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REPUBLIC OF TAJIKISTAN: MUNICIPAL INFRASTRUCTURE DEVELOPMENT ADDITIONAL FINANCING ROJECT

MIDP AF-003 "RECONSTRUCTION OF TRANSMISSION MAINS IN FARKHOR"

ENVIRONMENTAL MANAGEMENT PLAN

A. Overview

1. *Introduction.* The Government of the Republic of Tajikistan and the World Bank are cooperating to alleviate poverty and to achieve a sustainable economic growth in the Tajik Republic. To accomplish these tasks, World Bank is providing the grant for development strategies, obtaining expert analysis and implementing specific projects and programs. Within this framework, Municipal Infrastructure Development Project (MIDP) as well as MIDP Additional Financing has been prepared.

B. Sector context and MIDP performance

2. *Sector context*. In Tajikistan, drinking water and sanitation services and infrastructure are inherited from the Soviet era and are plagued by fast deterioration, poor operation and maintenance, and weak institutional capacity. Tajikistan's municipal sector features substantial infrastructure gaps and degradation, as well as low institutional capacity, in particular in areas of urban water supply, sanitation and solid waste management. As of 2008, 94% of the urban population had access to an improved source of water supply, 83% to piped water supply. Although by official accounts 95% of urban residents have access to an improved form of sanitation, sanitary conditions in many small towns are dire. For a majority of towns such services fall under the responsibility of the KMK through its subsidiaries (branches) in the regions. Laws passed in 2009 and 2010 support the decentralization and transfer of public service responsibility from KMK to local governments, but are not being effectively enacted on the ground, due to various factors including the lack of capacity and sufficient funding. Most utilities are also ambiguously subordinated to both the central administration and the Mayor's office. The World Bank-financed improvements to urban services in provincial towns through the Municipal Infrastructure Development Project (MIDP) have mainly focused on water supply and solid waste management. A "Municipal Infrastructure Development Project Management Unit (MIDP-PMU)" has been established for this project.

3. *MIDP performance.* The original IDA Grant for MIDP in the amount of SDR 10.6 million (US$15 million equivalent) was approved on January 19, 2006 and became effective on April 12, 2006. The objective of MIDP (PDO) is to improve the availability, quality and efficiency of delivery of basic municipal services to the population of the

towns which participate in the project. Implemented by the State Unitary Enterprise of Housing and Municipal Services (also known as Khochagii Manziliu Komunali, or KMK), the Project has three components: i) municipal infrastructure rehabilitation; ii) technical and institutional development; and iii) implementation support. Due to satisfactory implementation, MIDP is on track to achieving its stated Project Development Objectives which was to improve the availability, quality and efficiency of delivery of basic municipal services to the population of the towns which participate in the project, with particular emphasis on rehabilitation of water supply infrastructure and upgrades in solid waste management. MIDP has had a visibly positive impact on the delivery of municipal services across 8 participating towns – Dangara, Istaravshan, Kanibadam, Kulyab, Kurgan-Tube, Rasht, Vakhdat and Vose, documented by the increase of number of people provided with access to improved water source, the increase of number of hours of service and reductions in unaccounted for water.

C. The Project Components

4. *Proposed Project.* The Government of Tajikistan has requested the World Bank to provide Additional Financing (AF) in the amount of US$7.0 million IDA Grant to continue supporting municipal infrastructure development in small towns as part of the Municipal Infrastructure Development Project (MIDP).The Ministry of Finance and KMK confirmed that while the municipal infrastructure needs for secondary towns are huge and widespread, the most effective way of investing the limited IDA Additional Financing grant of US$7.00 million is to support development of municipal services in an integrated manner in a limited number of urban centers. As such, The Additional Financing of MIDP will cover only five urban centers – Farkhor, Vose, Dangara, Kurgan-Tube and Kolab located in the poorer southern region of Khatlon in Tajikistan. At the same time the GoRT is interested in piloting innovative approaches to tackling the issues in the water and municipal sector in support of its broader sector reform objectives in improving communal services provision.

5. *Project Investment towns*. The type of investments under the additional financing will remain generally the same under the project but would be scaled up in the urban centers of Farkhor and Vose. The new activities would include: (a) rehabilitation of sewer network: (ii) preparation of access to landfill; and (iii) waste water treatment i.e through rehabilitation of aeration lagoons in existing WWTP area and sludge fields. Farkhor is a new city that will be covered under MIDP AF and it was selected based on selection criteria agreed with KMK. Vose was already a beneficiary city under MIDP, however, it received the smallest amount of investments out of eight cities (Kurgan-Tube, Koliab, Dangara, Istarafshan, Garm, Vose, Kanibadam, Vahgdat) and as such only 25% of the population in Vose has uninterrupted water supply and 29% benefit from better solid waste management compared to the other cities. While coverage of water supply improved only by 17% in Kannibadam, it is not located in the Khatlon region and therefore will not be a covered under the additional financing.

6. *Towns considered for institutional strengthening pilots*. The cities of Kurgan-Tube, Dangara and Kolayb would benefit from the scaling up through piloting the use of

modern billing and collection technologies (electronic kiosks and installation of automated accounting systems due to the positive results in improving their billing and collection following investments and support received from EBRD and the World Bank. In addition, solutions to improving the solid waste management system will be piloted in Vose, Farkhor and the three cities named above.

7. *PDO*: The Project Development Objectives (PDO) to improve the availability, quality and efficiency of delivery of basic municipal services to the population of the towns which participate in the project will not change. In doing so, the project will assist local governments in responding to pressing public service needs of the local population.

8. The additional financing will continue to finance the following original components of the MIDP: *Component A: Municipal Infrastructure Rehabilitation:* This component includes improvement of municipal services in an integrated manner: (a) rehabilitation and limited expansion of the water supply network, (b) provision of public toilets for apartment blocks; (c) improvement of solid waste collection and disposal: (d) the acquisition of essential utility services equipment; (e) rehabilitation of sewer network; (f) preparation of roads and access to landfill; (g) installation of meters; (h) pumps and electrical transformers: and (j) waste water treatment through rehabilitation of aeration lagoons in existing WWTP area and sludge fields. *Component B: Technical and Institutional Strengthening:* This component will continue to support capacity building of a) Khochagii Manziliu Komunali KMK at the center and b) local utilities and the municipality, with specific focus on improving utility management, operations and maintenance and financial sustainability. Under the scale up the project will also finance support KMK in developing a Management Information System and participation in and at the local level the project will support some or all of the following - installation of electronic kiosks to improve billing and collection at the local utility level; setting up of accounting software; improvements in billing and collection; establishment of complaints handling and emergency repair unit within the local KMK or municipality; establishment of a Drinking Water Association with members from the community to ensure complaints are being addressed and that the quality of services is maintained on one side and on the other ensure that the local population the necessary user chargers and tariffs; and public awareness building campaigns to support expected changes in consumer habits; *Component C: Implementation Support:* The component finances support for the Project Management Unit already established under the MIDP project, implementation consultants and other consultant services. The proposed new component under the Additional Financing will be: *Component D: Communal Services Sector Development*: This component will support the GORT in implementing the Communal Services Development Program through the development of a Municipal Sector Strategy. The Municipal strategy will also explore establishing rules based financing mechanism for Communal Services Development that would attract other donor funds in the future by providing opportunities to leverage funding for the sector (initially limited to water supply, sanitation and solid waste management).

D. Environmental Review.

9. *Environmental and Safeguards Screening.* The project has been placed in environmental screening category "B" under the provisions of World Bank Operational Policy "Environmental Assessment". The limited adverse impacts which will inevitably occur during construction works can be prevented by appropriate measures in the process of design and implementation of specific activities. Moreover, the project supports measures for environmental improvement at the local level through rehabilitation of the existing infrastructure for waste water collection and treatment. The applicability of World Bank Operational Policy 7.50, "Projects on International Waterways" was reviewed with the Legal Department of the World Bank, and a waiver from notifying the riparian states was granted, since the project will not be harvested for irrigation or other use and the proposed investments would reduce water abstraction from rivers and canals, by reducing leakages in the system. The extension of the water supply in Vosse city will be limited and thus the potential increase in water consumption from underground sources is anticipated to be minimal (at the level of no more than 15%. Furthemore, the new investments in Farkhor would help reduce pollution by rehabilitation of aeration lagoons in existing WWTP. The MIDP AF will apply the existing EMP as a framework for preparing site specific EMPs at the later stage of the project implementation.

10. *Environmental Management Plan.* The Environmental Management Plan (EMP) for MIDP summarizes the recommended design measures, construction supervision methods and monitoring actions to minimize and/or avoid the limited potential short- and long-term impacts of activities under Component 1. EMP identifies potential environmental and social impacts related to construction and improvement of water supply and sewerage systems, drinking water improvement and wastewater treatment facilities, solid waste handling and disposal. These potential impacts and their associated mitigation and monitoring actions are described below and summarized in Table A, "Mitigation, and Monitoring Actions." This document will be used for preparing site specific EMP for proposed investments in Vosse and Farkhor which will be publicly disclosed and consulted with all interested parties.

E. Country's background

11. *Background.* The Republic of Tajikistan is located in the southern part of Central Asia. It shares borders with Afghanistan, China, Uzbekistan and Kyrgyzstan. The national territory is 143,100 sq. km of which more than 93% are mountainous area. Almost half of the territory of the country is located on height of 3000 meters and more.

The main environmental problems in Tajikistan concern the degradation of pasture lands caused by overgrazing and a breakdown in the previous system of stock rotation. Degradation of land cover contributes to desertification, results in soil erosion and reduction in soil fertility, and causes changes in the hydrological regime. Erosion has a detrimental effect on water quality and contributes to sedimentation in reservoirs and to reduced performance and increased maintenance costs of irrigation infrastructure. Effects of increased runoff due to erosion and deterioration of land cover contribute to increased flooding and risks of landslides and mudflows.

Soil contamination and water pollution are the other principal environmental concerns. Where ground water is used for irrigation there is some risk of soil salinization and subsequent loss of fertility. Mining and mineral processing activities pose contamination risks for soils as well as surface and ground waters. Both soil and water pollution bear risks of an impact on human health. Degradation of soils, desertification due to land degradation, and contamination by mining or mineral processing wastes and agrochemicals pose potential risks to the integrity of natural habitats and to their biological diversity. The Project supported activities will predominantly take place in urbanized areas with no natural habitats. The municipal infrastructure – water supply and sewerage systems, the waste collection and centrally supplied drinking water networks are significant due to poor state of pipes, and due to the high specific energy consumption to deliver 1m3 of water to consumers. The water supplied to the houses is rich in suspended solids due to lack of proper pre-treatment at well fields and not safe to drink due to poor disinfection.

Municipal solid waste, as a rule, is delivered unsorted to open uncontrolled dumps, thus polluting the surface- and ground- water bodies by a leachate. The loose solid waste is dispersed by wind over the large areas. At the same time, the utility companies in charge of providing the municipal services are ill-equipped and under-funded to address these problems. The equipment they own – tractors, trucks, specialized waste hauling trucks in many places are not operational partly due to their considerable age and partly due to lack of spare parts.

F. National legal requirements

12. All projects will have to comply with requirements of national environmental legislation as well as WB EA rules and procedures. Tajik Law on Environmental Expertise (Law #20) was adopted in April 22, 2003. Section 7 of this law lists the types of projects and activities which are subject environmental expertise procedure. In each particular case the project proponent shall check with local authorities whether the proposed project shall undergo this procedure, since the law is not conclusive. Normally, change of pumps or repair works should be exempted from this procedure, however, the item 13 of this Section states that "any activity, which in accordance with regulatory acts, may have a negative impact on environment" are subject to environmental expertise procedure.

G. Potential Impacts resulting from Investment Component

13. The project is expected to have mainly positive long term environmental effects, since it will contribute to eventual reduced surface and groundwater water pollution, better solid waste management practices, and reduced air pollution. Project will finance rehabilitation and repair of infrastructure for basic municipal services, operated by the KMK local subsidiary enterprises (water supply, solid waste collection, etc.) in the eight participating towns, as mentioned in Section B above. The project will mainly finance rehabilitation of water supply pipelines, substitution of inefficient and obsolete pumps at the well-fields, renovation of water disinfection units, cleaning of the wells, fencing of solid waste dumps, as well as acquisition of the critical equipment – trucks for solid waste haulage,

trucks for transporting the raw sewage, tractors, excavators, cranes, welding machines, etc. Potential direct, indirect, cumulative and residual adverse environmental impacts of the project activities will be predominantly related to construction activities and be limited in scope. Most of project supported activities will take place in urban areas, and construction works mainly will be rehabilitation of existing structures rather than "green field" operations. This also limits negative impact on natural ecosystems. However, if not properly addressed, the potential impacts may include the following: (a) Pollution of the air, soil, surface and underground water at construction sites and adjacent areas; (b) Disposal of construction waste in unauthorized dump sites; (c) Damage to the buildings and installations located in proximity to construction area; (d) Stimulation of erosion; (e) Damage to health of contractors' staff if applicable work safety and occupational health standards are not observed.

H. Mitigation measures

14. *Overview.* The mitigation measures outlined in this section will be undertaken as part of the project implementation process to mitigate potential impacts from construction activities. The primary adverse impacts from the project are largely associated with small scale civil works for infrastructure improvements, for creating access to landfill, as well as with the extension of water supply and rehabilitation of aeration lagoons. These impacts are very localized, limited in their scope, short in duration and can be addressed through both design and monitoring measures. Table A summarizes the activities, mitigation issues and measures to be taken, and the monitoring and supervisory responsibilities.

16. *Key measures:* The key mitigation measures included in the project are as follows:
    a. Preparation of subproject specific Environmental Management Plans, or inclusion of Environmental Protection Chapter into detailed designs, which would identify potential environmental issues and ways for their mitigation;
    b. Requirement to contractors at contract tendering stage to include into proposals the measures to mitigate adverse environmental and social impacts.
    The above would include, but not limited to: i). selection of optimal routes for new pipelines (if that happens to be the case), of access roads to landfills and construction sites for other installations to avoid negative environmental and social impact; ii). identification of designated landfills/dumpsites where construction waste has to be delivered; iii). timely identification and provision of appropriate funding for land reclamation measures; iv). strict enforcement of usage of environmentally and human health-wise safe construction materials; v). noise reduction measures; vi. strict adherence to occupational health requirements; vii). provision of alternative access routes for affected population to avoid restriction of access to livelihood activities, if needed; viii). optimal phasing of construction activity to ensure shortest duration possible of disruption to livelihood activities.

15. *Contractor Requirements to Minimize Environmental Impacts.* Individual environmental management plans, or provisions as included into the Environmental Chapter of the detailed designs, will provide guidelines and actions to mitigate potential environmental

impacts, through instructions to design engineers and construction contractors to undertake certain actions on a site specific basis. Specific provisions should be included in construction contracts to mandate the use of health and safety measures to minimize accidents during the construction and post-construction process. Particular emphasis will be put on use nonhazardous materials in new construction. For instance, although it is legal in Tajikistan, every attempt will be made to limit use of asbestos containing materials in construction, permitting it only in exceptional cases. Appropriate provisions will be included into bidding documents for construction works.

16. *Archeological "Chance Find" Procedures.* Although the chances to unearth valuable archeological artifacts are slim, provisions will be included in contract documents to address archeological "chance finds" should they be encountered during the course of construction activities. These provisions will follow procedures accepted by the national and/or local authorities responsible for archeological and historical sites and materials.

17. *Project implementation monitoring.* Project implementation process will be closely monitored by PMU and respective environmental and occupational health (hygienic) authorities through regular reviews of the investment specific environmental management plans and regular site visits. The World Bank staff will pay visits to randomly selected sites during the semi-annual implementation review missions.

I. Social aspects

18. The project is expected to have a positive long term social development impact as it will contribute to improved access and quality of potable water, better sewerage management, and better solid waste management practices. A Resettlement Policy Framework (RPF) has been developed to provide for any potential impacts arising from land acquisition in the Additional Financing activities in Farkhor and Vose. These have been described in the RPF and entitlement matrix provided. If there are impacts identified, Resettlement Action Plans will be developed in accordance with the guidelines of the RPF and World Bank OP 4.12. Adverse impacts on livelihoods will be avoided by providing alternative access routes if necessary, and phasing construction to minimize disruption. The on-going project developed and implemented 3 Resettlement Action Plans (RAPs) satisfactorily. Impacts were marginal and largely temporary.

J. Consultation and disclosure of information

19. The project and the EMP preparation process for the initial project included a variety of consultations with a wide range of stakeholders, including nongovernmental organizations (NGOs), at the regional, national and local level. This process will continue during the project implementation period which will allow for inputs from stakeholders especially at the activity specific level. The EMP has been translated into Russian language and made available to the public through the Info-Shop at the World Bank, and through the Ministries of Ecology and Emergency Situations. It is also available at the World Bank office in Tajikistan. As mentioned above in point 10 the new site-specific

EMP to be prepared for proposed investments will be also publicly disclosed and consulted with all interested parties.

K. Institutional strengthening

20. **Institutional Strengthening**. Component 2 of the project provides support for institutional strengthening and capacity building measures. Successful implementation of the project requires the strengthening of the local institutional capacity to supervise the construction and maintenance of the installations and rehabilitation activities. The Component's primary objective is to strengthen local capacity to successfully utilize outputs of the Project.

L. Estimated costs

21. The costs for implementation of management and monitoring activities included in the EMP have been integrated into the estimated budgets for the individual activities and management costs for the Project. This approach reflects the environmental management orientation of the project and the fact that most mitigation actions are associated with project supported management plans, design approaches and specifications in construction contracts.

M. Reporting and supervision

22. *Reporting.* The Bank together with PMU will agree upon reporting requirements for Financial Monitoring Reports (FMR). Project progress will be reported through annual, semiannual and quarterly Project progress reports, which will also address compliance with the safeguard requirements.

23. *Supervision.* The Project Management Unit staff will supervise the project supported activities on a routine basis. This will be complemented by Bank supervision of the project. The process will include the participation of Bank environmental and social staff in implementation review missions, as appropriate, to review progress in the implementation of the EMP. The performance of MIDP PMU in these project activities will be a standard element of supervision reports and the Implementation Completion Report (ICR).

Table A. Mitigation and Monitoring Actions

Project activities	Potential Impacts	Mitigation Measure	Phase	Responsible for Execution of Mitigation Measures	Monitoring Requirements	Responsible for Monitoring
Laying of New pipelines	Damage to ecosystems, endangered plant species	Selection of pipeline route to avoid habitats of endangered plant species	Design	Design Consultant	Implementation Of inspections of construction sites, operation zones;	PMU
	Pollution of soil and water at construction site with oil materials	Daily checks of machinery for leaking of oil, ban to wash machinery at construction site	Construction	Contractor Local utility services,	Check of the plan of waste removal.	Urban ecological services and departments.
	Noise pollution in towns	Works performed strictly during the working hours	Construction	Contractor	Regular inspection of Construction Code norms observance	Gosarhstroicontrol departments (State Architectural
	Reduced amenity values of the area	Proper landscaping and replanting of construction area after completion of piping works	Construction	Design Consultant and Contractor	Constant supervision and periodical check of construction sites Check of contract documents.	Control Management Department PMU, local utility services
	Archeological "chance find"	Stopping works and calling in respective local authorities and experts	Construction	Contractor, local utility services	Construction supervision	PMU, local utility services
	Worsened livelihoods to kiosk owners and small traders	Foresee and provide alternative access routes to kiosks; select proper timing for civil works;	Design and construction	Design consultant, contractor	Regular contract Supervision. Check of detailed designs, bidding documents, contract supervision	PMU, local utility services PMU, local utility services
Repair of pipelines	Digging of soil, damage to endangered plant species	Checking for endangered plant species on construction site, if found - replanting	Design,	Design consultant and	Supervision of construction	PMU Urban ecological services and departments
	Pollution of soil and water at construction site with oil materials	Daily checks of machinery for leaking of oil, ban on wash machinery at construction site	Construction	Contractor	Constant supervision of execution of appropriate measures	Gosarhstroicontrol departments (State Architectural Control
	Littering of	Instructions to contractor to which	Construction	Contractor	Supervision of	Management

	construction site with removed pipe portions and discarded insulation material	landfill the waste has to be delivered. If insulation contains asbestos, workers must wear protective measures – wear respirator		local utility services ,	observance of measures	Department PMU, Local hygiene service
	Noise pollution in towns	Works performed strictly during the daytime	Construction	Contractor local utility services ,	Project expertise and supervision of construction	local utility services PMU,
	Worsened livelihoods to kiosk owners and small traders	Foresee and provide alternative access routes to kiosks, select proper timing for civil works	Construction	Contractor Design Consultant	Constant supervision and periodical check of construction sites	local utility services PMU, local utility services
	Reduced amenity values of the area	Proper landscaping and replanting of construction area after completion of repair works	Design and construction	Design Consultant, Contractor	Check of detailed designs, bidding documents, contract supervision	
	Archeological" chance find"	Stopping works and calling in respective local authorities and experts	Construction	Contractor, local utility services	Check of contract documents. Construction supervision. Regular contract supervision	local utility services, PMU
Repair/rehabilitation of roads	Pollution of area adjacent to roads with scrap asphalt	Collection of scrap asphalt and delivery to designated landfills/dumpsites	Construction	Contractor	Supervision of construction	PMU
	Pollution of soil and water with oil products and asphalt during construction	Daily checks of machinery for leaking of oil, ban to wash machinery at construction site	Construction	Contractor	Constant supervision of execution of appropriate measures	Urban Ecological services and departments.
	Stimulation of erosion of land	Proper landscaping of slopes and replanting of vegetation	Design, Construction	Design Consultant,	Supervision of observance of security measures	Gosarhstroicon Troll departments (State Architectural Control
	Damage to the buildings and installations located in	Identifying of vulnerable buildings and installations prior construction, development of appropriate technique	Design Construction	Contractor Design	Project expertise and supervision of construction	Management Department local utility services PMU,

	proximity to construction area Worsened livelihoods to kiosk owners and small traders	Adherence to special work regime in proximity of vulnerable buildings Foresee and provide alternative access routes to kiosks, select proper timing for civil works	Design and construction	Design consultant, contractor	Check of detailed designs, bidding documents, contract supervision	PMU, Local utility services
Repair/reconstruction of objects of social infrastructure	Littering of construction site and adjacent areas with construction waste	Collection of scrap of constructing waste and delivery to designated landfills/dumpsite	Construction	Contractor	Construction management	Local utility services and construction inspectors
	Contamination of construction site with waste containing heavy metals	Collection of luminescent lamps and other similar waste and delivery to designated landfills/dumpsites for subsequent reprocessing	Construction	Contractor	Constant supervision of execution of appropriate measures	Local utility services and construction inspectors
	Damage to human health due to exposure to asbestos containing materials	When asbestos containing Materials encountered, the workers should wear protective gear; asbestos containing waste promptly delivered to designated landfills/dumpsites	Construction	Contractor	Supervision of observance of security measures Project expertise and supervision of construction	Local utility services and construction inspectors
Construction of new wells and (for water meter unit and back valves)	Littering of construction site and adjacent areas with construction waste	Prompt collection of constructing waste and delivery to designated landfills/dumpsite	Construction	Contractor	Supervision of construction	Local utility services and construction inspectors
	Contamination of construction site with waste containing heavy metals	Proper landscaping after completion of repair works, collection of waste and other similar waste, delivery to designated landfills/dumpsite for subsequent reprocessing	Construction	Constructor	Permanent supervision of mitigation measures	Local utility services and construction inspectors