufficient TORs and staff-time for this task. The monitoring results will be included in the project quarterly progress reports and semi-annual environmental reports to be submitted to ADB. The cost for EMP implementation will be financed under the grant, specifically the costs of mitigation measures will be included in the construction contracts.

40. PIU will be responsible for establishing and implementing the Grievance Redress Mechanism (GRM) in accordance with the IEE and EMP. PIG will promptly inform ADB of the occurrence of any risks or impacts, with detailed description of the event and proposed corrective action plan if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the project that were not considered in the initial environmental examination. PIG will report any actual or potential breach of compliance with the measures and requirements set forth in the IEE and EMP promptly after becoming aware of the breach.

41. Involuntary resettlement (category B). EA and IA will ensure that land acquisition will be carried out in accordance with ADB’s SPS (2009) requirements, and applicable laws and regulations of Tajikistan that have been referred to in the land acquisition and resettlement framework and LARP. The draft LARP indicated that the project will affect approximately 44 households with a total of 288 household members. Out of 44 affected households, 17 households with 98 members will experience severe impact on their livelihood and no household was found to belong to vulnerable groups.

42. A land acquisition and resettlement framework is prepared in accordance with ADB’s SPS and relevant national legislation to guide the IA to prepare and update land acquisition and resettlement plans (LARPs) in case any unanticipated impacts are identified during detailed
design and project implementation. A LARP is prepared to mitigate all the associated impacts and losses with an entitlement matrix.

43. EA and IA will be responsible to pay compensation to the affected households due to land acquisition and the temporary loss of income as well as the temporary effects, according to the process outlined in the LARP. The civil works could only be commenced after compensation is fully paid in any given construction section or any part thereof. The draft LARP indicated that a total area of 952 sqm commercial land will be acquired and a total of 14 businesses and business renters will be affected by the project. The total costs for LARP implementation will be approximately USD 85,000 includes base costs, allowances, management fee, income restoration program and 20% for contingencies. EA and IA will ensure that the LARP will be updated, finalized during detailed design, implemented and monitored to ensure that no project affected persons will suffer by unattended impacts associated with land acquisition.

44. **Indigenous peoples (category C).** There are no indigenous peoples in the project areas, as defined in ADB’s SPS for operational purposes. Accordingly, no indigenous peoples planning documents will be required.

45. Stakeholder consultations were conducted through formal and informal focus group discussions, wide consultations with communities, targeted workshop consultations, individual consultations with displaced persons during the census and the Detailed Measurement Survey from April 2018 to June 2018. A project information booklet was distributed to the communities. A grievance redress mechanism is in place to assist affected persons in resolving grievances and complaints. The land acquisition and resettlement framework, LARP, IEE, and EMP were approved by the IA and publicly disclosed on the DVK and ADB website in July 2018.

46. EA, IA, are PIG responsible and the resources required to implement the actions identified in the relevant safeguard plans. These plans include (i) the environmental management plan and (ii) the land acquisition and resettlement plan and/or resettlement framework. Refer to the respective safeguard action plans for the detailed implementation guidelines. See Section IX.B for safeguards monitoring.

47. **Prohibited investment activities.** Pursuant to ADB’s Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).

**VIII. GENDER AND SOCIAL DIMENSIONS**

48. The project is categorized as "effective gender mainstreaming" (EGM), and thus, a gender action plan (GAP) has been prepared. TA gender analysis indicated that in general women in the project areas are more disadvantaged than their male counterparts in many aspects to benefit from the project. Strategies suggested in the GAP to ensure women participate and benefit equally from project interventions include: (i) women’s participation in decision making (during project design consultations, during construction supervision, resettlement process and project implementation); (ii) increased women’s economic empowerment (through employment opportunities and resettlement plan that ensure equal compensations to male and female headed households affected); (iii) enhancing women’s participation in technical training and access to information opportunities; (iv) improved gender mainstreaming capacity of EA and IA in project

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22 IEE, LARF, and LARP (accessible from the list of Linked Documents in Appendix 2 of the RRP).
planning and management and (e) inclusion of sex-disaggregated data in the project performance management system, monitoring and evaluation indicators and regular project reporting.
<table>
<thead>
<tr>
<th>Gender Action Plan</th>
<th>Activity</th>
<th>Performance Targets/ Indicators</th>
<th>Responsibility</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome. Inclusive and sustainable access to safe and resilient water supply and sanitation services in Dushanbe City improved</strong></td>
<td>0.1 Ensure that water quality meets international standards for safe drinking water</td>
<td>0.1.1 Monitoring report on the quality of water from new water supply connections, show that it meets international standards for safe water</td>
<td>PIG M&amp;E specialist in coordination with Dushanbe city health officers</td>
<td>Q4 2024; Q4 2025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1.2 At least 50% reduction in waterborne diseases in Shohmansur District (disaggregated by sex and age) (2016 baseline: 53 cases)</td>
<td></td>
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<tr>
<td></td>
<td>0.2 Conduct a public satisfaction survey on the cost, availability, and quality of water</td>
<td>0.2.1 At least 80% of women and 80% of men surveyed expressed satisfaction over the availability and quality of water supply (2018 baseline: 28%)</td>
<td>PIG M&amp;E specialist and Gender and Social safeguards specialist</td>
<td>Q3 2024 – Q2 2025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2.2 At least 70% of women and men find the cost of good water supply reasonable</td>
<td></td>
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<tr>
<td></td>
<td>0.3 Establish and support a behavior change campaign on water conservation and smart metering with communities, through schools and health facilities</td>
<td>0.3.1 Water conservation awareness program developed and implemented in schools and health facilities in Shohmansur and Rudaki districts</td>
<td>PIG Gender and Social safeguards specialist, in coordination with Dushanbe city health officers, and Local Hukumats</td>
<td>Q1 2020 – Q4 2021</td>
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<td></td>
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<td>0.3.2 Awareness raised on water conservation and smart metering in the user communities in Shohmansur and Rudaki districts.</td>
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<tr>
<td><strong>Output 1. Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded</strong></td>
<td>1.1 Conduct a baseline and end-line time-use survey to assess women’s and girls’ time spent on household chores.</td>
<td>1.1.1 Report analyzing the results of baseline and end line surveys on reduction on women’s time poverty</td>
<td>PIG Gender and Social safeguards Specialist</td>
<td>Baseline: Q2 2019-Q2 2020 End line: Q1-Q4 2024</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1.2 At least 25% reduction in time spent for household water collection (2018 baseline: 2.5 days per week for water collection) (endnote 1)</td>
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<td>1.2 Ensure participation of women and girls in stakeholder consultations in all steps of project implementation (e.g. construction activities, land acquisition and resettlement activities, etc.)</td>
<td>1.2.1 At least 2 consultations conducted per year of project implementation (2018 Baseline: 9 consultations with communities conducted; with)</td>
<td>DVK’s and Local Hukumats’ Gender focal points</td>
<td>Q1 2019 – Q3 2024</td>
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<td>1.2.2 At least 50% women’s participation in consultations (2018 baseline: 459 participants in consultations, 42% of whom are women)</td>
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<td></td>
<td>1.3 Ensure that women benefit from new water supply connections and rehabilitated sewerage connections</td>
<td>1.3.1 2000 households in Shohmansur District have new water supply connections</td>
<td>PIG; Contractors with advice from the Gender and Social safeguards specialist</td>
<td>2020–2024</td>
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<td>1.3.2 At least 34% of the projected 352,000 beneficiaries (or 120,000) are women with access to and benefit from rehabilitated sewerage connections</td>
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<td></td>
<td>1.4 Provide livelihood opportunities for women in Shohmansur and Rudaki districts during construction of sub-projects.</td>
<td>1.4.1 At least 50% of temporary stalls set up to sell snacks and small eats for construction workers are owned / managed by women entrepreneurs</td>
<td>PIG; Contractors with advice from the Gender and Social safeguards specialist</td>
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</tr>
</tbody>
</table>
### Output 2: Sustainable business model and institutional capacity developed

<table>
<thead>
<tr>
<th>2.1 Develop and strengthen gender-inclusive strategies and programs of SUE DVK</th>
<th>2.1.1 Organizational gender diagnostic of SUE DVK conducted and measures to improve gender balance are identified</th>
<th>PIG Gender and Social safeguards specialist in coordination with SUE DVK HR and gender focal point</th>
<th>Q2 2019 – Q4 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.2 Discussions on how to increase the proportion of women in technical and management positions revisited and translated into concrete action plan Gender mainstreaming training program developed and conducted to all staff</td>
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<tr>
<td>2.1.3</td>
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<tr>
<td>2.2 Ensure participation of women staff in trainings</td>
<td>2.1.4 70% of trained DVK staff of which at least 30% are women report enhanced skills and knowledge on project planning, operations and maintenance systems (e.g., SCADA, GIS, and billing and collection systems) are women (2018 baseline: 0)</td>
<td>PIG</td>
<td>Q3 2023 – Q4 2024</td>
</tr>
</tbody>
</table>

### Project Implementation

<table>
<thead>
<tr>
<th>a. Recruit women staff in PIG</th>
<th>a.1 Gender and Social Safeguards specialist recruited in PIG</th>
<th>PIG Project Manager</th>
<th>Q1 – Q3 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.2 At least 2 of PIG staff are women (total PIG staff = 9)</td>
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<tr>
<td>b. Ensure collection of sex-disaggregated data</td>
<td>b.1 Project monitoring and information system includes gender indicators and regularly populated with sex-disaggregated data</td>
<td>PIG M&amp;E Specialist, in coordination with PIG Gender and Social safeguards specialist</td>
<td>Q3 2018 – Q4 2024</td>
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<tr>
<td>b.2 Project monitoring reports include progress in implementing the GAP</td>
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</table>

GAP = gender action plan, GIS = geographical information systems, HR = human resources, M&E = monitoring and evaluation, PIG = project implementation group, Q = quarter, SCADA = supervisory control and data acquisition, SUE DVK = State Unitary Enterprise Dushanbe Vodokanal.

a. Taken from the results of the socio-economic survey conducted in Dushanbe as part of project preparation, in March 2018, and documented in the “Poverty, Social and Gender Analysis Report” of the Dushanbe Water Supply and Sanitation Project.

b. This includes awareness raising campaign on the need for regular handwashing, keeping water containers clean and covered, monitoring pipe leaks to ensure non-contamination of water supply, etc. The campaign could include some focus on improving women’s and girls’ leadership and participation in community issues. Method of delivering the awareness campaign messages may be through media, posters, campaign events, etc.
IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

A. Project Design and Monitoring Framework

DESIGN AND MONITORING FRAMEWORK

<table>
<thead>
<tr>
<th>Impacts the Project is Aligned with</th>
<th>Universal access to safe and affordable drinking water improved (2030 Agenda for Sustainable Development Goal 6)</th>
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<tbody>
<tr>
<td>Quality of life, health, urban resilience, and economic growth in Dushanbe improved (Tajikistan National Development Strategy, 2030)</td>
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<tr>
<td>Quality of life, health, urban resilience, and economic growth in Dushanbe improved (Tajikistan National Development Strategy, 2030)</td>
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<table>
<thead>
<tr>
<th>Results Chain</th>
<th>Performance Indicators with Targets and Baselines</th>
<th>Data Sources and Reporting</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome</strong></td>
<td>By 2025</td>
<td></td>
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</tr>
<tr>
<td>Inclusive and sustainable access to safe and resilient water supply and sanitation services in Dushanbe city improved</td>
<td>a. 38,000 people have 24/7 piped water supply (2018 baseline: 0 people)</td>
<td>a–d. Executing agency project completion report, implementing agency annual report, annual customer satisfaction surveys</td>
<td>Extreme weather events and climate change adversely affect the infrastructure and service delivery.</td>
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<td></td>
<td>b. Public satisfaction with quality of water supply in project area increased to 80% (2018 baseline: 28% of women and 34% of men)</td>
<td>c. Socioeconomic survey sample of 105 households, social safeguards monitoring reports</td>
<td>Devaluation of local currency affects DVK’s ability to manage operation and maintenance of the existing and new facilities sustainably.</td>
</tr>
<tr>
<td></td>
<td>c. Nonrevenue water reduced to 15% in the 6 DMAs in Shohmansur district (2018 baseline: 64%)</td>
<td>e. Implementing agency annual reports, Committee for Environmental Protection reports</td>
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<td>d. Billing and tariff collection for water supply is above 90% in 6 DMAs (2018 baseline: billing 40% and tariff collection 45%)</td>
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<td></td>
<td>e. 50% reduction in incidence of ascariasis in Shohmansur district (2018 baseline: 53 children)</td>
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<td><strong>Outputs</strong></td>
<td>By 2024</td>
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<td></td>
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<tr>
<td>1. Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded</td>
<td>1a. 17 groundwater wells rehabilitated with capacity of 64,800 m³/day, meeting national water quality standards (2018 baseline: 0)</td>
<td>1a–h. Quarterly project progress reports from implementing agency, executing agency project completion report, gender action plan progress reports</td>
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<td>1b. 2 pumping stations rehabilitated (2018 baseline: 0)</td>
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<td>1c. 17.2 km of transmission mains constructed (2018 baseline: 0)</td>
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<td>1d. 57.5 km of distribution network constructed and rehabilitated (2018 baseline: 0)</td>
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<td>1e. 1 reservoir rehabilitated and 2 reservoirs constructed to increase storage capacity to 4,500 m³ (2018 baseline: 500 m³)</td>
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<td>1f. 18 DMAs established and connected to the SCADA with 42 bulk meters and 5,220 smart meters, of which 6 DMAs with</td>
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<tr>
<td>Results Chain</td>
<td>Performance Indicators with Targets and Baselines</td>
<td>Data Sources and Reporting</td>
<td>Risks</td>
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<td></td>
<td>rehabilitated distribution networks (2018 baseline: 0)</td>
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<td>1g. 2,000 new water supply connections provided in Shomansur district (2018 baseline: 0)</td>
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<td>1h. 9.8 km of sewage collector rehabilitated, benefitting 352,000 people, of which 120,000 are women (2018 baseline: 0)</td>
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<tr>
<td>2. Sustainable business model and institutional capacity developed</td>
<td>2a. A smart management system to link customer database with billing, accounting, and financial management system approved by DVK (2018 baseline: 0)</td>
<td>2a–f. Utility organizational development annual progress reports, project progress reports, executing agency project completion report, annual customer satisfaction surveys, Training workshop course evaluation survey reports</td>
<td>Staff assigned to project by government are frequently rotated</td>
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<td></td>
<td>2b. Business plan with performance benchmarking matrix and service standards established (2018 baseline: 0)</td>
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<td>2c. 2 water loss reduction teams established in DVK and trained in nonrevenue water techniques, including operation of DMAs (2018 baseline: 0)</td>
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<td>2d. 95% installation of smart meters for household connections in 6 district metering areas (2018 baseline: 0%)</td>
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<td>2e. 70% of trained DVK technical staff (of which at least 30% are women) report enhanced skills and knowledge in project planning, climate resilience, operation and maintenance systems, SCADA, accounting, and billing and collection systems (2018 baseline: 0)</td>
<td>2e–f. Semiannual progress reports on the gender action plan implementation, training evaluation reports</td>
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<td>2f. One project implementation group established with assigned DVK staff and new staff recruited (of which at least 20% are women) (2018 baseline: 0)</td>
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</tbody>
</table>
Key Activities with Milestones

1. **Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded**
   1.1. Issue first request for proposal by Q3 2018
   1.2. Mobilize design institute for design of south sewerage collector by Q4 2018
   1.3. Mobilize PMDSC consultants by Q1 2019
   1.4. Issue invitation for bids for first civil works by Q1 2019
   1.5. Award first civil works contract by Q2 2019
   1.6. Award all civil works contract(s) by Q4 2020
   1.7. Complete civil works contract(s) by Q4 2023
   1.8. Commission DMAs by Q2 2024

2. **Sustainable business model and institutional capacity developed**
   2.1. Recruit additional project implementation group staff by Q4 2018
   2.2. Recruit institutional consultant by Q4 2019
   2.3. Install SCADA and metering system by Q4 2023
   2.4. Develop and implement capacity building programs, including communication plan, by Q2 2024

**Inputs**

ADB: $41.18 million (ADF grant)
Government: $4.62 million

**Assumptions for Partner Financing**

Not applicable

ADB = Asian Development Bank, ADF = Asian Development Fund, DMA = district metering area, DVK = State Unitary Enterprise Dushanbe Vodokanal, km = kilometer, m³ = cubic meter, Q = quarter, SCADA = supervisory control and data acquisition.

\[ c \] Ascariasis is a disease where the source of infection is from objects that have been contaminated with fecal matter containing eggs. Transmission comes through overflow of wastewater into crop fields.

B. Monitoring

49. **Project performance monitoring.** Disaggregated baseline data for output and outcome indicators gathered during project processing will be updated and reported quarterly through the IA’s quarterly progress reports and after each ADB review mission. These quarterly reports will provide information necessary to update ADB’s project performance reporting system.23

50. **Compliance monitoring.** IA on behalf of EA will monitor compliance of grant covenants, including that relating to policy, legal, financial, economic, environmental, and others and ensure compliance with grant covenants and assurances. All non-compliance issues, if any, will be updated in quarterly progress reports together with remedial actions. PIG and ADB review missions (at least twice a year) will also monitor the status of compliance with grant covenants and raise the noncompliance issues with the MOF and EA and agree on remedial actions.

51. **Safeguards monitoring.** The Government will do the following or cause the EA and the IA to do the following:

   (i) submit semi-annual environmental and social safeguards monitoring reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;
   
   (ii) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the project that were not considered in the IEE, the EMPs, and the LARP, promptly inform to ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and
   
   (iii) report any actual or potential breach of compliance with measures and requirements set forth in the EMPs and the LARP promptly after becoming aware of the breach;
   
   (iv) the status of safeguards implementation will also be discussed at each ADB review mission and with necessary issues and agreed actions recorded in Aide memories.

52. **Gender and social dimensions monitoring.** IA will ensure GAP issues are reflected in M&E formats and reports. PIG will prepare implementation status of GAP to ensure project specific GAP issues relevant with the project are reflected and addressed. PIG will collect data disaggregated by gender, economic status and other indicators needed for identifying poor and vulnerable. PIG staff will be oriented and trained adequately on GAP for achieving socially inclusive project results.

C. Evaluation

53. ADB will review the project implementation at least twice a year. This includes (i) the performance of the IA, PIG, consultants, and contractors; (ii) physical progress of each works packages and effectiveness of safeguards, and the gender action plan; (iii) inclusion of women and vulnerable groups including the poor in water supply and sanitation infrastructure designing and implementation; and (iv) compliance with grant assurances. In addition to the regular grant reviews, the government and ADB will undertake a comprehensive midterm review in the third year of project implementation to identify problems and constraints encountered and suggest measures to address them. Specific items to be reviewed will include (i) appropriateness of scope,

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23 ADB's project performance reporting system is available at http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool
design, implementation arrangements, and schedule of activities; (ii) assessment of implementation pace against project indicators; (iii) effectiveness of capacity building programs; (iv) compliance with safeguard measures; (v) extent to which the gender action plan is being implemented; (vi) needs for additional support for O&M of the facilities established under the project; (vii) lessons learned, good practices, and potential for scale up; and (viii) changes recommended. Within 6 months of physical completion of the project, the EA and IA will submit a project completion report to ADB.

**D. Reporting**

54. The IA will provide ADB with (i) quarterly progress reports in a format consistent with ADB’s project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator’s performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the IA audited financial statement together with the associated auditor’s report, should be adequately reviewed.

**E. Stakeholder Communication Strategy**

55. The project’s communication strategy uses integrated supports Output 1 – rehabilitation and expansion of the water supply and sewerage system in select districts in Dushanbe – by using integrated best practices in development communication to promote social acceptance for new systems and technologies. Communication support for Output 1 includes use of behavior change communication to reinforce the project’s impact on health and urban resilience to climate change. The communication strategy also supports project Output 2 – improving the sustainability of the operations of DVK – by bolstering customer trust through strengthened customer relations management and improved customer service standards.

56. This document summarizes and highlights elements in the detailed communication strategy. The approaches laid out in this document were based on stakeholders mapping and analysis, media mapping, and used key findings from the project’s socio-economic survey (SES)\(^{24}\) and FGDs\(^{25}\) among affected people. The communication strategy will be further refined in a strategic communication planning process involving the EA, IA, and other key stakeholders in the water and health sectors to ensure buy-in. The output of this participatory exercise is a communication action plan which will detail the approaches and activities per stakeholder, phasing and timing to support project milestones, monitoring and evaluation, and implementation arrangements. Young Generation Tajikistan (YGT), a local NGO, will work with the DVK’s communication and its media unit and the customer relations unit, in the first phase of the project, to refine and implement the communication action plan.

\(^{24}\) Socioeconomic survey (SES) and census survey conducted in the project area involved 310 persons including owners, renters and users of affected lands and buildings, owners and renters of permanently and temporarily affected businesses, DPs who will permanently lose employment as well as persons who will be severely affected by the Project.

\(^{25}\) FGDs were conducted by social development specialists in 5 mahallas involving 70 participants (58 women and 12 men) to complement the quantitative data results of the Socio-Economic Survey. Aside from FGDs, stakeholder consultations were also held through community meetings and key interviews involving a total of 459 participants.
57. DWSSP is the first urban project in Tajikistan, and this document also lays out the general knowledge management and external relations direction to capture best practices in development communication, and ensure visibility for ADB throughout the project cycle.

58. The project’s communication strategy aims to: (i) promote social acceptance for new water supply and sewerage systems; (ii) improve customer relations and trust; and (iii) change behavior on water use to prevent water borne illnesses and overconsumption.

59. **Promoting social acceptance for new water supply and sewerage systems.** Consultations indicate that stakeholders generally welcome project interventions to renovate and expand the water supply lines as they have been suffering from irregular water supply and low water quality for many years. Being new and untried, there are points of resistance in accepting the new smart meters and pre-paid smart meters, and fully paying for the water billed through these new systems. The SES survey shows that only 28% of respondents are satisfied with the quality of water and water supply services. While stakeholders generally profess a positive attitude towards water meters and acknowledge a willingness to pay for clean water, these were based generally on the assumption that water meters will lead to lower payments. With only around 40% being actively employed though, majority of respondents have raised concerns about possible increases in tariffs brought about by the new systems. Stakeholders also express having many unanswered questions on the workings of smart meters and their impact on water supply, billing and collection, and the disruption (i.e., dust, noise, and other environmental hazards during construction and installation) that the project will have on their routines and water allocation. Ocular visits to some project areas reveal various structures built on and along the current water supply and sewerage lines compromising and increasing the risk of contamination for the new water and sewerage corridor.

60. To achieve social acceptance for the new systems, the following approaches will be conducted: (i) continue stakeholder engagement to provide full information on new systems in a manner and timing appropriate for each stakeholder; (ii) provide communication support to ensure that the 71 affected people are fully informed about project impacts, and have a two-way platform by which to provide feedback; (iii) provide advance information on disruptions (construction, installation, water distribution); (iv) form or maximize community groups to protect water supply and sewerage corridors (no-build zones, etc.).

61. **Improving customer relations and trust.** With only 28% of respondents being satisfied with water supply services and water quality, the SES survey and FGDs indicate that the levels of satisfaction and discontent about DVK’s customer service vary. For women, DVK’s lack of response and delayed action to issues they have raised about water line maintenance, the collectors’ attitudes and “extra fees” asked from them on top of the meter reading -- show a low customer service standard. SES results show that 38% of the respondents consider the water used for cooking and drinking is unsafe. Around 53% say that water is dirty and opaque, while 27% say that their water contains bacteria and microbes. There are various platforms that DVK customers use to complain and give their feedback, and coordinating these streams will result to better customer service management: (i) traditional modes include approaching the *raes majallahs* (heads of communities) and elevating complaints to the *jamoot* if the issues are not resolved; (ii) direct visits to the branches; and (iii) the newly established grievance redress mechanism (GRM) required by ADB for its projects. The numerous stakeholders involved in water and health issues do not provide synchronized, credible information, and inconsistent, uncoordinated messaging will pose reputational risks for the project, and lower consumer confidence.
62. To improve customer relations and trust, the project will employ the following approaches: (i) strengthen DVK’s customer service standards, communication protocols and standard operating procedures for customer relations; (ii) conduct communication capacity building for DVK communication and media, and customer relations units, spokespersons and frontline communicators, *raes majallahs*, etc. to build trust and synchronize communication activities; (iii) align existing feedback platforms with the grievance redress mechanism, and expand customer relations network (branch-based, online, hotline); (iv) set up and sustain an internal communication mechanism among many government & nongovernment stakeholders working in the water and health sectors.

63. **Changing behavior on water use and conservation and sanitation.** DVK’s water consumers vary in their socio-economic status, educational level and practice different unhygienic habits that further compromise water quality and increase the prevalence of waterborne diseases. Consumers also profess to not being conscious about water conservation despite admitted water scarcity. Only 54% of the respondents boil their water before consumption while 14% do nothing. Poor water quality and frequent water contamination has resulted in high incidences of diarrhea in children aged 6 to 11 months and diarrhea-related deaths among children aged 1 to 5 years due to waterborne diseases. Women in the Shohmansur and Rudaki districts point to Hepatitis A and acute intestinal infections as among the chronic diseases common in children. The illnesses are caused more by unhygienic practices than water quality. The lack of public understanding of the importance to conserve water as a natural resource, combined with low tariff, led to uncontrolled consumption, and wastage of water.

64. A behavior change communication (BCC) action plan will be drafted to change individual and community behavior on water use focusing on water conservation and sanitation and in key pilot areas. A monitoring and evaluation framework will be developed as part of the BCC action plan to ensure that a standard documentation system is in place to track interim behavior changes throughout the project cycle. The first phase involves the development and pretesting of communication tools and materials to negotiate for changes in key practices on water use and sanitation that lead to illnesses and shifts in habits that lead to overconsumption of water. The second phase involves the mobilization and capacity building of community groups to roll out the BCC action plan.

65. A case study on the best practices on development communication used by the project will be produced as a knowledge product. Knowledge-sharing sessions will be conducted to disseminate the case study, distill good practices, and share lessons to various stakeholders. The case study will track the communication planning process, and the impact of the approaches in promoting social acceptance for new systems, changing behavior, and improving the level of trust for a water utility. The study can be packaged into popular formats (i.e., blogs, feature articles, etc.) and used during knowledge-sharing sessions. Press events will be organized for ADB’s visibility during important project milestones e.g., grant signing ceremony, completion and launch of water supply and sewerage lines.

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**COMMUNICATION STRATEGY MATRIX #1**

**Overall Communication Goal:** Water users in Dushanbe will accept the project interventions and new systems as positive steps in improving the water supply and sewerage services to improve the health status and increase the climate resilience of communities. In addition, water supply providers will bolster customer trust and patronage through strengthened customer relations that will improve the sustainability of operations enabling the provision of better water supply and sewerage services.

**Communication Objective 1: Promote social acceptance for new water supply and sewage systems**

<table>
<thead>
<tr>
<th>Key Stakeholder</th>
<th>Stake in project/ current behaviors</th>
<th>Desired behaviors</th>
<th>Key messages</th>
<th>Intervention /methods &amp; channels</th>
<th>Timelines</th>
<th>Monitoring &amp; Evaluation</th>
<th>Responsible Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water consumers in poor households in project pilot areas: (1) With piped-in water and regular supply (2) With piped-in water with intermittent supply/allocation (3) With no piped-in water / accessing other water sources</td>
<td>Have historically been unable/do not fully pay DVK for water services -- may resist tariffs Will continue to build on and near new supply line and sewerage corridor risking contamination Will experience disruption due to construction, installation and water allocation</td>
<td>Fully understanding mechanics of smart metering &amp; positive impact on billing and collection will encourage full, prompt payment / installment mechanisms Keep new water and sewerage corridor free from illegal construction and connection Understand that disruption is temporary and will result to better services -- adjust daily routine to absorb inconvenience</td>
<td>Total cost from various water sources 10x more (with women’s time/labor) than cost of water actually consumed Meters are fair and will prevent “extra fees” added – bill is based only on water actually consumed Illegal construction and connection will contaminate already clean water affecting your family and neighbors Environmental mitigation measures in place during construction and installation</td>
<td>Community assemblies through chief of mahalla and DVK communication group Volunteers /leaders identified and trained to provide info / protect water corridor Multi-media videos shown answering FAQs on smart meters; maps, location of supply and sewerage lines Dedicated information billboard at community center about location,</td>
<td>To commenc e Q1 2019 M&amp;E indicators to be finalized during action planning</td>
<td>DVK communication unit, YGT for first phase</td>
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<td>Water users in multi-storey buildings where prepaid smart meters will be installed</td>
<td>Do not fully understand smart meters / prepaid smart meters -- resistance to advance payment</td>
<td>Fully understand mechanics of smart metering / prepaid &amp; impact on billing and collection -- there will be no collectors; meters will be installed outside (similar to electricity meters)</td>
<td>Apartments will have 24/7 high pressure water</td>
<td>Meetings through chief of buildings and DVK communication group</td>
<td>To commence Q1 2019</td>
<td>M&amp;E indicators to be finalized during action planning</td>
<td>DVK communications unit, YGT (for first phase)</td>
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<tr>
<td>Raisi mahalla (village leaders) and raisi jamoat (district leaders) in pilot project areas</td>
<td>Responsible for resolving water issue problems and answering questions about project and new systems -- but may themselves be resistant to smart meters</td>
<td>Trained and mobilized to provide full, accurate information about metering, changes in billing / collection, project milestone schedules</td>
<td>Community will have 24/7 clean water</td>
<td>Workshops to train and mobilize raisi mahalla</td>
<td>To commence Q4 2018</td>
<td>M&amp;E indicators to be finalized during action planning</td>
<td>DVK PIG, Communications Unit</td>
</tr>
<tr>
<td>Connections and construction along old supply and sewerage lines</td>
<td>Water and sewerage corridors are no-build zones</td>
<td>Materials needed: FAQ, short video, maps, schedules of construction</td>
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<tr>
<td>and sewerage corridors should be protected. One illegal structure, one illegal connection will contaminate water supply and affect all</td>
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**Small businesses along water pipeline construction area**

- May temporarily lose their source of income during the construction while cutting the water or demolishing their spaces
- Fully understanding mechanics of smart metering & positive impact on billing and collection will encourage full, prompt payment
- Understand that disruption is temporary; mitigation measures in place, and will result to better services – adjust routine and business systems accordingly
- Benefits to business include: 24/7 high pressure water, only paying for water actually consumed is equal to higher profit
- Temporary inconvenience will ensure better water supply and service for the long term; mitigation measures are in place
- Meeting with the business owners
- Materials needed: FAQ, maps, schedules of construction,
- To commence Q1 2019
- M&E indicators to be finalized during action planning
- DVK communication unit, YGT (for first phase)

**Delivery truck operators and staff**

- Other groups in the water supply chain

- May lose their source of income once water becomes available to mahalla – may block construction and installation
- Fully understand that project will bring clean water for all
- Negotiations ongoing to evolve alternatives to lost livelihood
- Meeting with operators and staff; evolve possible alternatives to livelihood replacement
- To commence Q4 2019
- M&E indicators to be finalized during action planning
- DVK communication unit, YGT (for first phase)

**Administrators in schools, staff and teachers in project areas**

- Schools lack / have partial access to safe drinking water
- May not fully understand new metering system, and changes in billing and payment
- Fully understanding mechanics of smart metering & positive impact on billing and collection will encourage full, prompt payment
- Understand that disruption is temporary;
- Benefits to schools and students include: 24/7 high pressure water, only paying for water actually consumed is equal to better allotment of
- Meeting with school administrators, staff and teachers
- To commence end of Q4 2018
- M&E indicators to be finalized during action planning
- DVK communication unit with YGT, education department
<table>
<thead>
<tr>
<th>Imams / mullas / other religious leaders in project areas</th>
<th>Schools may experience disruption due to construction, installation and water allocation</th>
<th>mitigation measures in place, and will result to better services -- adjust daily routine to absorb inconvenience</th>
<th>resources to other student needs</th>
<th>Clean and regular supply of water is very important for hygiene and ablution in mosques</th>
<th>Meeting with the imams and mullas</th>
<th>To commencing Q2 2019</th>
<th>M&amp;E indicators to be finalized during action planning</th>
<th>DVK PIG, Communications Unit, raisi mahalla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosques may experience disruption due to construction, installation and water allocation</td>
<td>Provide complete, accurate information about new metering to communities</td>
<td>Understand that disruption is temporary and will result to better services -- adjust daily routine to absorb inconvenience</td>
<td>Provide information about why new water and sewerage corridor should be free from illegal construction and connection</td>
<td>Provide complete, accurate information about new metering system</td>
<td>Materials needed: FAQ, short video, maps, schedules of construction</td>
<td>People will adjust their routines and have lesser complaints if they understand that disruption is temporary and mitigation measures are set</td>
<td>Provide the law enforcement authorities with the clear information about the project. So that in a case of raising any issues (illegal connection to the water pipes etc)</td>
<td>M&amp;E indicators to be finalized during action planning</td>
</tr>
<tr>
<td>Law enforcement authorities-city and district level</td>
<td>Need to be fully aware of planned construction to maintain traffic flow, citizen safety and neighborhood security within and surrounding the construction sites.</td>
<td>Provide complete, accurate information about: (a) new metering systems; (b) disruption is temporary and mitigation measures are in place</td>
<td>Enforce law, and provide information about why new water and sewerage corridor should be free from illegal construction and connection</td>
<td>Water and sewerage corridors should be protected. One illegal structure, one illegal connection will contaminate water supply and affect all</td>
<td>People will adjust their routines and have lesser complaints if they understand that disruption is temporary and mitigation measures are set</td>
<td>Provide the law enforcement authorities with the clear information about the project. So that in a case of raising any issues (illegal connection to the water pipes etc)</td>
<td>M&amp;E indicators to be finalized during action planning</td>
<td>DVK PIG, Communications Unit</td>
</tr>
<tr>
<td>Needs to know activities about illegal connections and construction along old supply and sewerage lines</td>
<td>Materials needed: FAQ, short video, maps, schedules of construction</td>
<td>To begin Q2 2019</td>
<td>Materials needed: FAQ, short video, maps, schedules of construction</td>
<td>DVK PIG, Project Implementation Group, Young Generation Tajikistan</td>
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</table>

DVK = Dushanbevodokanal | PIG = Project Implementation Group | YGT = Young Generation Tajikistan
**COMMUNICATION STRATEGY MATRIX #2**

**Overall Communication Goal:** Water users in Dushanbe will accept the project interventions and new systems as positive steps in improving the water supply and sewerage services to improve the health status and increase the climate resilience of communities. In addition, water supply providers will bolster customer trust and patronage through strengthened customer relations that will improve the sustainability of operations enabling the provision of better water supply and sewerage services.

**Communication Objective 2: Improve customer relations and trust**

<table>
<thead>
<tr>
<th>Key Stakeholder</th>
<th>Stake in project/ current behaviors</th>
<th>Desired behaviors</th>
<th>Key messages</th>
<th>Intervention/methods &amp; channels</th>
<th>Timelines</th>
<th>Monitoring &amp; Evaluation</th>
<th>Responsible Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dushanbe Vodokanal (DVK) communication and media unit</td>
<td>Below 25% level of satisfaction from customers constrain patronage and sales growth: Stakeholder issues: “extra fees,” delayed / no response to complaints DVK can benefit from capacity building on development communication and customer relations to sustain operations Stakeholder engagement done by only 4 people in communication unit (customer relations in another unit) Internal communication among DVK units and among stakeholders in the water and health sector lacking</td>
<td>Improve customer relations by setting up proactive two-way platforms where stakeholders can access relevant information and give feedback Be fully informed about new systems and users’ resistance so messaging is consistent Develop and adhere to customer service standards and communication protocol for customer relations management Promote Grievance Redress Mechanism Lead in strengthening intra- and interagency coordination Lead implementation of project’s communications strategy</td>
<td>Increased consumer trust will lead to increased patronage and better sustainability for DVK Strong internal communication will prevent confusion in roles, messaging and improve coordination of communication activities with project milestones</td>
<td>Strategic communication planning Capacity building based on training needs Setting up of coordination network</td>
<td>Q3 2018 Q4 2018 Q1 2019</td>
<td>M&amp;E indicators to be finalized during action planning</td>
<td>DVK communication and customer relations units, YGT (for first phase)</td>
</tr>
<tr>
<td>Role and Position</td>
<td>Description</td>
<td>Activities and Responsibilities</td>
<td>Target Dates</td>
<td>Action Plan</td>
<td>Reporting</td>
<td>Contact</td>
<td>Notes</td>
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<tr>
<td>Dushanbe Mayor, Deputy Mayor and Public Information Officer</td>
<td>As EA and overseer of city utilities (including DVK), successful project outcomes will be seen by key stakeholders as part of the mayor’s successes in solving a critical, chronic problem. Internal communication between EA and IA (DVK) is crucial to coordinate and synchronize.</td>
<td>- Be fully informed about new systems, construction and installation schedules and other project milestones to ensure consistency in messaging and synchronization of communication activities. - Promote Grievance Redress Mechanism to coordinate communication activities (e.x., media engagement, etc.) with DVK communication unit.</td>
<td>- Installation of clean and regular water supply lines, efficient water management and the renovation of the sewerage system show political will to address the city’s water and health issues.</td>
<td>- Regular coordination meetings to with Mayor, Deputy Mayor and other officials. - Materials needed: FAQs, maps and schedules of construction, installation and other project milestones.</td>
<td>To commence Q4 2018</td>
<td>Coordination held every month</td>
<td>DVK PIG, Communications Unit.</td>
</tr>
<tr>
<td>Raisi mahalla (village heads) in project sites</td>
<td>Trusted by communities and holds traditional role in resolving grievances about water issues. Would want to be seen by communities as a positive link between them and DVK.</td>
<td>- Serve as DVK’s community focal point. - Coordinate with focal point for the project’s Grievance Redress Mechanism to elevate and resolve key issues before they worsen.</td>
<td>- DVK is strengthening its relationship with its customers and you are key to elevating your community’s water issues to DVK for action.</td>
<td>- Workshops to train and mobilize raisi mahalla. - Materials needed: FAQs, maps and schedules of construction, installation and other project milestones.</td>
<td>To commence Q4 2018</td>
<td></td>
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<tr>
<td>Water consumers in poor households in project pilot areas: (4) With piped-in water and regular supply (5) With piped-in water with intermittent supply/allocation</td>
<td>Traditionally uses various platforms to elevate water issues for resolution. Have to be fully aware of project’s Grievance Redress Mechanism and how to access it.</td>
<td>- Approach raisi mahalla or project’s GRM focal point for inquiries, feedback and complaints about water issues. - You can use the project’s Grievance Redress Mechanism or approach the raisi mahalla to inquire about smart meters, and give feedback.</td>
<td>- Community meetings. - Materials needed: FAQs.</td>
<td></td>
<td>To commence Q4 2018</td>
<td>M&amp;E indicators to be finalized during action planning</td>
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</table>

Raisi mahalla is trusted by communities and holds traditional role in resolving grievances about water issues. They would want to be seen by communities as a positive link between them and DVK. DVK is strengthening its relationship with its customers and you are key to elevating your community’s water issues to DVK for action. Workshops are planned to train and mobilize raisi mahalla. Materials needed: FAQs, maps and schedules of construction, installation and other project milestones.

Water consumers in poor households in project pilot areas: (4) With piped-in water and regular supply (5) With piped-in water with intermittent supply/allocation. Traditionally uses various platforms to elevate water issues for resolution. Have to be fully aware of project’s Grievance Redress Mechanism and how to access it. Approach raisi mahalla or project’s GRM focal point for inquiries, feedback and complaints about water issues. You can use the project’s Grievance Redress Mechanism or approach the raisi mahalla to inquire about smart meters, and give feedback. Community meetings are planned. Materials needed: FAQs.
(6) With no piped-in water / accessing other water sources

<table>
<thead>
<tr>
<th>Department of Sanitary and Epidemiology Services (SES) of Dushanbe overseeing sanitation and health issues</th>
<th>Provides information about water quality and infectious diseases</th>
<th>Conduct regular independent assessments of water quality in project sites, and elevate issues to DVK for action</th>
<th>Your role in independently assessing the water quality in DVK sites is critical in check and balance, and provides a guarantee for consumers</th>
<th>Meeting with DVK to agree on standards and protocol</th>
<th>To commence Q1 2020</th>
<th>Monitoring visit to the reservoir and households</th>
<th>DVK PIG, Communications Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadcast and print journalists and editors</td>
<td>Since media covers DVK activities bi-annually, may contribute to improving public trust for DVK if coverages are more targeted towards the new systems and behavior change efforts on water conservation and hygiene</td>
<td>Promote clean water as a public issue</td>
<td>Media’s role in highlighting issues related to water is critical as this is a public issue affecting everyone in Dushanbe</td>
<td>Materials needed: FAQs, maps and schedules of construction, installation and other project milestones</td>
<td>To commence Q2 2019</td>
<td>M&amp;E indicators to be finalized during action planning</td>
<td>DVK PIG, Communications Unit, YGT (for first phase)</td>
</tr>
</tbody>
</table>

DVK = Dushanbevodokanal | PIG = Project Implementation Group | YGT = Young Generation Tajikistan
COMMUNICATION STRATEGY PLANNING MATRIX #3

**Overall Communication Goal:** Water users in Dushanbe will accept the project interventions and new systems as positive steps in improving the water supply and sewerage services to improve the health status and increase the climate resilience of communities. In addition, water supply providers will bolster customer trust and patronage through strengthened customer relations that will improve the sustainability of operations enabling the provision of better water supply and sewerage services.

**Communication Objective 3:** Change behavior to lower prevalence of waterborne illnesses and overconsumption of water

<table>
<thead>
<tr>
<th>Key Stakeholder</th>
<th>Stake in project/ current behaviors</th>
<th>Desired behaviors</th>
<th>Key messages</th>
<th>Intervention /methods &amp; channels</th>
<th>Timelines</th>
<th>Monitoring &amp; Evaluation</th>
<th>Responsible Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female water consumers in households in project pilot areas: (a) With piped-in water with intermittent supply/allocation</td>
<td>Significant amount of time is spent on household chores, childcare, water fetching, storage, and making water is safe to drink</td>
<td>Establish link between unhygienic practices and contamination of food and water with illnesses - and shift to new behaviors</td>
<td>It is not just the water quality that makes our families sick, it is in how we store and use water that will keep our families healthy</td>
<td>Further probe specific hygienic practices and water use per context of segmented audience</td>
<td>Training and mobilization of volunteers Q1 2020</td>
<td>M&amp;E indicators to be finalized during action planning</td>
<td>DVK Communications Unit</td>
</tr>
<tr>
<td>(b) With no piped-in water / accessing other water sources</td>
<td>Specific hygienic practices contaminate food and water that lead to increased prevalence of diarrhea among children, Hepa A and B among women</td>
<td>Identify which behaviors by household members are unhygienic and leads to overconsumption</td>
<td>How we prepare food, feed kids, store and use water, and clean will keep our family from illnesses</td>
<td>Negotiate for possible ways to shift to new behaviors (with water / without piped-in water or lacking water)</td>
<td>Materials production and pre-testing to commence Q1 2020</td>
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<td></td>
<td>Practicing better hygiene more difficult if there is no regularly supplied piped-in water</td>
<td>Despite water scarcity, not conscious about water conservation</td>
<td>Water, our precious resource, can run out if we don’t conserve</td>
<td></td>
<td>Roll-out: Parallel with project timelines</td>
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<tr>
<td>Female water consumers in poor households with piped-in water and regular supply</td>
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<td>Female water users in multi-storey buildings where prepaid smart meters will be installed</td>
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</table>
School administrators, staff teachers and students in project areas where:

(a) There is piped-in water with regular continuous supply
(b) there is no piped-in water
(c) supply of piped-in water is rationed / scheduled

Except for Shohmansur 1 mahalla, all project areas lack / have partial access to safe drinking water

Inadequate water supply and unhygienic practices spread infectious diseases leading to missed school days

Establish link between unhygienic practices and contamination of food and water with illnesses

Identify which behaviors by household members are unhygienic and leads to overconsumption – and shift to new behaviors

How we prepare food, eat, store and use water, and clean will keep us healthy

Water can run out, it needs to be saved

Further probe specific hygienic practices and water use per context of segmented audience

Training and mobilization of teachers and active trainers-schoolchildren

Rollout of communication activities

Support mini-projects of schoolchildren that demonstrate shifting to new hygienic and water saving behavior

To commence end of Q4 2018

M&E indicators to be finalized during action planning

DVK communication unit, YGT, education department,

Raisi mahalla (village leaders) and raisi jamoat (district leaders) in pilot project areas

Imams / mullas / other religious leaders in project areas

Being influencers, they can be channels of messages and models of hygienic and water-saving behavior

Establish link between unhygienic practices and contamination of food and water with illnesses

Keeping families healthy is not just the responsibility of DKV or government – how we prepare food, feed kids, store and use water, and clean will prevent illnesses

It is not just the water quality that makes our families

Training and mobilization of raisi mahalla, raisi jamoat, imams and mullas

Use of Friday prayers as platform to promote hygienic and

Mobilization and training of volunteers Q1 2020

Materials production and pre-testing to commence Q1 2020

M&E indicators to be finalized during action planning

DVK Communications Unit
sick, it is in how we store and use water that will keep our families healthy.

Communities will suffer more if water runs out, all of us have roles in saving water.

- water-saving behaviors
- Materials needed: FAQ, short video, maps, schedules of construction

Roll-out: Parallel with project timelines

DVK = *Dushanbevodokanal* | PIG = Project Implementation Group | YGT = Young Generation Tajikistan
X. ANTI-CORRUPTION POLICY

66. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project. All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB’s anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.

67. To support these efforts, relevant provisions are included in the grant agreement, and the bidding documents for the project. All contracts financed by ADB in connection with the project will include provisions specifying the right of ADB to audit and examine the records and accounts of the PIG contractors, suppliers, consultants, and other service providers as they relate to the project. ADB will disseminate ADB’s anticorruption policy to EA and IA.

68. ADB’s Anticorruption Policy designates the Office of Anticorruption and Integrity as the point of contact to report allegations of fraud or corruption among ADB-financed projects or its staff. The Office of Anticorruption and Integrity is responsible for all matters related to allegations of fraud and corruption. For a more detailed explanation refer to the Anticorruption Policy and Procedures. Anyone coming across evidence of corruption associated with the project may contact the Anticorruption Unit by telephone, facsimile, mail, or email at the following numbers/addresses:

   by email at integrity@adb.org or anticorruption@adb.org
   by phone at +63 2 632 5004
   by fax to +6326362152
   by mail at the following address (Please mark correspondence Strictly Confidential):

   Office of Anticorruption and Integrity
   Asian Development Bank
   6 ADB Avenue, Mandaluyong City
   1550 Metro Manila, Philippines 54

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28 ADB’s Integrity Office web site: http://www.adb.org/integrity/unit.asp
XI. ACCOUNTABILITY MECHANISM

69. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB’s Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB’s operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.

Contact details:
Secretary
Compliance Review Panel
Asian Development Bank
6 ADB Avenue
Mandaluyong City
1550 Metro Manila, Philippines
Tel + 63 2 632 4149
Fax +63 2 636 2088
Email: crp@adb.org
Web: www.compliance.adb.org

XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

70. The first draft of PAM has been prepared and agreed upon at the loan negotiations in xx 2018. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.
Appendix 1

Terms of Reference
Project Management, Design and Supervision Consultant (PMDSC)

A. BACKGROUND

1. The Dushanbe City of Republic of Tajikistan intends to receive a Grant for USD 41.22 million under the proposed Grant Number 9407-TAJ under a Financing Agreement LPS: TAJ XXXXX for the Dushanbe Water Supply and Sanitation Project (DWSSP). The project will be the first urban sector project financed by ADB in Tajikistan and will fund the rehabilitation of water supply and sewerage facilities with increased resilience to climate change impact and strengthening of the institutional capacity of SUE Dushanbe Vodokanal (DVK) for improving its services in Shohmansur district and the surrounding areas located in the southeast part of the city. It is aligned with Dushanbe City’s priority to provide safe water and improve environmental sanitation in urban areas. The World Bank has been financing a separate improvement program for the water supply sector in Dushanbe since 2002. The project outputs will not overlap with other donor funded programs.

2. There are two outputs under the project:

   **Output 1: Climate-resilient WSS infrastructure rehabilitated and expanded.** This output will be delivered by: (i) rehabilitation of 17 wells, 22 pumps and second stage pump stations, water metering, chlorination and other facilities at Kafernigan-I including installation of SCADA system; (ii) reduced NRW through rehabilitation of 17.2 km transmission main, establishment of 18 DMAs with installation of 42 bulk meters, 5,220 smart meters, improvement of 57.5 km of distributional network in 6 DMAs, (iii) increased storage capacity to 4,500 m$^3$; and (iv) rehabilitation of south sewerage collector of 9.8 kms.

   **Output 2: Sustainable business model and institutional capacity developed.** This output will be delivered through prioritized institutional strengthening actions which are: (i) business model for DVK developed that covers technical, operational, institutional organizational restructurings, and human resource management; (ii) accountability and incentive mechanism established with a performance benchmarking matrix; (iii) smart management system enhanced for operational efficiency, asset management and seamless integration of customer database, billing, collection, accounting and reporting; (iv) NRW management system operationalized with installation of SCADA for new network management practices for the 18 DMAs using districts equipped with flow meters, smart meters for household service connections, active leaks detection, and calibration of meters; (v) institutional, technical, and financial capacity improved; and (vi) customer care service standards developed and behavior change communication on water conservation and smart metering conducted.

3. Under output 1, the project will improve water supply and sanitation in the Shohmansur district of Dushanbe, where citizens’ have difficulties with water supply and sanitation services due to intensive urbanization and ageing infrastructure. It is proposed to improve primary infrastructure elements in combination with the creation of 18 district metering areas (DMA) as well as installation of smart domestic water metering and a SCADA system for reducing Non-Revenue Water (NRW). Infrastructure prioritized by State Executive Authority of Dushanbe City and State Unitary Enterprise Dushanbevodokanal (DVK) for improvements under the project include rehabilitation of water supply intake works, pump stations, rehabilitate or construct new transmission lines from the intake to third level pump stations and reservoirs, construction of new
reservoirs, rehabilitation of distribution networks, and rehabilitation of the main Sewerage Collector in the South part of Dushanbe City.

B. PROJECT MANAGEMENT ARRANGEMENT

4. State Executive Authority of Dushanbe City will be the Executing Agency and State Unitary Enterprise Dushanbevodokanal (DVK), the Implementing Agency (IA) for all components. Through the Mayor’s decree of 19 July 2018, a Project Implementation Group (PIG) has been established at DVK who will depute existing staff or hire new staff as required to staff the PIG. The grant for the project will finance an increment to the current salary of PIG staff and key DVK staff involved in a supervisory role to ensure accountability. The PIG staff and a team of consultants will be responsible for project management, design, supervision, and monitoring. The consulting team is the subject of this Terms of Reference (TOR). Institutional and capacity development initiatives will be carried out for the entire DVK under Output 2 of the project and will be supported by a separate consulting team under the proposed Grant. The organization structure for project management and implementation is shown below.
PROJECT MANAGEMENT ORGANIZATION

City of Dushanbe
(Executing Agency)

SUE Dushanbe Vodokanal (Implementation Agency)
Director

Project Implementation Group
Head

Staff Position
Engineer (2)
Engineer (Procurement) (1)
Financial Specialist (1)
Gender and Social Safeguard Specialist (1)
Environmental Management, Health and Safety Specialist (1)
Monitoring, Evaluation and Reporting Specialist (1)
Office assistant (1)

International Consultants
(Grant Funding)
Management, Design and Supervision
Institutional Development
Financial Audit
IT Support
Behaviour Change

DVK Key Staff
Chief Engineer
Deputy Director Finance and Administration
Deputy Director for Marketing
Chief Accountant

Operation and Maintenance
Finance and Administration
Information Technology
Communication and Media
Customer Relations
C. CURRENT SITUATION OF WATER SUPPLY SYSTEM IN DUSHANBE AND SHOHMANSUR DISTRICT

5. The City of Dushanbe, the capital of Tajikistan, shows a rapid urban development not only with respect to population but also regarding the spatial development. Dushanbe’s population was 817,000 in 2017 and is forecasted to be 1,050,000 by 2040. The city covers about 127 km². The total population by Territorial Council/district and the population served by water supply in these areas are given in Table 1.

6. However, the urban planning and urban infrastructure cannot keep up with this rapid development and its challenges. Some areas have limited, unsatisfactory or no access to urban infrastructure and services. This is especially the case with the water supply and sanitation services, which are under the responsibility of the State Unitary Enterprise SUE Dushanbe Vodokanal (DVK). Therefore, the City of Dushanbe (Dushanbe) approached the Cities Development Initiative for Asia (CDIA) to conduct a project preparation study (PPS) for the water supply and sanitation sub-sectors. The PPS formed the basis for the DWSSP which was proposed by the Asian Development Bank (ADB). The planned interventions shall complement the World Bank’s efforts in the water supply sector during the last 15 years. As a first step, ADB intends to partially rehabilitate the urban water supply system in Shohmansur district located in the southeast of Dushanbe as well as rehabilitate/re-construct the South Collector sewer which serves the south-eastern part of Dushanbe.

7. The current water supply services are impaired by high physical and commercial water losses due to overaged infrastructure, incomplete and inaccurate registration of customers, and inadequate billing and collection practices. The sanitation situation is characterized by a worn-out sewerage network covering only about 60% of the city, a dysfunctional collector system with insufficient capacity, and ineffective wastewater treatment due to the critical condition of infrastructure and a highly diluted wastewater. Based on the water supply and sanitation road maps prepared by the PPS, a priority project was identified which aims at reducing NRW in Shohmansur district and at improving the sanitary condition in the south-eastern part of Dushanbe. This priority area was chosen due to the; (i) urgent need for water service improvements; (ii) availability of a reliable water source of good quality to supply the area; (iii) fact that the area contains a good mix of single house areas and areas with multi-story buildings; (iv) clear interfaces to the remaining water supply network; and (v) urgent need for rehabilitation of the sewerage network and the collector system. There is a clear need for institutional capacity development to improve the utility’s level of services and to remediate the current deficiencies such as; (i) an incomplete computerized financial management system and inaccurate billing database; (ii) inadequate business planning not allowing for long-term planning and forecasting of revenues, expenditures and investments; (iii) an incomplete network information system for water supply and sewerage systems; (iv) an insufficiently competitive salary structure; and (v) the absence of a centralized customer service center. Moreover, current tariffs for water and wastewater services do not achieve cost recovery and the devaluation of the national currency within the last 10 years amounts to more than 60%, leading to significant exchange rate losses on DVK’s loans in foreign currencies.

8. The development of the water supply system in the eastern part of Shohmansur district started in 1952 and continued until 1990 in accordance with increased needs. The water supply system in Shohmansur is almost entirely based on ground water through a system of 17 boreholes, out of which only 10 or 11 are functioning. The water from these boreholes is supplied

29 Source: Statistic Report 2018, 2017 figures
through 3 main pipelines directly connected to the three reservoirs located within the bore field where disinfection is provided using liquid chlorine without any measured dosing. The chlorinated water is then pumped through two main pipelines each with DN500mm, which aims to supply new residential areas which has developed during the past 20 years and to the eastern part of Dushanbe which has a high population density. These mains cross villages of Rudaki district with developing demands, which are also connected to the main pressure line. The water supply system in these parts of city and Rudaki district have taken place without any systematic and long-term plan. As a result, the water supply is inadequate to meet the needs of the city population for about 70,000 people in the supply area who receive scheduled supplies or who, in some cases, do not have a piped water system. In addition, the aged mains and network encourage high water losses which affect to other city infrastructure and efficiency of the system operation and maintenance.

9. The KAF-1 intake is situated at the right bank of Kafarnigan river, close to Sabzikor village of Rudaki district and the local authority has distributed land for the construction of residential buildings and a stone industry close with border of water intake, which is not fully protected with a sanitary protection system. While two out of the four intake site boundaries have been fenced, as first protection zone, the other boundaries haven’t been provided with a sanitary protection system.

10. Moreover, uncertainty regarding Sanitary Protection Zones 2 and 3 have led to the process of uncontrolled gravel excavation from the river bed, resulting in part of the river bank bordering KAF-1 being washed out which threatens the water intake, as well as potentially polluting the underground water resources.

11. Despite the above improvements, there remains a real need to re-establish the SPZ, improve the water supply system by rehabilitating the production facility, provide proper disinfection and water quality control, rehabilitate and extend the pump stations and transmission lines, construction of new reservoirs, rehabilitate the distribution network and provide additional water metering.

12. Furthermore, there are considerable physical and commercial losses of water from the production, transmission and distribution system due to the poor condition of the infrastructure and poor water management. The project will support reduction of NRW through rehabilitation of the intake facilities, transmission mains, establishment of DMAs with installation of bulk meters at the production stage, distribution points and smart metering for house connections, improvement of the distribution network in the pilot DMAs as well as installation of a SCADA system.

13. The project will also rehabilitate the dysfunctional part of South collector.

<table>
<thead>
<tr>
<th>Description/ name of mahallas or GEU (housing and communal services)</th>
<th>DMA</th>
<th>Population Cap</th>
<th>Size (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chehova, N. Muhammad, GEU-6</td>
<td>A-1</td>
<td>8579</td>
<td>65</td>
</tr>
<tr>
<td>GEU-8, (Drujiba Narodov)</td>
<td>A-2</td>
<td>1107</td>
<td>8</td>
</tr>
<tr>
<td>Shomansur-1, Vosifi, GEU-1</td>
<td>A-3</td>
<td>8359</td>
<td>68</td>
</tr>
<tr>
<td>Shodi, Shohmansur-2, GEU-8, GSK-75</td>
<td>A-4</td>
<td>6901</td>
<td>51</td>
</tr>
<tr>
<td>Description/ name of mahallas or GEU (housing and communal services)</td>
<td>DMA</td>
<td>Population Cap</td>
<td>Size (Ha)</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-----</td>
<td>----------------</td>
<td>----------</td>
</tr>
<tr>
<td>GKH- Rohi Ohanchi</td>
<td>A-5</td>
<td>462</td>
<td>6</td>
</tr>
<tr>
<td>Afzali</td>
<td>A-6</td>
<td>2945</td>
<td>37</td>
</tr>
<tr>
<td>Dishodi Barno, GEU-7, GKH-Shelkom.</td>
<td>A-7</td>
<td>5033</td>
<td>42</td>
</tr>
<tr>
<td>Bedil, GEU-8 Shaumyan</td>
<td>A-8</td>
<td>5030</td>
<td>40</td>
</tr>
<tr>
<td>GEU-3, Jil Massiv</td>
<td>C-9</td>
<td>2571</td>
<td>21</td>
</tr>
<tr>
<td>Shohmansur-3</td>
<td>A-10</td>
<td>3119</td>
<td>27</td>
</tr>
<tr>
<td>GEU-5, Binokoron</td>
<td>C-11</td>
<td>5338</td>
<td>40</td>
</tr>
<tr>
<td>Chinoro-1</td>
<td>A-12</td>
<td>1763</td>
<td>21</td>
</tr>
<tr>
<td>Chinoro-2</td>
<td>A-13</td>
<td>864</td>
<td>23</td>
</tr>
<tr>
<td>Buston-1, Karotegin</td>
<td>A-14</td>
<td>3645</td>
<td>80</td>
</tr>
<tr>
<td>Buston2, Zebunniso</td>
<td>AB-15</td>
<td>9429</td>
<td>165</td>
</tr>
<tr>
<td>Hovaron</td>
<td>B-16</td>
<td>7693</td>
<td>124</td>
</tr>
<tr>
<td>GEU-4, 191-192 micro districts</td>
<td>C-17</td>
<td>3554</td>
<td>37</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>76394</strong></td>
<td><strong>853</strong></td>
</tr>
</tbody>
</table>

14. The local authority has prepared a technical design for the reconstruction of the eastern part of water intake KAF-1 and the connection to the distribution system of new residential areas in the eastern part of Dushanbe city (Hovaron) to enhance the water supply. However, this system is not yet implemented due to shortage of funds.

15. There are two stages of lift pumps incorporated into the network at the intake area. The first stage pumps borehole water to the underground reservoirs, while the second stage pumps water from the reservoir to the reservoirs in the elevated parts of the city via third stage lifting pump stations and then to the distribution network. This second stage pumping system was rehabilitated in 2006, under WB funding, but in recent years the ageing equipment has caused many operational difficulties and is reported to result in high power costs due to inefficiency of the equipment.

16. In addition to the rehabilitation of KAF-1, the prepared technical design also considered installation of two transmission mains from the water intake to a new planned reservoir and a new third stage lift pump station in the Hovaron area of Shohmansur District.

17. Problems with water management and operation of the system further exacerbates the situation, with water losses of 60 to 65 % throughout in the distribution system. The disinfection facilities at the water intake have been damaged and primitively rehabilitated but do not comply with the technical requirements. People living in multi storey houses do not have a reliable supply of water, while those in Karotegin, Zebunniso, Shohmansur -1,2,3, Vosifi, Shodi mahallas and 191-192 micro districts have limited access to safe drinking water.

18. Thus, there is a need to provide a detailed assessment of the overall demand, investigate the bore-hole resources, improve the disinfection system, regulate water quality, rehabilitate second and third stage lifting pump stations, construct new reservoirs to meet the present and future needs of Shohmansur district of Dushanbe city.
19. During 2005-2006 through WB financing, some facilities at KAF-1 were replaced, which helped DVK and Dushanbe City provide emergency water supply of customers. Further support for the reduction of water losses were initiated by WB in 2012-2014 with installation of domestic water meters in Dushanbe city, mostly in the zones supplied by groundwater.

20. WB have initiated support for capacity building of the local water operator. The projects funded by WB with project numbers DWSP2-15, DWSP2-20.1, DWSP2-20.2, DWSP2-18, DWSP2-19, DWSP2-FAV, DWSP2-TR2, TR4, DWSP2AFIC-10,16 and DWSP2AFCS-17,18,20.2, 25, carried out some activities: in 2011-2014.

D. CURRENT SITUATION OF SEWERAGE SYSTEM IN THE PROJECT AREA OF DUSHANBE CITY

21. Only 60% of the city area is connected to the sewerage system, which corresponds approximately to 70% of the population. In the priority area, more than 40% of the population have no access to sewerage services. The existing wastewater treatment plant (WWTP) was built in three stages from 1969 to 1991 and has a capacity of about 700,000 population equivalent. The existing condition of the WWTP is critical: the screening, primary clarification and effluent polishing are partly functional, whereas the activated sludge system is dysfunctional and the sludge treatment, mainly consisting of sludge drying fields, is only partly functional.

22. The present sewer network system is a separate system for the collection of sewerage and surface water. Investments for the rehabilitation and extension of the sewerage network system have been very limited during the past 25 years and the infrastructure is generally in poor condition. The surface water is mainly drained in open channels and pipes along the streets. The surface water drains are maintained and renewed together with the streets and are in a better condition than the sewerage network.

23. The following challenges in wastewater collection have been identified:
   - Poor condition of the sewerage network resulting in potential groundwater pollution and the need for significant investments for reconstruction and rehabilitation.
   - The South sewage collector is dysfunctional and partly blocked due to insufficient / partly inverse slope leading to critical sanitary and environmental conditions in a large area of the southeastern part of Dushanbe
   - Limited service coverage sewerage network within the city and in the peri-urban areas
   - Lack of inventory, regular inspection, mapping and documentation of the sewerage and surface water collection networks
   - Lack of equipment and capacity for sewer operation, inspection and repair
   - High dilution and surface water infiltration into the sewerage network
   - Lack of maintenance and investment planning
   - No adequate management of new connections to the sewerage and the surface water collection networks resulting in misconnections

24. The local authority has prepared a technical design for the reconstruction of the eastern part of South Collector. The designed section comprises rehabilitation of 6.8 km out of 11.3km, although most sections of the remaining part are also dysfunctional. DVK is in the process of initiating preparation of the technical design for the rehabilitation of the second part of south collector (4.5 km).
E. OBJECTIVES

25. The objectives of the consultancy services for Project Management Support, Design and Supervision Consultant (PMSDCS) is to provide support to the Implementing Agency State Unitary Enterprise SUE Dushanbe Vodokanal (DVK) and the PIG for the project management and preparation of Component 1: prepare the detailed design and cost estimates, develop contract packages, and supervise the construction of the civil, mechanical and electrical works related to the water source improvement and protection, pump stations, transmission lines, water reservoirs, distribution network, establishing of DMAs, implementation of a SCADA system, and the South Collector sewer in the south-east part of Dushanbe city, as well as assist to project as necessary for fulfilment of the Component 2 - Institutional and Capacity Building.

F. INSTITUTIONAL ARRANGEMENTS

26. The principal stakeholders involved are:

(i) **Client**: Local Executive Authority of Dushanbe city, responsible for the management and implementation of the DUWSSP project.

(ii) **Owner**: SUE Dushanbe Vodokanal with responsibility for their respective geographic areas.

(iii) **Local Authority**: Hukumat of Dushanbe city, Hykumat of Rudaki district.

(iv) **Communities**: Communities that may be impacted during the construction activities or are beneficiaries of the output of the infrastructure improvements.

(v) **Client’s Representative**: Project Implementation Group (PIG) of SUE Dushanbe Vodokanal, acting on behalf of the Client.

(vi) **Consultant**: Project Management Support, Design & Supervision Consultant (MSDSC) to perform this TOR.

(vii) **Engineer**: The function of the PMSDSC during the construction phase, as usually defined in a civil works contract, to include the responsibility of the Engineer as appropriate.

(viii) **Contractor**: Works contractor(s) selected through ADB’s International Competitive Bidding procedure to perform the construction components designed by the Consultant.

(ix) **Financing Agency**: Asian Development Bank (ADB).

27. The Consultant reporting to the Client, shall work under the overall guidance and direction of the Client’s Representative. The Client’s Representative will liaise with the Owner/Client to arrange for the approvals or permits that may be required by the Consultant. The Client’s Representative shall also assist in providing necessary introductions and coordination with government agencies in collecting existing data, surveys and reports.

28. It should be assumed that no direct support is available from the Client, Owner or Local Authority, for the provision of office space or other administrative support activities for the implementation of this TOR.
G. SCOPE OF SERVICES

Component 1

29. The Consultant shall include the following elements in the implementation of the TOR:

(i) Review and check of the preliminary design, including topographical and geotechnical/geology surveys done by CDIA and partially prepared technical designs by the local authority

(ii) Additional collection of baseline data, conducting site investigations and analysis of collected data;

(iii) Conducting additional surveys, if needed, including topographical, hydrological, hydro-geological and geo-technical;

(iv) Development of design options and preparation of costed options for rehabilitation or new construction not carried out by CDIA:

(v) Preparation of alternative preliminary design options, if necessary, for approval by Owner and the Client;

(vi) Update and monitor the implementation of land acquisition and a Resettlement Plan (LARP) and Environmental Management Plan (EMP) of already identified subprojects in accordance with ADB procedures;

(vii) Conducting initial social assessments and environmental examinations for additional distribution network improvement based on the DWSS's environmental assessment and review framework (EARF). Reconfirm that the project activities do not include involuntary resettlement and/or land acquisition.

(viii) Coordination with the relevant PIG staff for Social & Safeguards Unit for safeguard compliance and management of complaints, in relation to work components included in this TOR;

(ix) Stakeholder coordination and updating to include coordination with PIG Social & Safeguards Unit for public awareness and community relations, in relation to work components included in this TOR;

(x) Completion of detailed designs, technical specifications, cost estimates, work schedules and related ADB required safeguards documentation, for approval by the Owner and the Client;

(xi) Establishment of Quality Assurance and Quality Control procedures and required plans and manuals,

(xii) Preparation of tender documents to meet ADB’s Procurement Guidelines, for approval by the Client and the ADB;

(xiii) Coordinate with PIG staff for the management of the procurement of the Contractors under ADB’s Procurement Procedures, to include submission of the evaluation reports for review and approval by the Client and ADB;

(xiv) Preparation of Contract documents, for approval by the Client;

(xv) Management and supervision of the Contractors (in the capacity as Engineer for the civil works contract) including but not limited to: supervision; inspections; progress monitoring; works and payment certification, coordinating with the Client’s Representative for formal contractual notification to the Contractor.
Component 2

(i) Establishment, implementation and reporting of Project Performance Management System (PPMS)

(ii) Support to prepare and develop future investment project

(iii) In consultation with DVK, prepare technical training program and prepare training plan particularly on NRW, leak detection meter calibration and DMA management and conduct training to DVK’s technical staff

(iv) Prepare training modules for each of the technical training activities

(v) Prepare a manual for operation of District Metering Areas, including details on leak detection methodologies

(vi) Provide methodology for evaluating the training effectiveness and implement in the period following the training.

(vii) Provide on-the-job training to DVK technical staff, as required.

30. The following are the main activities expected to be covered by this TOR under three separate construction packages:

Dushanbe City Water Supply Improvement Package-1, work components include:

(i) KAF-1 Intake: Rehabilitation of 17 wells, 22 pumps and second stage pump stations, upgrading internal pipe network, water metering, chlorination, construction of laboratory and operation's room also including site security, rehabilitation of river bank flood protection structure and NIC Well fields: Rehabilitation well No 58, cleaning and pumping remaining 16 wells, replacement of 22 pumps with more efficient options, replacement of electrical cables and equipment, safety equipment, lifting pipes and valves, water meters, check valves, improving well buildings and service area, covering of electrical equipment, rehabilitation of Transformer TM400-2 unit, improving electro-mechanical systems and first sanitary protection zone, Installation of SCADA system for Pump station and wells and connection with DVK’s NIS;

(ii) Pumping Station at KAF-1: Rehabilitation of the pump station building, replacement of existing pumps with more efficient pumps in accordance with water demands, high pressure pumps with capacity Q1800m3/h, H125m - 4 units and, other low-pressure pumps Q210m3/h, H90m-2 unit, replacement cables, valves and check valves to connect between the new Transmission line at 1 above, and the current transmission line to the villages.

(iii) Chlorination: Rehabilitation of the existing building, installation of new chlorination equipment with automatic dosing system and control of residual chlorine.

(iv) Construction of laboratory and operators building: New building construction with two room laboratory with sanitation facilities and two rooms for pump station operators (4 persons in shift) with sanitation facility.

(v) Internal pipe network improvement: Streamline connections of water collectors to the reservoirs in KAF-1, reconstruction of chambers, replacement of regulation valves, water metering in the production stage and water flow recording to reservoirs

(vi) Transmission Line: Construction of a new transmission lines from the KAF-1 pump station to the main chamber in Aini street and current Bahori reservoirs with approximate length 10.4 km, to include connection to the new transmission lines to the improved Bahori Reservoir and distribution system

(vii) District metering areas (DMAs): (i) establishing DMAs A-1, A-2,A-3,A-4 with full replacement of distribution network, household connections, smart water metering,
booster pump station, approximate length of distribution pipes are 28.0km (ii) separation of the DMAs from the main network system’s connection, metering facilities installation for DMAs A-5, 6, 7, 8, C9, A10,

(viii) **SCADA system for DMAs** and connection with DVK’s Network Information System (NIS).

**Dushanbe City Water Supply Improvement Package-2, work components include:**

(i) **Transmission Line:** Replacement of transmission lines from the main chamber in Aini street to the third lift pump stations Hovaron and 191 micro districts with approximate length 2.4 km, including chambers for the connection of pump stations and DMAs C11, C17 and B16

(ii) Construction of a new transmission line from rehabilitated pump station Hovaron to the new reservoir in Zebunniso and distribution system

(iii) Rehabilitation/repair of one of two existing pipelines DN 500 SL from KAF-1 to Mirzobek village with approximate length 2.8 km, with reconnection of Sabzikor, Gulkoron, Halkagar, Chinoro-2, Mirzobek villages distribution mains in the metering chambers, connection with the SCADA system

(iv) Rehabilitation of pump station Hovaron: Reconstruction of pump station building, replacement of 4 unit pumps with capacity Q350 m³/h, H90 m, set of electro-mechanical equipment including transformer TM400

(v) Construction/rehabilitation 2 monolithic concrete reinforced reservoirs, each with 2000 m³ in Zebunniso mahalla, with protection zone. Analysis of the geotechnical situation at the Reservoir site to investigate the risk of potential subsidence and/or landslide, Formulation of preventive measures in the design and construction stage;

(vi) District metering areas (DMAs): (i) establishing DMAs A-14, AB-15 with full replacement of distribution network, household connections, water metering, booster pump station approximate length of distribution pipes are 29.5km (ii) separation of the DMAs from the main network system’s connection, metering facilities installation for DMAs A10, 10-1, A-11, 12, C11, 17, B 16,

(vii) **SCADA system for DMAs** and connection with DVK’s NIS

**Dushanbe City Sewerage Package-3, work components include:**

(i) Sewerage improvements include the rehabilitation of the South collector with approximate length of 10 km from Mirzobek village connecting to the city network on the right bank of Dushanbinka (Varzob) river.

**D.1 Responsibility for Design Errors and Omissions**

(i) The Consultant shall be responsible for any error or omission in accordance with the following:

(a) The Consultant shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Consultant included within these TORs. The Consultant shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.

(b) Neither the Client’s review, approval or acceptance of, nor payment for, the services required under this assignment shall be construed to operate as a
waiver of any rights under this assignment or of any cause of action arising out of the performance of this assignment, and the Consultant shall be and remain liable to the Client in accordance with applicable law for all damages to the Client caused by the Consultant’s negligent performance of any of the services furnished under this assignment.

(c) The rights and remedies of the Client provided for under this assignment are in addition to any other rights and remedies provided by law.

(d) If the Consultant is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

D.2 Site Investigations and Preliminary Designs

(i) The general types of hydrogeological and geotechnical investigations required are trial pits at different depths, details of existing boreholes, pumping tests and laboratory tests. The following is a minimum amount of work the Consultant should conduct for geotechnical and hydro-geological investigations:

(a) Prepare a site and project description;

(b) Prepare a map showing the regional setting;

(c) Conduct additional field investigations as required that include test borings to determine the subsurface geology;

(d) Conduct pump tests to confirm or determine aquifer yield and available water resources and capacity of wells;

(e) Analyze data to determine the impact on nearby surface water and groundwater resources;

(f) Evaluate the water quality for potable water use and evaluate the chemical quality of water;

(g) The investigation report should document existing site conditions and determine if the site is suitable for the project works, as well as to confirm the available water resources and quality.

(h) Carry out investigations at each of the sites relating to the availability and reliability of local municipal utility infrastructure, eg electricity, to support the components identified in this TOR.

(i) Carry out additional topographical and electromechanical surveys at each of the sites as required, including additional areas and alignments for the transmission pipeline/collector to avoid the requirement for resettlement.

(j) Conduct initial social assessment and environmental examinations based on the initial environmental assessment (IEE) and review framework (EARF). Reconfirm during detailed design that the project activities do not include involuntary resettlement and/or land acquisition. Prepare a Resettlement Action Plan (RAP) and Environmental Management Plan (EMP), in accordance with ADB procedures.

(k) Determine, in conjunction with the Owner and Local Authorities and including consultation with the WB project implementation teams, the water demand required and the hydraulic characteristics to support these infrastructure components, taking into account expectations for future population and community expansion.

(l) Prepare a special report on the findings of the geo-technical investigations at the Zebunniso reservoir site, and South collector area from Mirzobek village to TPK regarding the risk of subsidence, and recommended solutions or limitations on the use of the land for irrigation or the site itself.
(m) Develop options, if any, for the rehabilitation of the current water intake at KAF-1, transmission mains, reservoirs and the basis for the existing technical design for improving the Hovaron Water Supply System, compared with the CDIA preliminary/conceptual designs and the local authorities technical design prepared for the sewer collector. This alternative design proposal is to include for each option: outline of works required; impact on current water supply/sewage operations; merits and demerits; rehabilitation or new construction budget estimates; life cycle costs; with a recommendation of most cost-effective solution, presented through the Client’s Representative for approval by the Owner and Client.

(n) On approval of the selected option above, prepare the preliminary design.

(o) Develop final preliminary designs for all other components, for approval by the Owner and Client.

(p) The Consultant is to propose a contracting strategy, procurement and work schedule based on the preliminary designs, outlining work packages and type of contract to be utilized. This may include Design and Build (D&B) approach if the Consultant considers appropriate for specified components, including such explanation for this approach, subject to the approval of the Client and ADB.

D.3 Preparation of Detailed Design, Tender Document including Specifications and Bills of Quantities

(i) On the basis of the approved preliminary designs, a detailed site investigation shall be undertaken, which shall include plans, longitudinal sections and cross sections, geotechnical data, and resettlement plan and environmental management plans.

(ii) Prepare detailed designs for each element, to include but not be limited to:

(a) detailed engineering design drawings for structures and elements;
(b) layout and schematic drawings for electro-mechanical and plant; control systems; definition of the technical capacity of required electro-mechanical equipment;
(c) engineering calculations for structures, hydraulic network flows, water resource capacity and quality at intakes/boreholes, water treatment/disinfection requirements at the water intake locations; electrical supply and load;
(d) bills of quantities and cost estimates;
(e) material and technical specifications;
(f) estimate the operation and maintenance needs for the first two years of operation of the rehabilitated system including staff, material and electricity costs, and prepare performance standards for this operation to be included in the tender documents;
(g) Present to the PIG the key points of detailed design and brief them on the roles and responsibilities of the DVK staff, PIG staff, consultant, and contractor during construction.

(iii) Presentation of the following project management documentation to support the design documentation, to include:

(a) Works schedule to include the identification of any specialist plant or equipment that requires a significant period for ordering, manufacture and delivery as part of the works;
(b) Procurement schedule for all elements incorporated within Components 1;
(c) Plan for the inspection and testing of materials;
Appendix 1

(d) Plan for the testing and commissioning of all plant and equipment;
(e) Revised staffing table and inputs for Consultant staff to support the procurement and supervision of the Contractor.

(iv) All detailed design documentation is to be submitted for approval by the Client.

D.4 Design of DMAs and Commissioning

(i) The consultant is responsible for detailed design of the water distribution network in District Metering Areas (DMAA-1,2,3,4,14, and AB15) and equipped metering chambers on (DMA A-5,6,7,8,10,10-1,12,13 B-16, C-9,11,17) on the, basis that each DMA will be hydraulically isolated from the other DMAs. The DMAs will be of an operationally manageable size with an appropriate number of connections.

(ii) Prepare Bills of Quantity for each DMA. This means that the entire BOQ of the distribution network will be divided on the basis of each DMA. This is essential to ensure measurement and payment of the work on DMA basis.

(iii) During survey and detailed design, the consultant will carry out a comprehensive survey of all consumers’ connections in each street in each DMA and prepare a list and network map of all those consumers’ including the type and method of connections, which it will be necessary to disconnect once the work is completed in the respective DMA and new connections of such consumers will be required to be made on the new network. Such lists of consumers will be included in the bidding documents with clear instructions and procedures to disconnect old connections.

(iv) The consultant will include items in BOQ for the contractor to carry out verification surveys and actual disconnections of the old pipes. Adequate supervision will be taken during the distribution network improvement works so that the new pipes are supplied with water once the system is commissioned.

(v) The Consultant will prepare step-wise Commissioning Plan for the contractor (bidders) to follow for each commissioning of each DMA, to be included in the bidding documents. The plan will include a minimum: (a) procedures for pressure testing the segments of pipe network; (b) sequencing plan and procedures for disconnecting the old connections/pipes; (c) procedures for NRW assessment in each DMA; and (d) identification of all equipment and necessary tools, such as isolating valves, meters, pressure gauges, etc, in order to achieve a successful commissioning and measurement of the performance targets.

(vi) Ensure price estimates for commissioning of DMAs are included in the BOQ.

(vii) The Consultant will identify all support required from DVK, PIG and local authorities during the disconnection of old pipes and commissioning of the new distribution network in the DMAs under the contract and will specifically include the same in the bidding document.

D.5 Contract Packages and Bidding Documents

(i) Based on the detailed design, prepare tender documents using standard ADB cleared master bidding documents including all necessary documentation: detailed technical specifications; Bill of Quantities; detailed construction drawings that allows contractor to carry out construction; specific conditions of contract and qualification criteria.
(ii) Support the PIG in drafting and issuance of the bid invitation, prepare any addendums, and clarifications to bidders’ queries for the PIG’s response.

(iii) The Consultant shall support the PIG to manage the procurement process of the above Works. The Consultant shall also support the PIG to prepare the final evaluation report and contracts, for review and approval by the Client and ADB.

**D.6 Stakeholder and Community Relations**

(i) Specific attention must be given to engagement and relations with the communities and the wider public in general. The following shall be undertaken by the Consultant, but is not limited to:

(a) Preparation and distribution of public awareness and community information regarding the construction related works, in consultation with the PIG Social & Safeguards Unit;

(b) Coordination with the PIG’s Social & Safeguards Unit for safeguard compliance and management of complaints, in relation to work components included in this TOR;

(c) Stakeholder coordination and updating;

(d) Reporting of any contacts from journalists or the media to the Communications Officer of the Client.

**D.7 Construction Supervision and Management**

(i) Undertake the role of the Engineer (as the employer’s representative) as defined in the conditions of contracts;

(ii) Take responsibility for all construction supervision related tasks for all water and sewerage related works to be carried out under the DWSSP.

(iii) The construction supervision and management tasks will include, but not be limited to:

(a) check the layouts and levels for the construction to ensure conformity with the contracts, propose any changes in the plans, if required;

(b) assess the adequacy of all inputs such as material and labor provided by the Contractors and the proposed construction methods by the Contractor and ensure that they are in compliance with the technical specification, agreed project implementation schedule and environmental and other compliance requirements as well as health and safety aspects of the workers and the general public;

(c) furnish all revisions and detailed drawings as necessary during the execution of the contract;

(d) review and comment on Contractor’s submitted construction drawings;

(e) supervise the construction of all project components and monitor the construction;

(f) prepare measurement for works completed and in progress and verify bills for payment to the contractors / suppliers, for onward submission to the Client;

(g) propose and present for approval design changes and contract variations that may be necessary, indicating any effect the change(s) may have on the contract, its price and schedule; prepare all change/ variation orders; certify that the quality of works such as well equipment and plant conforms
to the specifications and drawings, conducting inspections and material testing as required;

(h) assist the Client in the resolution of contractual issues including review, evaluation and confirmation of contract variation orders as required;

(i) manage and administer the works contract, and prepare draft contractual instructions on behalf of the Client, when formal notifications are required;

(j) ensure that the Contractor implements the safeguards requirements pursuant to the EMP and RAP plans;

(k) ensure inclusion of operational and technical staff from the Owner's Operational Units of the concerned districts into the construction monitoring process; provide training to these personnel; attend third party inspections as necessary;

(l) conduct necessary completion tests and assist in the commissioning of the works, equipment and plant; ensure that works are constructed to the prescribed quality in accordance with specifications and drawings of tender documents and quality assurance system and provide necessary certification to that effect;

(m) carry out the first level of inspections and monitoring of the works undertaken by the Contractor, with secondary level of inspections and monitoring to be performed by the Client's Representative;

(n) check installations and commissioning and prepare as built drawings of the completed works;

(o) identify training requirements, provide on the job training for the staff of the Operators on new operational and maintenance procedures introduced;

(p) assist in preparing operation and maintenance procedures; examine Contractors' claim for extension of time and extra works, etc. and prepare recommendation for approval by the Client;

(q) prepare Quality Assurance and Control, and Planned Operations and Maintenance Manual in user-friendly language and format (usable by DVK), of the facilities for the Operators; ensure that Contractors complies with EMP and RAP provisions; and

(r) prepare monthly and quarterly progress reports for the Client for submission to various authorities including the ADB, as per the prescribed requirements of the concerned authorities.

**D8. Safeguards implementation, including Gender Action Plan, and compliance monitoring**

(i) The Consultant will advise and support PIG for ensuring compliance with safeguard requirements as follows:

(a) review and update prepared draft RPs/DDR (Due Diligence Report) upon completion of detail designs;

(b) engage in ongoing and meaningful consultations with stakeholders and affected persons, if any, particularly through implementation of the communication strategy;

(c) ensure provision of timely implementation of RP and payments to the affected persons by the IA before displacement/impact occurs in project sites ready for construction;

(d) oversee implementation of RPs. Advise/take corrective actions when necessary to minimize/avoid social safeguards impacts;
(e) assist the IA and PIG in implementing the Gender Action Plan and Community Awareness and Participation Plan (CAPP);

(f) ensure that all poor and disadvantaged families in the project area also benefit from the water supply and sanitation interventions.

(g) coordinate with the Behavior Change Communication Specialist to ensure that social safeguards and gender impacts, and key issues in the Grievance Redress Mechanism are addressed in the communication strategy, and communication support is provided to project affected persons and other key stakeholders

(h) update EMP based on the detailed designs, cost each activity of the EMP and include the EMP in bidding documents of works contracts.

(i) take necessary action for obtaining permission to use rights of way.

(j) ensure compliance with the Resettlement and Environmental Management Plans (RP and EMP).

(k) oversee implementation of EMPs including environmental monitoring by contractors.

(l) take corrective actions when necessary to ensure no adverse environmental impacts.

(m) submit monthly and quarterly social safeguards and environmental monitoring reports to PIG.

D9. Monitoring of SCADA implementations

(i) The Consultant will advise and support PIG for ensuring compliance with monitoring of SCADA implementation requirements as follows:

(a) Review and prepare updates of SCADA’s detailed designs, check functionality and the layouts of connections and structure for the connection of water production, transmission and distribution stages, (DMAs entering and exit points) with the base station, as well as construction elements to ensure conformity with the contracts

(b) assess the adequacy of all inputs such as material, equipment and labor provided by the Contractor and the proposed construction methods by the Contractor and ensure that they are in compliance with the technical specification and agreed project implementation schedule

(c) take corrective actions when necessary to ensure no adverse cost or environmental impacts.

(d) check installations and commissioning and prepared as built drawings of the completed works;

(e) conduct necessary completion tests and assist in the commissioning of the works, equipment and links, circuit continuity of the system; ensure that works are constructed to the prescribed quality in accordance with specifications and tender drawings

(f) ensure inclusion of operational and technical staff from the DVK’s Operational Unit into the construction monitoring and commissioning process;

D.9 Training

(i) The Consultant will advise and support PIG for ensuring DVK’s needs for O&M trainings for the SCADA system and DMAs operation and maintenance: On the
basis of the needs assessment, the objectives for the training provision required as follow:
(a) Prepare technical training program and a detailed training plan particularly on NRW, Meter Calibration and DMA management.
(b) Prepare procedures for NRW assessment in each DMA, provide on job training for the NRW assessment for the DVK’s technical staff.
(c) Provide on job training on DMA operation/ maintenance and management training for the technical staff of DVK.
(d) Provide, leak detector plan and monitoring on job training for the field operational and technical staff of DVK.
(e) Support the refurbishment of water meter testing equipment and provide on job Meter Calibration training for the technical staff of operator.
(f) Follow up practical training for the water balance calculation, for the management of DVK before, during and after project implementation, based on bulk water meters, SCADA and billing system’s data.
(g) Provide training for the water quality analyses, and operation and maintenance of new chlorination equipment.
(h) Identify training requirements, provide on the job training for the staff of the Operator on new operational and maintenance procedures and equipment incorporating:
  1. design review
  2. installation and commissioning (DMAs, SCADA, smart flow meters, pumps and chlorination equipment)
  3. completion test of equipment
  4. commissioning and taking over
  5. defect liability period

D.10 General Tasks

(i) In addition to the scope of works stated above, the following general tasks shall be carried out by the Consultant:
(a) Prepare and update a detailed implementation schedule and management plan covering all stages of the implementation process for each component from field survey and investigations to acceptance of finished work, to minimise disruption to the general public;
(b) Coordinate closely with the Client to advocate DWSSP benefits and communicate design and implementation plans for awareness improvement;
(c) Conduct detailed rate analysis for cost estimating purposes developed in consultation with related Government Agencies.

D.11 Engineering and Safety Standards

(i) All environmental, designs, material testing and construction standards and codes, shall be in conformance with the relevant Tajik or Russian code, standard or regulation, whichever is the higher.
(ii) The Consultant is to comply with relevant health and safety requirements as applicable in the Republic of Tajikistan, this extends to the oversight of the Contractor.
(iii) The Consultant is to ensure that any design engineer who is required to undertake engineering design calculations and to sign-off drawings, material specifications or other design related documentation, in the performance of these TORs, is registered to operate as a design engineer in the respective discipline, in accordance with the laws and regulations of the Republic of Tajikistan.

D.12 Drawing Requirements

(i) Submission of design related reports is to be in written format in MS Office 2007 compatible format, with drawings in a format compatible with AutoCAD 2010, and submitted on a CDROM or DVD. For each design report with associated drawings hard copies are to be presented as follows:
(a) English language – two sets with one CDROM/DVD
(b) Russian language – three sets with one CDROM/DVD
(c) Drawings shall be presented as paper copies as follows:
(d) Preliminary Designs (if a new option applicable): A3
(e) Detailed Design: A2
(f) Construction Drawings: A3
(g) Reports, BOQ and technical specifications etc: A4
(h) Drawing scales shall be according to the following guidelines:
1. Site Plans: 1:100 to 1:2500
2. Detail drawings: 1:100 to 1:500
3. Cross-sections and Elementals (structures): 1:50 to 1:100
4. Pipeline sections: The longitudinal sections shall be plotted at 1:1000 horizontal and 1:100 vertical scale; the plans shall be plotted at 1:1000 scale; and the C/S shall be plotted at 1:200 horizontal and 1:100 vertical scale.

H. DELIVERABLES

(i) The period of engagement shall be for a period of about 42 months. The Team Leader shall be responsible for overall management of design and construction supervision, preparation of tender documentation, delivery of required outputs, commissioning and consolidation of all required reports and deliverables under the contract. The planning and deployment of expert resources shall be arranged such that the person-months allocations among design, procurement management and construction supervision parts shall be optimum. It must also be ensured that the mobilization of consultants’ resources, including personnel, during the supervision of works shall fully match the implementation schedule of the Contractor so that there will be no cost overruns during the supervision phase.

(ii) The activity schedule shall confirm to the following milestones:
(a) Site investigations and conceptual designs within 2 months from commencement;
(b) Detail designs, cost estimates and bid documents within 5 months from the commencement of consultancy;
(c) Construction Contract Awards within 8 months from commencement;
(d) Construction complete within 42 months from commencement of consultancy services.
REPORTING

(i) A bi-weekly progress meeting will be held with the Client’s Representative for progress updates.

(ii) The consultant shall prepare quarterly reports, financial and project accounting reports, and other reports as required to be submitted to the Client.

(iii) The Team Leader will be responsible for consolidating all the reports produced by the consultants and organizing regular consultations and workshops. Meetings will be held among ADB, representatives of the Government of Tajikistan, Local body of Executive Authority of Dushanbe City, Engineer and the Consultant to review the inception, interim, and draft final project preparation reports and verify accomplishments.

(iv) For each work component during the design phase, the Consultant shall submit the following reports and documents:

   (a) Site Investigation Report which shall include all site investigation information, environmental considerations, social assessment, developed options and recommended options;
   (b) Preliminary Design Report for the approved options;
   (c) Detailed Design Report, including Environmental Management Plan and Resettlement Action Plan for the selected sites;
   (d) Prequalification and Bidding Documents in accordance with ADB Procurement Guidelines.

(v) The following constitutes a minimum reporting requirement under the contract. The Client may request the Consultant for further reports as and when required.

<table>
<thead>
<tr>
<th>Reports</th>
<th>Timeline</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1. Inception report and preliminary assessment reports for all component works | 1.5 months from mobilisation    | ▪ Detailed work plan and schedule  
▪ Preliminary assessment of each of the outputs required and an action plan on them, including review of existing information and system |
| 2. Monthly progress reports                        | 5th day of every month          | ▪ Progress on delivery of each of the outputs;  
▪ Contracts awarded and financial progress against each contract  
▪ Key issues and constraints  
▪ Updated project schedule  
▪ Any changes in scope or personnel |
| 3. Annual progress report                          | 15th of January of each year    | ▪ Summary report for all aspects of works and activities under the Contract including accounting and financial summary |
| 4. Special report for South Collector              | 2 months from mobilisation      | ▪ Options for South Collector - Cost analysis  
▪ Issues and constraints |
| 5. Special report for Reservoir and South          | 3 months from mobilisation      | ▪ Risks to the reservoir  
▪ Risks to collector’s structure  
▪ Risks to the residential area |
### G. STAFFING

(i) The personnel requirement for design and construction supervision for the scope of works as outlined above is estimated to be as follows:

<table>
<thead>
<tr>
<th>Position</th>
<th>Duration (PM)</th>
<th>Design</th>
<th>Procurement</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International Consultants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team Leader/WSS Engineer</td>
<td>24</td>
<td>6</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Water Supply Design Engineer</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>NRW Specialist</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Civil Structural Engineer</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SCADA Specialist</td>
<td>6</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Quality Assurance Engineer</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Electro mechanical Engineer</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Geo-technical engineer</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hydrogeologist</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic network Modeler</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Specialist</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Social Safeguards and Gender Specialist</td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>67</td>
<td>6</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td><strong>National Consultants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTL/WSS Engineer</td>
<td>36</td>
<td>6</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Surveyor</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Water Supply Design Engineer</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Structural Engineer</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Geotechnical Engineer</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reports</th>
<th>Timeline</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collector. Risk to subsidence of the soil</td>
<td></td>
<td>▪ Impacts and constraints on operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Options for solutions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Cost analysis</td>
</tr>
<tr>
<td>6. Preliminary Design Analysis and Adjustment Report</td>
<td>2 months from mobilisation</td>
<td>▪ Preliminary design reports and cost estimates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Issues and constraints</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Procurement strategy</td>
</tr>
<tr>
<td>7. Final design report</td>
<td>6 months from mobilization</td>
<td>▪ Detailed final report for output, including engineering specifications, drawings, BOQ, cost estimates, etc and full tender documents</td>
</tr>
<tr>
<td>8. Final report</td>
<td>Within 42nd month of the mobilisation</td>
<td>▪ Summary of all completion reports on all of the design and contracts prepared and or managed by the DSC and summary of annual progress reports.</td>
</tr>
</tbody>
</table>
## Project Management Support, Design, and Supervision Consultants

<table>
<thead>
<tr>
<th>Position</th>
<th>Duration (PM)</th>
<th>Design</th>
<th>Procurement</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic Modeller</td>
<td>4</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Quantity surveyor</td>
<td>6</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>M&amp;E Specialist</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Supervisors (2 No)</td>
<td>60</td>
<td></td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Electro mechanical Engineer</td>
<td>10</td>
<td>2</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Environmental Specialist</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GIS/CAD Specialist</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Social Safeguards and Gender Specialist</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Manager/ Translator</td>
<td>36</td>
<td>6</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Driver</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td><strong>183</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3: Desirable Qualifications

<table>
<thead>
<tr>
<th>Designation</th>
<th>Desirable Qualifications&lt;sup&gt;30&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Personnel</strong></td>
<td></td>
</tr>
<tr>
<td>Team Leader cum Water Supply Specialist</td>
<td>Graduate Civil Engineer (preferably post-graduate) with 15 years experience, including at least 10 years' experience in design and construction supervision or project management of large water supply project(s). Experience of major externally funded projects including ADB, World Bank, EBRD.</td>
</tr>
<tr>
<td>Other International Experts</td>
<td>Graduate in the related field with more than 10 years experience. Previous experience in externally funded projects.</td>
</tr>
<tr>
<td>National Experts</td>
<td>Graduate in the related field (post graduate preferred) with more than 10 years experience in the related field. Previous experience in externally funded projects (ADB, World Bank, EBRD).</td>
</tr>
</tbody>
</table>

(ii) In accordance with Tajik Government Regulations No 172 dated 03.04.2007, relating to the provision of construction design and supervision activities, a copy of the current registration licence for each relevant company must be provided, as part of the technical submission.

(iii) In addition to the experts mentioned above, the Consultant needs to provide for i) sub-professionals and support staff, ii) vehicles, iii) IT equipment, and iv) costs for preparing reports, outreach materials, community meetings.

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<sup>30</sup> Minimum Qualification for experts is graduate degree in the related field with 3 years of experience in the related field.
Terms of Reference
Audit of SUE “Dushanbevodokanal” and Project Financial Statements

I. Introduction

A. Project Description

1. The Dushanbe Water Supply and Sanitation Project will support the Republic of Tajikistan to: (i) rehabilitate and expand the Dushanbe City water supply and sanitation system, pilot the establishment of district metering areas (DMAs) for non-revenue water management in the Shohmansur District of Dushanbe City and rehabilitate of the South Collector Sewer; and (ii) establish a business model for the water utility, State Unitary Enterprise DUE Dushanbe Vodokanal (DVK), and improve sustainability of operations including an accountability and incentive mechanism with performance benchmarking matrix and smart information management system; and a public awareness campaign for behavior change in water conservation practices.

2. The impact of the project will be improvement of quality of life, health, urban resilience, and economic growth in Dushanbe. The project will have the following outcome: Inclusive and sustainable access to safe and resilient water supply and sanitation services in Dushanbe city improved.

3. The outputs will be (i) climate-resilient water supply and sanitation infrastructure rehabilitated and expanded, and (ii) sustainable business model and institutional capacity developed for SUE-DVK

Output 1: Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded. This output will be delivered by: (i) rehabilitation of 17 wells, 22 pumps and second stage pump stations, water metering, chlorination and other facilities at Kafernigan-I including installation of SCADA system; (ii) reduced NRW through rehabilitation of 17.2 km transmission main, establishment of 18 DMAs with installation of 42 bulk meters, 5,220 smart meters, improvement of 57.5 km of distributional network in 6 DMAs, (iii) increased storage capacity to 4,500 m$^3$; and (iv) rehabilitation of south sewerage collector of 9.8 kms.

Output 2: Sustainable business model and institutional capacity developed. This output will delivered through prioritized institutional strengthening actions which are: (i) business model for DVK developed that covers technical, operational, institutional organizational restructuring, and human resource management; (ii) accountability and incentive mechanism established with a performance benchmarking matrix; (iii) smart management system enhanced for operational efficiency, asset management and seamless integration of customer database, billing, collection, accounting and reporting; (iv) NRW management system operationalized with installation of SCADA for new network management practices for the 18 DMAs using districts equipped with flow meters, smart meters for household service connections, active leaks detection, and calibration of meters; (v) institutional, technical, and financial capacity improved; and (vi) customer care service standards developed and behavior change communication on water conservation and smart metering conducted.

4. The proposed project management organization is shown in the diagram below.
5. Three consulting firms and 3 individual consultants will be recruited under the project. Three consulting firms are: (i) project management, design and supervision consultant; (ii) institutional strengthening and capacity development consultant and (iii) audit consulting firm.
6. Audit consulting firm will be responsible to perform audit of DVK’s financial statement and as well as audit of project financial statement. The TOR for both tasks are included.

B. Current Situation of Water Supply System in Dushanbe and Shohmansur district

7. The City of Dushanbe, the capital of Tajikistan, shows a rapid urban development not only with respect to population but also regarding the spatial development. Dushanbe’s population was 817,000\(^{31}\) in 2017 and is forecasted to be 1,050,000 by 2040\(^{32}\). The city covers about 127 km\(^2\). The total population by Territorial Council/district and the population served by water supply in these areas are given in Table 1.

8. However, the urban planning and urban infrastructure cannot keep up with this rapid development and its challenges. Some areas have limited, unsatisfactory or no access to urban infrastructure and services. This is especially the case with the water supply and sanitation services, which are under the responsibility of the State Unitary Enterprise SUE Dushanbe Vodokanal (DVK). Therefore, the City of Dushanbe (Dushanbe) approached the Cities Development Initiative for Asia (CDIA) to conduct a project preparation study (PPS) for the water supply and sanitation sub-sectors. The PPS formed the basis for the DWSSP which was proposed by the Asian Development Bank (ADB). The planned interventions shall complement the World Bank’s efforts in the water supply sector during the last 15 years. As a first step, ADB intends to partially rehabilitate the urban water supply system in Shohmansur district located in the southeast of Dushanbe as well as rehabilitate/re-construct the South Collector sewer which serves the south-eastern part of Dushanbe.

9. The current water supply services are impaired by high physical and commercial water losses due to overaged infrastructure, incomplete and inaccurate registration of customers, and inadequate billing and collection practices. The sanitation situation is characterized by a worn-out sewerage network covering only about 60% of the city, a dysfunctional collector system with insufficient capacity, and ineffective wastewater treatment due to the critical condition of infrastructure and a highly diluted wastewater. Based on the water supply and sanitation road maps prepared by the PPS, a priority project was identified which aims at reducing NRW in Shohmansur district and at improving the sanitary condition in the south-eastern part of Dushanbe. This priority area was chosen due to the; (i) urgent need for water service improvements; (ii) availability of a reliable water source of good quality to supply the area; (iii) fact that the area contains a good mix of single house areas and areas with multi-story buildings; (iv) clear interfaces to the remaining water supply network; and (v) urgent need for rehabilitation of the sewerage network and the collector system. There is a clear need for institutional capacity development to improve the utility’s level of services and to remediate the current deficiencies such as; (i) an incomplete computerized financial management system and inaccurate billing database; (ii) inadequate business planning not allowing for long-term planning and forecasting of revenues, expenditures and investments; (iii) an incomplete network information system for water supply and sewerage systems; (iv) an insufficiently competitive salary structure; and (v) the absence of a centralized customer service center. Moreover, current tariffs for water and wastewater services do not achieve cost recovery and the devaluation of the national currency within the last 10 years amounts to more than 60%, leading to significant exchange rate losses on DVK’s loans in foreign currencies.


\(^{32}\) Source: Master plan of Dushanbe 2017.
Audited SUE “Dushanbevodokanal” Financial Statements

A. Objective

1. The auditor’s opinion is necessary to establish the credibility, or otherwise, of the SUE “Dushanbevodokanal”’s financial statements.

2. The objective of the audit is to enable the auditor to express an opinion on whether the financial statements of SUE “Dushanbevodokanal” present fairly, in all material respects, or give a true and fair view of, the entity’s financial position, its financial performance and cash flows in accordance with the International Financial Reporting Standards (IFRS) as published by the International Accounting Standards Board (IASB). DVK’s accounting records provide the basis for preparation of the financial statements and are established to reflect its financial transactions.

B. Responsibility for preparation of financial statements

3. The DVK accounting department is responsible for the preparation of financial statements, including the maintenance of adequate accounting records and internal controls, the selection and application of accounting policies, the safeguarding of the assets of the DVK, and adequate disclosure. As part of the audit process, the auditor will request from management of DVK written confirmation concerning representations made in connection with the audit.

C. Scope

4. The audit will be conducted in accordance with International Standards on Auditing (ISA). ISA requires that the auditor plans and performs the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

5. In complying with International Standards on Auditing, the auditor is expected to pay attention to the following matters, among other, including special considerations for public sector entities:

   (i) In planning and performing the audit to reduce audit risk to an acceptably low level, the auditor should consider the risks of material misstatements in the financial statements due to fraud, as required by International Standard on Auditing 240: The Auditor’s Responsibilities Relating to Fraud in an Audit of Financial Statements.

   (ii) When designing and performing audit procedures and in evaluating and reporting the results thereof, the auditor should recognize that noncompliance by the entity with laws and regulations may materially affect the financial statements, as required by International Standard on Auditing 250: Consideration of Laws and Regulations in an Audit of Financial Statements.

   (iii) The auditor should communicate audit matters of governance interest arising from the audit of financial statements to those charged with governance of an entity, as required by International Standard on Auditing 260: Communication with those Charged with Governance.

   (iv) The auditor should appropriately communicate to those charged with governance and to management any deficiencies in internal control that the auditor has identified in an audit of financial statements, as required by International Standard on Auditing 265: Communicating Deficiencies in Internal Control to Those Charged with Governance and Management.
(v) To reduce audit risk to an acceptably low level, the auditor should determine overall responses to assessed risks at the financial statement level, and should design and perform further audit procedures to respond to assessed risks at the assertion level, as required by International Standard on Auditing 330: The Auditor’s Responses to Assessed Risks.

(vi) When certain aspects of an entity’s operations are performed by a third-party service provider, the auditor is expected to include an understanding and assessment of the internal control environment of the service provider during the audit process, as required by International Standard on Auditing 402: Audit Considerations Relating to an Entity Using a Service Organization.

(vii) As part of the audit process, the auditor is expected to obtain written representations from management and, where appropriate, those charged with governance, as required by International Standard on Auditing 580: Written Representations.

(viii) When the external auditor decides to use the work of an entity’s internal audit function to modify the nature or timing, or reduce the extent, of audit procedures to be performed directly by the external auditor, the determination shall be in accordance with International Standard on Auditing 610: Using the Work of Internal Auditors.

(ix) In determining whether to use the work of an auditor’s expert or the extent to which the work of an auditor’s expert is adequate for audit purposes, the determination shall be made in accordance with International Standard on Auditing 620: Using the Work of an Auditor’s Expert.

D. Entity (consolidated) financial statements

6. The auditor should verify that the financial statements have been prepared in accordance with IFRS. It defines a complete set of financial statements as comprising the following components:

(i) a statement of financial position as at the end of the period;
(ii) a statement of comprehensive income for the period;
(iii) a statement of changes in equity for the period;
(iv) a statement of cash flows for the period;
(v) notes, comprising a summary of significant accounting policies and other explanatory information; and
(vi) a statement of financial position as at the beginning of the earliest comparative period when an entity applies an accounting policy retrospectively or makes a retrospective restatement of items in its financial statements, or when it reclassifies items in its financial statements.

E. Audit Reports

Audit opinion

7. The auditor will issue an audit opinion on the entity financial statements. The auditor’s opinion shall be based on an evaluation of the conclusions drawn from the audit evidence obtained and shall be expressed clearly through a written report that also describes the basis for that opinion. The audit report shall be prepared in accordance with International Standard on Auditing 700: Forming an Opinion and Reporting on Financial Statements.

8. A modified audit opinion shall be rendered in the financial statements when the auditor concludes, on the basis of the audit evidence obtained, that the financial statements as a whole are not free from material misstatement; or the auditor is unable to obtain sufficient appropriate
audit evidence to conclude that the financial statements as a whole are free from material misstatement. Modified audit opinions shall be in accordance with International Standard on Auditing 705: Modifications to the Opinion in the Independent Auditor’s Report.

9. The auditor will include emphasis of matter paragraphs or other matter paragraphs in the audit opinion where the auditor, having formed an opinion on the financial statements, seeks to draw users’ attention, when in the auditor’s judgment it is necessary to do so, by way of clear additional communication in the auditor’s report. The paragraphs will refer to either a matter that, although appropriately presented or disclosed in the financial statements, is of such importance that it is fundamental to users’ understanding of the financial statements; or as appropriate, any other matter that is relevant to users’ understanding of the audit, the auditor’s responsibilities, or the auditor’s report. This form of opinion will be presented in accordance with International Standard on Auditing 706: Emphasis of Matter Paragraphs or Other Matter Paragraphs in the Independent Auditor’s Report.

Other audit reports

10. In addition to the audit opinion(s), the auditor will also, in the letter to management:
   (i) provide comments and observations on the accounting records, systems, and controls that were examined during the course of the audit;
   (ii) identify specific deficiencies and areas of weakness in systems and controls and make recommendation for their improvement;
   (iii) report on instances of noncompliance with the terms of the financial agreement(s);
   (iv) draw to the borrower’s attention any other matters that the auditor considers pertinent; and
   (v) responses from management, including implemented and proposed remedial actions.

11. If, during the audit nothing has come to the attention that the auditor considers pertinent to be brought to the attention of the borrower, and a management letter is therefore not prepared, the auditor will issue a letter stating this.

12. The auditor’s opinion on the financial statements and management letter should be received by the DVK no later than three months after the end of audit for FY 20__.

General

13. The auditor is entitled to unlimited access to all information and explanations considered necessary to facilitate the audit, including legal documents, reports of reviews and investigations, correspondences, and credit account information. The auditor may also seek written confirmation of amounts disbursed and outstanding in the Bank records.

14. The auditor is encouraged to meet and discuss audit-related matters, including input to the audit plan, with the project task team.

15. This term of engagement will remain effective for future fiscal years unless it is terminated, amended, or superseded.
AUDITED PROJECT FINANCIAL STATEMENTS (APFS)

I. MANAGEMENT RESPONSIBILITY FOR PREPARING PROJECT FINANCIAL STATEMENTS

1. Management is responsible for preparing and fairly presenting the project financial statements, and for maintaining sufficient internal controls to ensure that the financial statements are free from material misstatement, whether due to fraud or error. In addition, management is responsible for ensuring that funds were used only for the purpose(s) of the project, for compliance with financial covenants (where applicable), and for ensuring that effective internal controls, including over the procurement process, are maintained. In this regard, management must:

(i) Prepare and sign the Audited Project Financial Statements.
(ii) Prepare and sign a Statement of Compliance.

2. Management must include the following in the Statement of Compliance:

(i) That project financial statements are free from material misstatements including omissions and errors, and are fairly presented;
(ii) That the borrower or executing agency has utilized the proceeds of the loan only for the purpose(s) of the project;
(iii) That the borrower or executing agency was in compliance with the financial covenants of the legal agreement(s) (where applicable);
(iv) That the imprest fund procedure, where applicable, has been operated in accordance with the Asian Development Bank’s (ADB) Loan Disbursement Handbook;
(v) That adequate supporting documentation has been maintained to authenticate claims stated on the statement of expenditures (SOE), where applicable, for reimbursement of eligible expenditures incurred and liquidation of advances provided to the imprest account; and
(vi) That effective internal control, including over the procurement process, was maintained.

II. OBJECTIVES

3. The objectives of the audit of the project financial statements is to enable the auditor to (i) express an independent and objective opinion as to whether the project financial statements present fairly, in all material respects, or give a true and fair view of the project’s financial position, its financial performance and cash flows, and (ii) provide a reasonable assurance opinion over certain specific representations made in the Statement of Compliance.

III. AUDITING STANDARDS

4. The audit is required to be conducted in accordance with ISA. These standards require that the auditor comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the project financial statements are free from material misstatement. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the project financial statements. The procedures selected depend on the auditor’s judgment, including the assessment of the risks of material misstatement of the project financial statements whether due to fraud or error. In making those risk assessments, the auditor considers
the internal control relevant to the entity’s preparation and fair presentation of the project financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity’s internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the project financial statements.

5. In complying with ISA, the auditor will pay particular attention to the following standards:
   - ISA 800/ISSAI 1800 – Special Considerations – Audits of Financial Statements Prepared in Accordance with Special Purpose Frameworks.
   - ISA 260/ISSAI 1260 – Communication With Those Charged with Governance.
   - ISA 265/ISSAI 1265 – Communicating Deficiencies in Internal Control To Those Charged with Governance and Management.
   - ISA 330/ISSAI 1330 – The Auditor’s Responses to Assessed Risks.

IV. PROJECT FINANCIAL REPORTING FRAMEWORK

6. The auditor will verify that the project financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB). The executing agency and/or implementing agency are responsible for preparing the project financial statements, not the auditor.

V. AUDIT DELIVERABLES

A. Audited Project Financial Statements

7. An auditor’s opinion providing reasonable assurance over the project financial statements, and project financial statements comprising the following:

<table>
<thead>
<tr>
<th>Table 1: Content of the Project Financial Statements</th>
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</thead>
<tbody>
<tr>
<td><strong>For Cash-Based Financial Statements</strong></td>
</tr>
<tr>
<td>A statement of cash receipts and payments</td>
</tr>
<tr>
<td>A statement of budgeted versus actual expenditures</td>
</tr>
<tr>
<td>A statement of imprest account (where applicable)</td>
</tr>
<tr>
<td>A summary statement of expenditures (where applicable)</td>
</tr>
<tr>
<td>Significant accounting policies and explanatory notes</td>
</tr>
<tr>
<td>Any additional schedules agreed (e.g., a summary of assets)</td>
</tr>
<tr>
<td><strong>For Accrual-Based Financial Statements</strong></td>
</tr>
<tr>
<td>A statement of financial position (balance sheet)</td>
</tr>
<tr>
<td>A statement of financial performance (income statement)</td>
</tr>
<tr>
<td>A statement of cash flows</td>
</tr>
<tr>
<td>A statement of changes in net assets/equity (where applicable)</td>
</tr>
<tr>
<td>A statement of imprest account (where applicable)</td>
</tr>
<tr>
<td>Significant accounting policies and explanatory notes</td>
</tr>
<tr>
<td>Statement of budgeted versus actual expenditures</td>
</tr>
<tr>
<td>Summary statement of expenditures</td>
</tr>
<tr>
<td>Any additional schedules agreed (where applicable)</td>
</tr>
</tbody>
</table>
B. Reasonable Assurance Opinion over the Use of Loan Proceeds and Compliance with Financial Covenants

8. The auditor will provide a reasonable assurance opinion for the following confirmations provided by Management in the Statement of Compliance:

   (i) That the proceeds of the loan were used only for the purpose(s) of the project; and
   (ii) That the borrower or executing agency was in compliance with the financial covenants of the legal agreement(s), where applicable.

9. The auditor will outline the degree of compliance for each of the financial covenants in the loan agreement.

C. Management Letter

10. The auditor will provide a management letter containing, at a minimum, the following:

   (i) Any weaknesses in the accounting and internal control systems that were identified during the audit, including any irregularity in the use of the imprest fund and statement of expenditures (SOE) procedures (where applicable);
   (ii) Any identified internal control weaknesses related to the procurement process such as, over the bidding, evaluation and contract management domains;
   (iii) Recommendations to rectify identified weaknesses;
   (iv) Management’s comments on the audit recommendations along with the timeframe for implementation;
   (v) The status of significant matters raised in previous management letters;
   (vi) Any other matters that the auditor considers should be brought to the attention of the project’s management; and
   (vii) Details of any ineligible expenditure identified during the audit. Expenditure is considered ineligible if it refers to (i) expenditures incurred for purposes other than the ones intended under the legal agreement(s); (ii) expenditures not allowed under the terms of the legal/financing agreements; and (iii) expenditures incurred in violation of applicable government regulations.

D. Specific Considerations

11. The auditor will, during the course of the audit, pay particular attention to the following:

   (i) The use of external funds in accordance with the relevant legal and financing agreements;
   (ii) The provision of counterpart funds in accordance with the relevant agreements and their use only for the purposes intended;
   (iii) The maintenance of proper books and records;
   (iv) The existence of project fixed assets and internal controls related thereto;
   (v) Where the audit report has been issued under ISA 800 or ISSAI 1800, it shall include the mandatory Emphasis of Matter paragraph alerting users of the audit report that the project financial statements are prepared in accordance with a

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33 If the auditor reports any ineligible expenditure in the management letter, the details of the findings should include the funding source to which the observation relates.
special purpose framework and that, as a result, the project financial statements may not be suitable for another purpose. The auditor shall include this paragraph under an appropriate heading;

(vi) On the imprest fund procedure (where applicable), audit procedures are planned and performed to ensure (a) the imprest account (and any sub-accounts) has been managed in accordance with ADB’s Loan Disbursement Handbook, (b) the cash balance of the imprest account (and any sub-accounts) is supported by evidence, (c) the expenditures paid from the imprest account (and any sub-accounts) comply with the approved project purpose and cost categories stipulated in the loan agreement, and (d) the amount of expenditures paid from the imprest account (and any sub-accounts) comply with disbursement percentages stipulated in the loan agreement;

(vii) Adequate supporting documentation has been maintained to authenticate claims stated in the SOE for reimbursement of eligible expenditures incurred and liquidation of advances provided to the imprest account (where applicable);

(viii) On the SOE procedure (where applicable), audit procedures are planned and performed to ensure that (a) the SOEs have been prepared in accordance with ADB’s Loan Disbursement Handbook, (b) the individual payments for expenditures stated in the SOE are supported by evidence, (c) the expenditures stated in the SOEs comply with the approved project purpose and cost categories stipulated in loan agreement, and (d) the amount of expenditures stated in the SOEs comply with disbursement percentages stipulated in the loan agreement; and

(ix) Any weaknesses in internal controls over the procurement process.

12. All reports must be presented in the English language within 6 months following the end of the fiscal year.

13. Public disclosure of the project financial statements, including the auditor’s opinion on the audited project financial statements, will be guided by ADB’s Public Communications Policy (2011). After review, ADB will disclose the audited project financial statements and the opinion of the auditor on the audited project financial statements no later than 14 calendar days of ADB’s confirmation of their acceptability by posting them on ADB’s website. The management letter and the additional auditor’s opinions will not be disclosed.\(^{34}\)

VI. OTHER MATTERS

A. Statement of Access

14. The auditor will have full and complete access, at all reasonable times, to all records and documents including books of account, legal agreement(s), bank records, invoices and any other information associated with the project and deemed necessary by the auditor.

15. The auditor will be provided with full cooperation by all employees of SUE “DUSHANBEVODOKANAL” and the project implementing units, whose activities involve, or may be reflected in, the annual project financial statements. The auditor will be assured rights of

\(^{34}\) This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. Public Communications Policy. Paragraph 97(iv) and/or 97(v).
access to banks and depositaries, consultants, contractors and other persons or firms hired by the employer.

B. Independence

16. The auditor will be impartial and independent from any aspects of management or financial interest in the entity or project under audit. In particular, the auditor should be independent of the control of the entity. The auditor should not, during the period covered by the audit, be employed by, or serve as director for, or have any financial or close business relationship with the entity. The auditor should not have any close personal relationships with any senior participant in the management of the entity. The auditor must disclose any issues or relationships that might compromise their independence.

C. Auditor Experience

17. The auditor must be authorized to practice in the country and be capable of applying the agreed auditing standards. The auditor should have adequate staff, with appropriate professional qualifications and suitable experience, including experience in auditing the accounts of projects or entities comparable in nature, size and complexity to the project or entity whose audit they are to undertake. To this end, the auditor is required to provide curriculum vitae (CV) of the personnel who will provide the opinions and reports, together with the CVs of managers, supervisors and key personnel likely to be involved in the audit work. These CVs should include details of audits carried out by these staff, including ongoing assignments.
Terms of Reference
Institutional Strengthening and Capacity Development Consultants

A. Project Description
1. The Dushanbe Water Supply and Sanitation Project will support the Republic of Tajikistan to: (i) rehabilitate and expand the Dushanbe City water supply and sanitation system, pilot the establishment of district metering areas (DMAs) for non-revenue water management in the Shohmansur District of Dushanbe City and rehabilitate of the South Collector Sewer; and (ii) establish a business model for the water utility, State Unitary Enterprise DUE Dushanbe Vodokanal (DVK), and improve sustainability of operations including an accountability and incentive mechanism with performance benchmarking matrix and smart information management system; and a public awareness campaign for behavior change in water conservation practices.

2. The impact of the project will be improvement of quality of life, health, urban resilience, and economic growth in Dushanbe. The project will have the following outcome: Inclusive and sustainable access to safe and resilient water supply and sanitation services in Dushanbe city improved.

3. The outputs will be (i) climate-resilient water supply and sanitation infrastructure rehabilitated and expanded, and (ii) sustainable business model and institutional capacity developed for SUE-DVK

(i) Output 1: Climate-resilient water supply and sanitation infrastructure rehabilitated and expanded. This output 1 will be delivered by: (a) rehabilitation of 17 wells, 22 pumps and second stage pump stations, water metering, chlorination, and other facilities at Kafernigan-I (KAF-I) including installation of SCADA system; (b) reduced NRW through rehabilitation of 11.5 km transmission main, establishment of 18 district metering areas (DMAs) with installation of 42 bulk meters, 5,220 smart meters, improvement of 56.8 km of distributional network improvements; (c) increased storage capacity by 4,000 cum; and (d) rehabilitation of south sewerage collector of 9.8 kms.

(ii) Output 2: Sustainable business model and institutional capacity developed. This output will support prioritized institutional strengthening actions which are: (i) business model for DVK developed that covers technical, operational, institutional organizational restructuring and human resource management; (ii) accountability and incentive mechanism established with a performance benchmarking matrix; (iii) smart information management system enhanced for operational efficiency and seamless integration of customer database, billing, collection, accounting and reporting; (iv) nonrevenue water management system operationalized with installation of SCADA for new network management practices for the 18 DMAs using districts equipped with flow meters, smart meters for household service connections, active leaks detection, and calibration of meters; (v) institutional, technical and financial capacity improved; and (vi) customer care service standards developed and behavior change communication on water conservation and smart metering conducted.
The proposed project management organization is shown in the diagram below.

**PROJECT MANAGEMENT ORGANIZATION**

**City of Dushanbe**  
(Executing Agency)

**SUE Dushanbe Vodokanal (Implementation Agency)**  
Director

**Project Implementation Group Head**
- **Staff Position**
  - Engineer (2)
  - Engineer (Procurement) (1)
  - Financial Specialist (1)
  - Gender and Social Safeguard Specialist (1)
  - Environmental Management, Health and Safety Specialist (1)
  - Monitoring, Evaluation and Reporting Specialist (1)
  - Office assistant (1)

**International Consultants**  
(Grant Funding)
- Management, Design and Supervision
- Institutional Development
- Financial Audit
- IT Support
- Behaviour Change

**DVK Key Staff**
- Chief Engineer
- Deputy Director Finance and Administration
- Deputy Director for Marketing
- Chief Accountant

**Operations and Maintenance**
- Finance and Administration
- Information Technology
- Communication and Media
- Customer Relations
B. Current Situation of Water Supply System in Dushanbe and Shohmansur district

4. The City of Dushanbe, the capital of Tajikistan, shows a rapid urban development not only with respect to population but also regarding the spatial development. Dushanbe’s population was 817,000\textsuperscript{35} in 2017 and is forecasted to be 1,050,000 by 2040\textsuperscript{36}. The city covers about 127 km\textsuperscript{2}. The total population by Territorial Council/district and the population served by water supply in these areas are given in Table 1.

5. However, the urban planning and urban infrastructure cannot keep up with this rapid development and its challenges. Some areas have limited, unsatisfactory or no access to urban infrastructure and services. This is especially the case with the water supply and sanitation services, which are under the responsibility of the State Unitary Enterprise SUE Dushanbe Vodokanal (DVK). Therefore, the City of Dushanbe (Dushanbe) approached the Cities Development Initiative for Asia (CDIA) to conduct a project preparation study (PPS) for the water supply and sanitation sub-sectors. The PPS formed the basis for the DWSSP which was proposed by the Asian Development Bank (ADB). The planned interventions shall complement the World Bank’s efforts in the water supply sector during the last 15 years. As a first step, ADB intends to partially rehabilitate the urban water supply system in Shohmansur district located in the southeast of Dushanbe as well as rehabilitate/re-construct the South Collector sewer which serves the south-eastern part of Dushanbe.

6. The current water supply services are impaired by high physical and commercial water losses due to overaged infrastructure, incomplete and inaccurate registration of customers, and inadequate billing and collection practices. The sanitation situation is characterized by a worn-out sewerage network covering only about 60% of the city, a dysfunctional collector system with insufficient capacity, and ineffective wastewater treatment due to the critical condition of infrastructure and a highly diluted wastewater. Based on the water supply and sanitation road maps prepared by the PPS, a priority project was identified which aims at reducing NRW in Shohmansur district and at improving the sanitary condition in the south-eastern part of Dushanbe. This priority area was chosen due to the; (i) urgent need for water service improvements; (ii) availability of a reliable water source of good quality to supply the area; (iii) fact that the area contains a good mix of single house areas and areas with multi-story buildings; (iv) clear interfaces to the remaining water supply network; and (v) urgent need for rehabilitation of the sewerage network and the collector system. There is a clear need for institutional capacity development to improve the utility’s level of services and to remediate the current deficiencies such as; (i) an incomplete computerized financial management system and inaccurate billing database; (ii) inadequate business planning not allowing for long-term planning and forecasting of revenues, expenditures and investments; (iii) an incomplete network information system for water supply and sewerage systems; (iv) an insufficiently competitive salary structure; and (v) the absence of a centralized customer service center. Moreover, current tariffs for water and wastewater services do not achieve cost recovery and the devaluation of the national currency within the last 10 years amounts to more than 60%, leading to significant exchange rate losses on DVK’s loans in foreign currencies.

C. Consulting Services

7. There will be two major consulting services consultancy packages. They are: (i) Project Management, Design and Supervision Consultants (PMDSC) and (ii) Institutional Strengthening

\textsuperscript{35} Source: Statistic Report 2018, 2017 figures
\textsuperscript{36} Source: Master plan of Dushanbe 2017
and Capacity Development Consultants (ISCDC). There will also be some smaller individual consulting packages. All consultants will coordinate with and support the Project Implementation Group (PIG) and DVK in building its overall capacity and implementing the project.

8. The PMDSC will have expertise in: (i) project management; (ii) engineering, design of water supply systems, and construction supervision; (iii) geotechnical, structural, mechanical, and electrical engineering; (iv) procurement and contract administration; (v) technical training on nonrevenue water (NRW), water balance; (vi) supervisory control and data acquisition (SCADA), geographical information systems, monitoring, and evaluation systems; (vi) ADB’s requirements for procurement, social and environmental safeguards; (xiv) gender and development, (xv) implementation and monitoring; and (xvi) behavior change and community awareness.

9. The ISCDC will have expertise in: (i) corporate business planning for water utilities; (ii) human resource management, organizational structuring and performance benchmarking; (iii) information system management related to water billing, collection, accounting and reporting especially related to data inputs from a smart metering approach; (iv) financial system management related to implementation of a district metering approach; (v) customer care services for water utilities; (vi) communication and behavior change related to demand management and water conservation.

10. This Terms of Reference relates to the ISCDC and will assist the DVK to implement Output 2. The PMDSC will be hired under a separate contract. However, there will be a need for close coordination between both consulting groups especially with regard to the technical, management, institutional and financial training related to the management and operation of the smart metering and district metering area approaches. Technical training on DMA operation, leakage detection and water meter calibration will be undertaken under the PMDSC whereas management, institutional and financial training will be undertaken under the ISCDC.

D. Scope of Services

1. Overview

11. The ICDC will assist DVK in implementing Component 2 – Sustainable business model and institutional capacity developed. This will comprise preparation and implementation of the following activities:

12. Corporate Business Plan. DVK has commitment to managerial reforms to ensure sustainable service delivery and has undertaken certain institutional development activities under earlier World Bank support which is ongoing. However, a comprehensive organization-wide Business Plan that would cover technical, investment planning, operational, institutional organizational restructuring and human resource management has not yet been developed and is critical in terms of the technical, management, financial and human resource requirements of the proposed network management system incorporating district metering areas and smart metering. There is a need to develop a performance based corporate business plan covering 5 years which may be updated on an annual basis. The Business Plan will cover organizational structure, operation and maintenance efficiency, financial management and accounting sustainability. It will be effectively a Road Map to be adopted by DVK and Dushanbe City. The business plan will be supported by other components of this consultancy including an incentive system for personnel at enterprise, division and individual level.
13. Accountability and incentive mechanism established with a performance benchmarking matrix. To improve performance of DVK staff to effectively manage, operate and maintain water and sewerage services, especially with updated technology, to attract new staff and to reduce staff turnover, it is intended to implement an accountability and Incentive mechanism for DVK staff. Roles and responsibilities for staff will be reviewed on the basis of their accountability to customers for delivery of services. A range of indicators will be benchmarked (such as NRW, water quality, energy efficiency, customer response, billing and collection ratios, customer satisfaction, accounts receivable etc) and software developed such that performance can be measured and reported on a regular basis. This performance benchmarking will be used to develop the incentive program for the employees at enterprise, division and individual level. In this way all employees will be given roles and responsibilities, targets and incentives.

14. Smart management system enhanced for operational efficiency and seamless integration of customer database, billing, collection, accounting and reporting. The introduction of district metering areas with smart bulk meters, smart household meters and SCADA which will enable water production and consumption data to be transmitted to a central location will require software to be developed such that the customer database, billing, collection, accounting and reporting systems can be configured to respond to the availability of data that will enable more efficient operation. This sub-component will evaluate the current systems and develop specifications for software to link the financial systems to the data available from new smart systems. The consultants will prepare tender documentation for suppliers to develop and provide the software.

15. Nonrevenue water management system operationalized with installation of SCADA for new network management practices for 18 DMAs using districts equipped with flow meters, smart meters for household service connections, active leaks detection, and calibration of meters. Managing DMAs professionally and sustaining the low level of nonrevenue water is a new challenge for DVK. For securing efficiency gains, capacity enhancement in post-commissioning O&M of DMAs will be highly important, as the DMAs are handed over to operational staff under the on-going projects. The consultant will prepare, implement, and institutionalize (i) a sustainable nonrevenue water reduction plan for commercial losses, (ii) operating procedures for staff responsible for implementing the plan and (iii) upgraded relevant staff training. This will be conducted in consultation with the PMDSC who will provide technical training related to physical losses such as leak detection and water meter calibration. The ISCDC will be responsible for support related to reducing commercial losses.

16. Customer care service standards and behavior change communication on water conservation and smart metering developed. A recent survey within the project area conducted by the project preparation team indicated that only 28% of customers were satisfied with their current water supply service. This indicates that even when improved services are available through infrastructure improvements, there will be a need to change customers’ perceptions regarding the service delivered by DVK. The Consultant will review the current customer care approaches adopted by DVK, including performance indicators and recommend and implement changes in approach. Furthermore, notwithstanding the extremely high NRW, water consumption remains very high and needs to reduce to sustainable levels within industry norms. This should be partially achieved through demand management, including pricing but also needs an attitude change on the part of consumers. In addition, the advantages to the customer through introduction of smart metering needs to be fully explained to garner support for the approach amongst customers. To address these issues, the Consultant will work closely with the DVK Communication team to review the existing communication approaches and develop and implement new communication material and approaches.
2. Activities

The main activities of the ISCDC are described below. The description may not be exhaustive, and the activities shall not necessarily be limited to those described.

Corporate Business Plan

(i) Review the existing investment, financial management, human resource development plans of DVK plans and corporate business plans of other relevant water utilities.

(ii) Analyze the performance of DVK through metric benchmarking methods by comparing with the performance indicators of water utilities in other countries.

(iii) Identify the current and potential challenges and bottlenecks of DVK to deliver the quality service delivery.

(iv) Prepare draft corporate business plan (The Business Plan) of DVK

(v) The Business Plan should be consistent with any Performance Agreement between DVK and the City of Dushanbe.

(vi) The Business Plan should set the performance targets and cover existing sub-plans (tariff adjustment plan, investment plan, financial plan, and human resources development plan). In addition, the Business Plan also should include the sub-plan on the NRW reduction, water quality monitoring plan, and demand management plan.

(vii) The tariff adjustment plan will be determined by DVK and is not part of this TOR but should be such that DVK is financially sustainable, and each class of customers can afford the tariff.

(viii) The investment plan should include not only the new project but also regular replacement of aging fixtures as preventive measures, based on any asset management plan or other available documents.

(ix) The financial plan should be complementary with planned investment, human resources, customer base, tariff adjustment, and debt services. It should be based on long-term and mid-term financial projection.

(x) The human resources development plan should include training modules for sustainable DMA management assisted under DWSSP

(xi) Assist DVK in institutionalizing and implementing the Business Plan and also monitor the implementation with DVK management

Accountability and incentive mechanism for employees

(i) With reference to the Business Plan being developed under 2.2.1, confirm functional organizational structure of DVK and roles and responsibilities of divisions and positions.

(ii) Review the current service standards of DVK to their customers and review as appropriate in consultation with DVK.

(iii) Review job descriptions of individual employees and update their roles and responsibilities in consultation with DVK management. Identify the level of accountability of each employee in meeting service standards for DVK.

(iv) With reference to other, similar utilities in the region, develop performance indicator benchmarks for the organization and time-bound targets for improvement. Performance indicators may include NRW, water quality, energy efficiency, customer response, billing and collection ratios, customer satisfaction, accounts receivable amongst other. Agree the performance benchmark matrix with DVK.
In consultation with DVK, apply the performance indicators and targets as appropriate at division and individual level and develop a structure to enable incentives to be provided to employees based on meeting the targets at enterprise, division and individual levels. Ensure that the approach has the full agreement of DVK management and the City of Dushanbe.

Together with DVK human resource management staff, conduct consultations with employees on the incentive structure and training of the HRM staff in applying the incentive mechanisms.

Assist the human resources department of DVK as required to apply the accountability and incentive mechanism through amendment of their conditions of employment.

**Smart management system**

(i) Conduct detailed review of the existing DVK customer database, billing, collection and reporting systems.

(ii) Review and understand the proposed project interventions involving establishment of DMAs, smart bulk meters, smart household water meters and the extent of the SCADA system to transmit information and water production, delivery and consumption to a centralized location.

(iii) Agree with DVK in consultation with the Project Implementation Group (PIG) and the PMDSC on the data and reporting needs across the different divisions within DVK.

(iv) Prepare concept of a smart management system utilizing data from the smart metering system that will meet the needs of the DVK divisions, in particular integrating the customer database with the billing, collection and accounting systems. Advise DVK on necessary modifications to existing systems, including the customer database, that will be required for the effective operation of the smart management system.

(v) Agree with DVK management on the concept design of the smart management system.

(vi) Prepare specifications and tender documentation for the development of the smart management system software. Ensure the specification include a significant training component to be provided by the supplier to DVK staff.

(vii) Liaise with the PIG procurement team for the tendering process and assist with evaluation of tenders.

(viii) Supervise the design, installation and commissioning of the smart management system within DVK.

(ix) In addition to training provided by the software supplier, provide on-the-job training to DVK staff in implementation of the system.

**Non-revenue water management system established**

The activities to be undertaken by the Consultant under this sub-component will carried out in coordination with the technical consultants assigned under the PMDSC but will primarily related to non-physical or commercial loses.

(i) Conduct a brief review of any previous studies/reports and understanding the current practices of nonrevenue water assessment and management in consultation with several stakeholders including DVK, other consultants and donor agencies.

(ii) Perform assessment of commercial losses as a baseline study, including theft, underpayment, and nonpayment; attitudes of men and women toward paying for water services. Prepare a profile of cities water service customers (sex-disaggregated as appropriate) as well as procedures for according water connections, metering, and
billing and collection systems. Describe the basic procedure for (i) service connection (ii) preparing, issuing, and collecting a bill for water service (iii) estimating water consumption for un-metered customers (iv) procedure for dealing with under-payment or non-payment. Ascertain the efficiency of billing collection system identify gaps and suggest steps for improvement with financial projections. Prepare a statement and analysis (of the reasons / nature) for demand collection arrears.

(iii) Analyze the current constraints of DVK in terms of organization structure, incentive mechanism, capacity, and budget to orient DVK management and staff to sustainable DMA’s operation.

(iv) Examine good practices and lessons of sustainability of DMA management in other countries and contextualize them into DVK particularly with regard to water loss assessment related to commercial losses.

(v) Through the Project Implementation Group, coordinate with the technical consultants of the PMDSC to prepare a draft water loss reduction plan which indicates; clear long-term and annual targets of nonrevenue water; optimal DMA based organizational structure; incentive mechanisms, asset management plan, budget requirement, and training plan.

(vi) Assist DVK in institutionalizing and implementing the water loss reduction plan and monitor the implementation with DVK management.

(vii) Coordinate as necessary with the PMDSC technical consultants in the preparation of manuals for DMA operation, especially as related to non-technical inputs. As well as engineering requirements, the manuals should include the activities required by revenue officers, billing and collection staff and other relevant financial and administrative personnel

(viii) Assist DVK in institutionalizing and implementing water loss reduction plan. The ISCDC consultants should monitor the implementation with DVK management.

(ix) Develop and implement training modules related to the non-technical management aspects of the water loss reduction plan and the efficient operation of the non-revenue water management system.

(x) Monitor the implementation and feedback lessons of trainings to DVK for future improvement of training module

(xi) Assist DVK in institutionalizing and internalizing to plan and implement the training without external assistance.

Customer care service standards and behavior change communication on water conservation and smart metering

(i) Review the current customer care system within DVK including the system for receiving and responding to complaints and feedback provided to customers.

(ii) Review the activities of the DVK communication team including available materials and approaches to information dissemination.

(iii) Review the communication strategies developed by the ADB project preparation team and determine how to incorporate these strategies into the activities of the DVK communication team. Liaise with those involved in the development of the ADB project preparation communication strategies, including the Youth Group of Tajikistan (YGT).

(iv) Consider the current staffing and roles and responsibilities of the DVK customer care group and the communication team and make recommendations for any restructuring of these groups.

(v) Based on the review of the current DVK customer care system, make recommendations for improved approaches and, after obtaining approval from DVK
management, assist DVK to implement these improvements. Establish a system to enable regular feedback from customers on the performance of DVK in the provision of water supply and sanitation services.

(vi) In consultation with the DVK communication team, develop materials to communicate with customers on the advantages of the smart metering approach being implemented under the project. Assist the DVK communication team to disseminate this information to customers. Obtain feedback from customer responses and communicate this to the system designers.

(vii) From available data or from additional surveys if necessary, analyze water consumption patterns for various groups of consumers and, in consultation with the technical personnel, identify areas where water consumption may be reduced. With the DVK communication team, develop approaches and materials to advise consumers on advantages and means of consuming water and alternative approaches for reducing high water consumption areas such as irrigation of gardens.

(viii) In all activities obtain feedback from customers to enable modification of messages as appropriate.

(ix) Provide training to DVK customer care and communication teams on techniques of dealing effectively with communities.

3. Consultants Requirement

18. The engagement period of the consultant services is 36 months. A total of 102 person-months includes (i) 39 person-months of the International key experts, and (ii) 63 person-months for the National key experts. The estimated staffing and expertise person-months requirements per component are summarized below:

<table>
<thead>
<tr>
<th>Position</th>
<th>Duration (person-months)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International Consultants</strong></td>
<td></td>
</tr>
<tr>
<td>Team Leader/Corporate Business Planning Specialist</td>
<td>18</td>
</tr>
<tr>
<td>Asset Management Specialist</td>
<td>6</td>
</tr>
<tr>
<td>Financial Management Specialist</td>
<td>6</td>
</tr>
<tr>
<td>Communication Specialist</td>
<td>3</td>
</tr>
<tr>
<td>IT Specialist</td>
<td>3</td>
</tr>
<tr>
<td>Human Resource Management Specialist</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sub-Total International Consultants</strong></td>
<td><strong>39</strong></td>
</tr>
<tr>
<td><strong>National Consultants</strong></td>
<td></td>
</tr>
<tr>
<td>Deputy Team Leader/Training Specialist</td>
<td>24</td>
</tr>
<tr>
<td>Financial Specialist</td>
<td>12</td>
</tr>
<tr>
<td>IT Specialist</td>
<td>12</td>
</tr>
<tr>
<td>Communication Specialist</td>
<td>6</td>
</tr>
<tr>
<td>Human Resource Management Specialist</td>
<td>9</td>
</tr>
<tr>
<td><strong>Sub-Total National Consultants</strong></td>
<td><strong>63</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>102</strong></td>
</tr>
</tbody>
</table>
4. Terms of Reference for Consultants

International Consultants

a) Team Leader/Corporate Business Planning Specialist (18 person-months)

Tasks & Responsibilities

The Team Leader/Corporate Business Planning Specialist will manage and supervise the overall services of the ISCDS and provide support to the Project Implementation Group (PIG) for preparing, institutionalizing, and implementing sustainable DMA management and a 5-year corporate business plan. He/she will also take a leading role for the capacity building program. He/she will provide advice and assistance to DVK management for its institutional development. He/she will also be responsible for aggregating the required data from the other experts for finalizing the draft water loss reduction plan and the 5-year corporate business plan.

Duties and tasks as the Team Leader will include the following:

(i) Manage, coordinate and supervise all services for the assignment to ensure that (a) inputs and activities of both the international and national consultants are of high quality and effective; and (b) all consulting components and project components are fully integrated and properly coordinated.

(ii) Responsible for all reporting on the project in a timely manner and updating the project schedule.

(iii) Liaise with the DVK/PIG on a day to day basis and liaise with ADB.

(iv) Responsible for coordinating all activities pertaining to this assignment including facilitating preparation of all reports and documents.

(v) Provide guidance and valuable inputs for finalizing the water loss reduction plan and the 5-year corporate business plan including sub-plans.

(vi) (vi) Facilitate the mid-term and project completion reviews, as well as all intermediate reviews; and

(vii) Coordinate with the Gender and the Social Safeguards Specialists of the PIG and the PMDSC to ensure the gender responsiveness of all activities and services carried out.

Duties and tasks as Corporate Business Management Specialist will include the following:

(i) Manage all aspects of implementation of services of preparing the Corporate Business Plan, including (a) overall planning, scheduling, management and coordination; (b) monitoring progress and costs; and (c) project reporting.

(ii) Develop the corporate business plan by aggregating all sub plans such as (i) Human resource development plan (ii) Investment plan (iii) Financial plan (iv) water loss reduction plan (v) water quality monitoring plan (vi) demand management plan etc.

(iii) Coordinating with various bodies and individuals, including local authorities, government agencies, clients, contractors, residents, suppliers, technical experts and other consultants for discharging the obligation under the assignment.

(iv) Develop and train the DVK staff and other stakeholders to maintain and develop systems for all sub plans proposed under the corporate business plan.
Qualifications and Experience

The Team Leader/Corporate Business Management Specialist should have master's degree in economics/finance/business management/engineering or related field with 15 years working experience in any public utility services entity of which 5 years in preparation of business plans, asset plans, implementation, operation and maintenance of water supply systems.

b) Asset Management Specialist

Tasks & Responsibilities

The Asset Management Specialist will review the current practices of asset management being undertaken within DVK, recommend the additional activities required to develop an appropriate asset management plan, incorporate the asset management development process into the five-year corporate business plan and conduct training on asset management practices for DVK management and staff. The main duties and responsibilities of the Asset Management Specialist, in addition to above stated general requirements, will be to (not exhaustive):

(i) Review the current asset management practices within DVK and make recommendations on the activities required to develop an appropriate asset management system.

(ii) Review the current GIS based asset register for both water supply and wastewater assets and comment on its suitability as an asset register and as the basis of an asset management system.

(iii) Liaise with the Financial Management Specialist Identify the current asset valuation based on the asset register and recommend any amendments to the process of asset valuation.

(iv) Identify other activities required to be undertaken by DVK to develop a fully operational asset management system and liaise with the Corporate Business Planning Specialist to include a time-bound program for the development of a functional asset management system on the five-year corporate business plan.

(v) Determine the organisational structure required to implement an asset management system and liaise with the HRM Specialist for the this to be incorporated into the overall DVK organisational structure.

(vi) Conduct training of DVK senior management on the principles of asset management and how this can be utilised to improve financial and technical performance of DVK

Qualifications and Experience

The Asset Management Specialist should have master’s degree engineering or related field with 15 years working experience some of which should have been in the operation and maintenance of water supply and wastewater systems with a public utility services entity. The Specialist should have at least 5 years’ experience in the establishment and implementation of asset management plans for a public utility.
c) Financial Management Specialist

Tasks & Responsibilities

The Financial Management Specialist will work on upgrading financial management model and on implementing the financial / investment plan in the corporate business plan. She/he will assist DVK in developing and implementing the five-year corporate business plan, including the investment plan, financial plan, tariff adjustment plan (prepared by others) and human resource development plan. The platform financial model will be consistent with planned capital investment, human resources, customer base, tariff adjustment, and debt service. She/he will also work closely with other specialists to update the financial model which will be used for financial projections and make it simple and user friendly so that DVK staff can utilize it easily. She/he will also assist DVK in formulating concrete action plans to materialize the improvement of financial management in the five-year corporate business plan and develop a system to monitor progress of various plans, and work with the Human Resource Specialist to recommend an incentive scheme to encourage staff to follow the plans and provide hands-on trainings to relevant DVK staff.

The main duties and responsibilities of the Financial Management Specialist, in addition to above stated general requirements, will be to (not exhaustive):

(i) Make an in-depth study of the accounting practice of DVK.
(ii) Access all previous studies/recommendations and the financial model and five-year corporate business plan developed under DWSSP, in order to ascertain the strengths, weaknesses and opportunities for the overall improvement and updating and of DVK’s accounts practice as an integral part of the entity’s overall financial management.
(iii) Review work done by others in evolving a sustainable tariff structure.
(iv) Refine the current system/evolve a better system for the preparation of DVK’s annual budget.
(v) Identify shortfalls/ flaws in revenue generation, billing and collection; Formulate an efficient financial monitoring system for DVK.
(vi) Review budgetary control process, design budget procedures and budget formats at DVK so as to prepare the sub plans under the updated business plan.
(vii) Review the Financial Management System and Asset Management System of DVK and make recommendations for optimal integration in the business plan. In particular, assist the accounts section closely with the IT expert in identifying the specific bottlenecks and providing recommendations for improving the operation of the computerized accounting software and integration of billing software with the accounting software; and improving the electronic link of financial information of individual projects with the financial reporting system.
(viii) Identify the weaknesses in the current system and recommend an improved debt management system for DVK.
(ix) Contribute to training of DVK staff in financial management with the DTL/Training Specialist.
(x) Contribute to computerization of financial practices, importantly in the documentation of DVK’s financial and commercial activities.
(xi) Perform additional tasks assigned by the Team Leader.
Qualifications and Experience

The Financial Management Specialist shall be a qualified Chartered Accountant / Certified Public 
Accountant/Post graduate in Public Finance. She/he must have 15 years working experience in 
major development projects, including at least five years' experience in a water utility.

d) Communication Specialist

Tasks & Responsibilities

The Communication Specialist will be responsible for (i) preparing and implementing a public 
awareness campaign in demand control (water conservation), hygiene, and health in close 
coordination with the firm who will engage in the campaign under the project; and (ii) preparing, 
institutionalizing, and implementing a demand control plan under the corporate business plan. 
The Communication Specialist will plan and design the campaign and assist DVK in implementing 
the campaign by engaging media firms and NGOs. The Communication Specialist will also 
provide support to DVK to gain public support for the Project and DVK in general as well as assist 
other experts in handling information disclosure and social interactions. 
In addition to above activities, the Communication Specialist will constantly liaise with the head of 
Public Relations unit of DVK and involve him in appropriate areas of his work under the 
assignment.

The main duties and responsibilities of the Communication Specialist, in addition to above stated 
general requirements, will be to (not exhaustive):

(i) Assist the Team Leader in supervising, guiding, and monitoring the firm to implement 
the awareness raising and mass media campaign under the project that shall, as 
well, entail developing educational materials and to engage and coordinate field 
workers in conducting community meetings and household visits.

(ii) Design programs and develop appropriate information materials for public 
awareness campaigns including mass-media and brochures and display boards 
before, during and after rehabilitation work in the supply zones. It should ensure the 
views of women and vulnerable groups are given full consideration. The program 
will cover:

(a) efficient domestic water usage and prevention of wastage 
(b) understanding the negative aspects on water quality and other users on 
making an illegal connection.
(c) understanding the negative aspects and illegality of using water pumps to 
withdraw water from the DVK supply line.
(d) how to read meters that will be installed and how to understand the new bills, 
which will be sent out in due course along with the improved method of 
payment.
(e) communication of the benefits of grievance redress procedures to eradicate 
overcharging with customers.
(f) raising the public consciousness in hygiene and health through educating 
proper daily practice.

(iii) familiarize customers with the DVK's service provision and DVK-customer working 
arrangements.
(iv) mobilize urban communities to be supportive to construction-time and/or construction-stemmed inconveniences which the implementation of the project components may bring about.

(v) assist DVK’s PR cell in overseeing and managing the customer grievance mechanism for the duration of the Project; through the stated activities, make positive efforts of improving DVK’s public relations and image and in the process, establish some transparency among the public regarding DVK’s modus operandi.

(vi) prepare reports on the issues, progress and contribute to the preparation of routine/specific reports.

(vii) Coordinate with the PIG and PMDSC Gender and the Social Safeguards Specialist to ensure the gender responsiveness of all activities and services carried out; and

(viii) Carry out any other relevant responsibilities assigned by the Team Leader.

**Qualifications and Experience**

The position of Communication Specialist should have a degree in Sociology/Anthropology/Social Welfare, coupled with a Masters in any of the above or related areas. The Communication Specialist shall have at least 10 years’ experience in public information campaigns.

e) IT Specialist

**Tasks & Responsibilities**

The IT Specialist will be responsible for preparing specifications for the smart information management system to be developed to improve operational efficiency and provide a seamless integration of customer database, billing, collection, accounting and reporting as well as assessing the need to upgrade hardware facilities required to run the new smart information management system. The IT specialist will train DVK staff to enable them to maintain the system by themselves or arrange outsourcing of the maintenance. If required and helpful, he/she may arrange a study tour for key DVK staff to see and learn from successful water utilities for the use of IT technology. In addition to the above responsibilities, the IT Specialist will:

(i) Review and assess the IT requirements of the project as well as DVK as a whole.

(ii) Assess the need of DVK-customer interaction and establish systems to improve the level and extent of such interaction in the organizations image building interest.

(iii) Determine the software needs of DVK given the introduction of smart meters and SCADA such as to enable the development of a smart information management system to improve operational efficiency and provide a seamless integration of customer database, billing, collection, accounting and reporting.

(iv) In coordination with the PIG Procurement Specialist, develop specifications and bidding documents for development of a new smart information management system, evaluate the bids and supervise the development of the software.

(v) Review and assess GIS set up of DVK and recommend improvement and strengthening of the set up for better management of development and O&M aspects of DVK’s services.

(vi) Assist the accounts section in identifying the specific bottlenecks and providing recommendations for improving the operation of computerized accounting software and integration of billing software with the accounting software; and
improving the electronic link of financial information of individual projects with financial reporting system.

(vii) Assist DVK in design procurement specifications for IT equipment including those for SCADA with other consultants.

(viii) Design and conduct IT related training to project and DVK staff.

(ix) Coordinate with the PIG and PMDSC Gender and Social Safeguards Specialist to ensure the gender responsiveness of all activities and services carried out; and

(x) Carry out any other relevant responsibilities assigned by the Team Leader.

Qualifications and Experience

The IT Specialist will have a degree in Computer Engineering / IT / Communication Science, preferably topped by an advanced degree in relevant area. He/she must have at least five years' professional experience, preferably in utility companies. Experience in installation, operation and maintenance of SCADA will be considered as added advantages.

f) Human Resource Management Specialist

Tasks & Responsibilities

(i) With reference to the Business Plan being developed under 2.2.1, confirm functional organisational structure of DVK and roles and responsibilities of divisions and positions.

(ii) Review the current service standards of DVK to their customers and review as appropriate in consultation with DVK.

(iii) Review job descriptions of individual employees and update their roles and responsibilities in consultation with DVK management. Identify the level of accountability of each employee in meeting service standards for DVK.

(iv) With reference to other, similar utilities in the region, develop performance indicator benchmarks for the organisation and time-bound targets for improvement. Performance indicators may include NRW, water quality, energy efficiency, customer response, billing and collection ratios, customer satisfaction, accounts receivable amongst other. Agree the performance benchmark matrix with DVK.

(v) In consultation with DVK, apply the performance indicators and targets as appropriate at division and individual level and develop a structure to enable incentives to be provided to employees based on meeting the targets at enterprise, division and individual levels. Ensure that the approach has the full agreement of DVK management and the City of Dushanbe.

(vi) Together with DVK human resource management staff, conduct consultations with employees on the incentive structure and training of the HRM staff in applying the incentive mechanisms.

(vii) Assist the human resources department of DVK as required to apply the accountability and incentive mechanism through amendment of their conditions of employment.

Qualifications and Experience
An HRM professional with at least 10 years work experience in the field of human relations and organizational development. Proven capability to develop HR strategies, including performance-based incentive structures within the context of a Government controlled utility company. First-hand experience of training needs analysis and the development of training programs is required. Work experience in developing countries is desirable. Fluency is expected in both written and spoken English with strong communication as well as computer literacy.

**National Consultants**

**g) Deputy Team Leader/Training Specialist**

**Tasks & Responsibilities**

As Deputy Team Leader:

(i) Assist the Team Leader to manage all aspects of project implementation, including (a) overall project planning, scheduling, management and coordination; (b) monitoring progress and costs; and (c) project reporting.

(ii) Assist the Team Leader to coordinate the work of the national consultants and liaison with PIG/DVK, ADB and other external agencies.

(iii) Liaising with various bodies and individuals, including local authorities, government agencies, clients, contractors, residents, suppliers, technical experts and other consultants.

(iv) Act as Team Leader and run the day to day affairs of the consultancy in the absence of the Team Leader.

(v) Coordinate with the PIG and PMDSC Gender and Social Safeguards Specialist to ensure the gender responsiveness of all activities and services carried out.

(vi) Assist the Team Leader in the preparation of all reports.

As Training Specialist

The Training Specialist will assist Team Leader and other experts in assessing the training needs, developing overall training modules, consolidating them into human resources development (HRD) plan under the 5-year corporate business plan, and supervising the implementation of the training.

In addition to above stated job requirement, responsibilities will additionally entail (not limited to):

(i) Develop the overall training modules including sustainable DMA management (in conjunction with the PMDSC) and any other needs, and prepare an HRD plan.

(ii) Develop a set of training manuals.

(iii) Develop and refine all syllabuses and training materials. Include training of in-house design capacity for preparing future DMAs within DVK.

(iv) Assist DVK in implementing overall training modules.

(v) Assist DVK to plan and implement the trainings without external assistance.

(vi) Coordinate with the PIG and PMDSC Gender and the Social Safeguards Specialist to ensure the gender responsiveness of all activities and services carried out; and

(vii) To perform any other tasks assigned by the Team Leader.
Qualifications and Experience

The position will require a degree in management / social sciences / finance, topped up by an MBA (majoring in HRD/ HRM/ Finance) / Masters or equivalent in any of the above or related area(s). He/she must have at least 15 years’ experience in management, training including five years in a water utility.

h) Financial Specialist

Tasks & Responsibilities

The national Financial Specialist will assist the international Financial Specialist in undertaking the Tasks and Responsibilities outlined under 2.4.3.

Qualifications and Experiences

The financial management expert shall be a qualified Chartered Accountant / Certified Public Accountant/Post graduate in Public Finance. She/he must have 5 years working experience in major development projects.

i) IT Specialist

Tasks & Responsibilities

The national IT Specialist will assist the international IT Specialist in undertaking the Tasks and Responsibilities outlined under 2.4.5.

Qualifications and Experiences

The national IT expert will require a degree in Computer Engineering or Information Technology (IT) or Communication Science, preferably topped by an advanced degree in relevant area. He/she must have at least five years’ professional experience. Experience in installation, operation and maintenance of SCADA will be considered as added advantages.

j) Communication Specialist

Tasks & Responsibilities

The national Communication Specialist will assist the international IT Specialist in undertaking the Tasks and Responsibilities outlined under 2.4.4.

Qualifications and Experiences

The national Communication Specialist should have a degree in Sociology/ Anthropology/ Social Welfare, coupled with a Masters in any of the above or related areas. The Specialist shall have at least 5 years’ experience in public information campaigns.

k) Human Resource Management Specialist
Tasks & Responsibilities

The national Human Resource Management Specialist will assist the international Human Resource Management Specialist in undertaking the Tasks and Responsibilities outlined under 2.4.6.

Qualifications and Experience

An HRM professional with at least 5 years work experience in the field of human relations and organizational development. Proven capability to develop HR strategies, including performance-based incentive structures within the context of a Government controlled utility company. First-hand experience of training needs analysis and the development of training programs is required.

5. Reporting Requirements Time Schedule and Deliverables

Expected Time Schedule:

19. The estimated total duration of consulting services will be 36 months. The expected implementation schedule is as shown below.

<table>
<thead>
<tr>
<th>Key Activities</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commencement of Consulting Services</td>
<td>Q4 2019</td>
</tr>
<tr>
<td>Corporate Business Plan</td>
<td>Q1 2020 to Q3 2021</td>
</tr>
<tr>
<td>Accountability and Incentive System</td>
<td>Q1 2020 to Q3 2021</td>
</tr>
<tr>
<td>Smart Management Information System</td>
<td>Q2 2020 to Q4 2021</td>
</tr>
<tr>
<td>Non-Revenue Water Management System Established</td>
<td>Q3 2020- Q4 2022</td>
</tr>
<tr>
<td>Customer Care and Communication Systems</td>
<td>Q3 2020- Q4 2022</td>
</tr>
</tbody>
</table>

Reports and Documents/Deliverables

20. Within the scope of consulting services, the Consultant shall prepare and submit reports and documents to the Head Project Implementation Group as shown below

The Consultant shall provide electronic copy of each of these reports

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Report</th>
<th>Timing</th>
<th>No. of Copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consulting Services</td>
<td>Inception Report and Work Plan</td>
<td>1.5 months</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Quarterly Progress Reports</td>
<td>Every 3 months</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Project Completion Report</td>
<td>Q4 2022</td>
<td>5</td>
</tr>
<tr>
<td>Corporate Business Plan</td>
<td>Draft Business Plan</td>
<td>Q2 2021</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Final Business Plan</td>
<td>Q3 2021</td>
<td>5</td>
</tr>
<tr>
<td>Accountability and Incentive System</td>
<td>Outline of Time-Bound Performance Benchmarks</td>
<td>Q3 2020</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Accountability and Incentive Mechanism Structure</td>
<td>Q1 2021</td>
<td>5</td>
</tr>
<tr>
<td>Smart Management Information System</td>
<td>Concept design of Smart Information Management System</td>
<td>Q4 2020</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Report on System Commissioning</td>
<td>Q4 2021</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Water Loss Reduction Plan Commercial Losses)</td>
<td>Q3 2021</td>
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<td>Training Modules</td>
<td>Q3 2021-Q3 2022</td>
<td>Depends on attendees</td>
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<tr>
<td>Customer Care and Communication Systems</td>
<td>Report on Customer Care Improvements</td>
<td>Q4 2021</td>
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<td>Communication System and Materials</td>
<td>Q2 2021-Q3 2022</td>
<td>Depends on audience</td>
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6. **Client’s input and Counterpart services and Facilities**

DVK will provide to the Consultant assistance which include making available all relevant documents, counterpart staff and assistance for obtaining work permit, visa and other similar documents as well as exemption and privileges, if any.

Office space, Communication facilities (telephone, access to internet Services), Computers, survey equipment and relevant documents to be provided by the consultant. Necessary office equipment, such as computers; computer peripheral equipment, desks CAD should be procured under the Consulting services budget.
Terms of Reference
Procurement Consultant (1 International Consultant, 2-person months, intermittent).

The consultant shall assist and work closely with the Procurement Specialist of the Project Implementation Group and the State Unitary Enterprise Dushanbevodokanal (DVK) Supply Division and carry out assigned duties related to the following functions of the Procurement Consultant, in relation to the evaluation of bids for proposed civil works and goods. The consultant will be recruited following individual consultant selection method.

The Consultant shall be responsible for:

(i) Assisting PIG and DVK in preparation of bidding documents in accordance with ADB's Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB’s borrowers ((2017, as amended from time to time), including the commercial and technical requirements of the bidding documents, such that they are ready to be issued;

(ii) Assisting PIG and DVK in issuing of bidding documents, organizing site visits, assisting pre-bid meetings, responding to requests for clarification on bidding documents;

(iii) Joining Dushanbe City Tendering Committee Working Group with PIG and DVK for the evaluation of the bids for the procurement of goods, works and services as foreseen under the procurement plan, explaining ADB’s policy and regulations as needed to ensure the evaluation is conducted in compliance with ADB’ requirement.

(iv) Attending meetings and reporting as required to Dushanbe City Tendering Committee, PIG and DVK;

(v) Supporting Dushanbe City Tendering Committee, PIG and DVK in the preparation and finalization of bid evaluation reports (BER) based on commercial and technical factors, as well on contract agreements;

(vi) Supporting PIG and DVK in responding to ADB’s comments on Bid Documents and BER.

(vii) Supporting PIG and DVK on other procurement related tasks as required;

(viii) Assisting PIG and DVK in negotiating and finalizing contract;

(ix) Conducting training and skill development sessions and knowledge sharing on procurement for staff of the PIG and DVK;

(x) Carrying out any other procurement related work assigned by the PIG.

Qualification Requirements.

The expert should, at the minimum, have: (i) bachelor level graduate in Economics, Engineering, Business, or Management; (ii) public procurement related working experience of at least 10 years; (iii) extensive knowledge on both Multilateral Development Bank and Government procurement policies and procedures; (iv) experience on working ADB projects is preferable, and (v) must be fluent in both speaking, reading and writing in English, Russian will be preferable.
Developing a Business Model for DVK: A Strategic Approach to Water and Wastewater Utility Planning for Sustainability

**Background.** Like many of its counterparts in cities across the world, DVK is experiencing mounting pressure to improve operational efficiency and financial performance. Urban migration from the rural areas combined with an influx of returning overseas migrant workers has significantly increased demand, putting additional stress on its water and wastewater systems which are already aging and in disrepair. A persistent lack of maintenance and capital underinvestment over the years have resulted in more broken pipelines, higher levels of contamination, and unaccounted for water requiring funding which have become more difficult to secure. Tariffs set too low by regulators has been a key challenge for cost recovery creating the stimulus for ill-conceived debt financing strategies which unfortunately have caused financial losses.

**Rationale and Objective.** The current challenges confronting DVK call for a systematic approach, one that varies from the traditional approach to planning municipal water supply and sanitation which relies on a horizon of 20 years based on estimates of future population and per capita water consumption. The business model approach to water and wastewater utility planning uses a strategic planning approach that balances long term planning with short-term capacity development. Investments are phased and implemented in stages to ensure financial viability of systems in the short to medium term. Through a bottom up process that involves stakeholders in the identification of preferences; analyses of the service provider’s performance; and matching of designs to human, financial and economic resource constraints, the “business planning” approach aims to increase the efficiency of resource allocation and ensure sustainability of services.  

**The Strategic Business Planning Approach.** Figure 1 presents a simplified illustration of the process and elements of the approach.

Figure 1. Strategic Business Planning to Sustainable Water and Wastewater Utility Services

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Proposed Business Planning Approach for DVK. It is proposed that DVK adopts a strategic approach towards its utility planning for water and wastewater sustainability. The key components of this approach are summarized below.

(1) **DVK Business Plan.** DVK has committed to managerial reforms to ensure sustainable service delivery and has undertaken some institutional development activities under earlier World Bank support which is ongoing. However, a comprehensive organization-wide Business Plan that would cover technical, investment planning, operations, organizational restructuring and human resource management planning has not yet been developed and is now critical in terms of the technical, management, financial and human resource requirements of the proposed network management system incorporating district metering areas and smart metering. Through DWSSP, a performance based Corporate Business Plan (CBP) covering 5 years will be developed based on an agreed long-term strategic planning framework to be referred to as the DVK Road Map to Sustainable Water and Wastewater Delivery. The CBP will be a rolling 5-year plan covering organizational structure, operation and maintenance efficiency, as well as financial management and accounting sustainability. The CBP will effectively be the 5-year strategic implementation plan for the road map to be adopted by DVK and Dushanbe City. The CBP will outline time bound performance indicators, both technical and institutional, based on benchmarking with other water utilities covering areas that include (i) non-revenue water (NRW), (ii) water quality, (iii) energy efficiency, (iv) customer response, (v) billing and collection, (vi) customer satisfaction. It will be accompanied by an electronic monitoring and evaluation system to facilitate performance measurement and reporting.

(2) **Accountability and Incentive Mechanism with Performance Benchmarking:** An accountability and incentive mechanism based on performance will be established for DVK employees. Remuneration for employees will have two components; a fixed component which employees will receive on a regular basis and a variable component which will be based on performance which will be a maximum of an agreed percentage of the overall remuneration (for example 10%). The performance-based component will be guided by the following: (i) an agreed time-bound enterprise performance indicator as summarized in the CBPs, (ii) appropriate division level indicators, and (iii) individual performance indicators based on performance appraisal by supervisors. Employment agreements with employees will include Key Performance Indicators (KPIs) that will be evaluated during performance appraisal. The maximum performance-based remuneration to be paid to each employee will be determined largely on whether the enterprise and division meet the time bound performance indicators and, on the score, achieved by an individual in his/her performance appraisal.

(3) **Capacity Development Plan:** The capacity development plan will set out what DVK intends to do to strengthen its institutional structure and governance system as well as human resource capacity to meet its sustainability goals and implement its CBP effectively and efficiently.

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