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PROJECT PAPER

ON A

PROPOSED ADDITIONAL GRANT

IN THE AMOUNT OF SDR 7.7 MILLION
(US$11.85 MILLION EQUIVALENT)

AND

RESTRUCTURING

TO THE

REPUBLIC OF TAJIKISTAN

FOR A

MUNICIPAL INFRASTRUCTURE DEVELOPMENT PROJECT

April 12, 2012

Sustainable Development Department
Europe and Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective: February 29, 2012)

Currency Unit	=	SDR
TJS 4.759	=	US$1
US$ 1	=	SDR 1.556

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
CPS	Country Partnership Strategy
EMP	Environmental Management Plan
GoRT	Government of Republic of Tajikistan
IBNET	The International Benchmarking Network for Water and Sanitation Utilities
ICB	International Competitive Bidding
IDA	International Development Association
IP	Implementation Progress
ISR	Implementation Status Report
HCS	Housing and Communal Services
KMK	State Unitary Enterprise "Khojagiyi Manziliyu Kommunali"
NCB	National Competitive Bidding
MIS	Monitoring Information System
MIDP	Municipal Infrastructure Development Project
MLRWR	Ministry of Land Reclamation and Water Resources
MOF	Ministry of Finance
MSS	Municipal Sector Strategy
O&M	Operation and Maintenance
ORAF	Operational Risk Assessment Framework
PDO	Project Development Objective
POM	Project Operations Manual
PMU	Project Management Unit
PRS	Poverty Reduction Strategy
SDR	Special Drawing Rights
TJS	Tajik Somoni

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REPUBLIC OF TAJIKISTAN

MUNICIPAL INFRASTRUCTURE DEVELOPMENT PROJECT
ADDITIONAL FINANCING AND RESTRUCTURING

TABLE OF CONTENTS

Project Paper Data Sheet i
I. Introduction 1
II. Background and Rationale for the Additional Financing 2
III. Proposed Changes 5
IV. Appraisal Summary 10
Annex 1: Results Framework and Monitoring 19
Annex 2: Operational Risk Assessment Framework 30
Annex 3: Detailed Description of Modified or New Project Activities 35
Annex 3a: Scope of a Municipal Sector Strategy 42
Annex 3b: Monitoring Information System and Benchmarking of Water Utilities 44
Annex 3c: Billing and Collection Modernization Pilot 47
Annex 3d: Pilot Household Connection Subsidy for Water Supply 49
Annex 4. Safeguards 50
Annex 5: Financial Management and Disbursement 53
Annex 6: Revised Estimate of Project Costs 55
Annex 6a: Procurement Plan 56
Annex 6b: Emergency Services Response Equipment and Goods 58
Annex 7: Economic and Financial Analysis 59

REPUBLIC OF TAJIKISTAN
MUNICIPAL INFRASTRUCTURE DEVELOPMENT PROJECT
ADDITIONAL FINANCING AND RESTRUCTURING

Project Paper Data Sheet

Basic Information - Additional Financing (AF)	
Country Director: Saroj Kumar Jha Sector Manager/Director: B Blarel/L. Lovei Team Leader: Serdar Jepbarov Project ID: P127130 Expected Effectiveness Date: July 30, 2012 Lending Instrument: Specific Investment Loan (SIL) Additional Financing Type: Scale Up	Sectors: Water supply (80%); Solid waste management (10%); Sub-national government administration (5%); Sanitation (5%) Themes: Other urban development (40%); Urban services and housing for poor (20%); Municipal finance (20%); Municipal governance and institution building (20%) Environmental category: B Expected Closing Date: August 31, 2015 Joint IFC: No Joint Level: No
Basic Information - Original Project	
Project ID: P079027 Project Name: Municipal Infrastructure Development Project (MIDP) Lending Instrument: Specific Investment Loan (SIL)	Environmental category: B Expected Closing Date: August 31, 2012 Joint IFC: No Joint Level: No
AF Project Financing Data	
[ ] Loan [ ] Credit [X] Grant [] Guarantee [ ] Other: Proposed terms:	

AF Financing Plan (US$m)	
Source	**Total Amount (US$m)**
Total Project Cost:	12.96
Cofinancing:	
Borrower:	1.03
Total Bank Financing:	
IBRD	
IDA	11.85
New	
Recommitted	

Client Information						
Recipient: Government of Tajikistan **Responsible Agency:** State Unitary Enterprise "Khojagiyi Manziliyu Kommunali" (KMK) Project Management Unit (PMU) 56 Karabaeva Street, Dushanbe,Tajikistan Contact: Mr. Alimurod Tagoimurodov, Director General, KMK Mr. Jamshed Tabarov, Director, PMU Telephone No.: +992-37-233-13-30 Fax No.: +992-37-233-85-25 Email: office@midp.tj						
AF Estimated Disbursements (Bank FY/US$m)						
FY	**2013**	**2014**	**2015**	**2016**		
Annual	**2.35**	**5.5**	**4.0**	**0**		
Cumulative	**2.35**	**7.85**	**11.85**	**11.85**		
Project Development Objective and Description						
Original project development objective: To improve the availability, quality and efficiency of basic municipal services for the population of the towns which participate in the project. Revised project development objective: To improve the availability, quality and efficiency of basic municipal services for the population of the towns which participate in the project. An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials. Project description: *Component A: Municipal Infrastructure Rehabilitation (US$9.44 million out of which IDA US$8.41 million).* This component would finance improvement of municipal services in an integrated manner in the towns of Farkhor and Vose. It will include rehabilitation and limited expansion of the water supply network to improve service quality and coverage; improvement of solid waste collection and disposal services; provision of public toilets for apartment blocks; introduction of a household connection subsidy; and acquisition of emergency services response equipment and materials. *Component B: Technical and Institutional Strengthening (US$ 1.77 million out of which IDA US$1.69 million).* This component will finance the implementation of a pilot metering program; piloting the use of modern billing and collection technologies in the water utilities; the installation of a Monitoring Information System in KMK; introduction of IBNET benchmarking of water utilities; installation of an automated accounting system; communication campaigns; development of a Municipal Sector Strategy; training and institutional strengthening and feasibility studies. *Component C: Implementation Support (IDA US$1.75 million).* This component will finance the Project Management Unit already established under the original project, the Implementation Consultant contract and other consulting services.						

Safeguard and Exception to Policies	
Safeguard policies triggered: Environmental Assessment (OP/BP 4.01) Natural Habitats (OP/BP 4.04) Forests (OP/BP 4.36) Pest Management (OP 4.09) Physical Cultural Resources (OP/BP 4.11) Indigenous Peoples (OP/BP 4.10) Involuntary Resettlement (OP/BP 4.12) Safety of Dams (OP/BP 4.37) Projects on International Waterways (OP/BP 7.50) Projects in Disputed Areas (OP/BP 7.60)	 [X] Yes [ ] No [ ] Yes [X] No [ ] Yes [X] No [ ] Yes [X] No [ ] Yes [X] No [ ] Yes [X] No [X] Yes [ ] No [ ] Yes [X] No [X] Yes [ ] No [ ] Yes [X] No
Does the project require any waivers of Bank policies? Have these been endorsed or approved by Bank management?	[X] Yes [ ] No [X] Yes [ ] No

Conditions and Legal Covenants:		
Financing Agreement Reference	Description of Condition/Covenant	Date Due
Article V, 5.01 (a)	The Subsidiary Grant Agreement, satisfactory to the Association, has been executed on behalf of the Recipient and the KMK.	
Article V, 5.01 (b)	A Project Implementation Agreement, satisfactory to the Association, has been entered into between KMK and the PMU.	
Article V, 5.01 (c)	Updated Environmental Management Plan has been approved by the State Ecological Expertise.	
Schedule 2, Section II, C	A technical audit is conducted on an annual basis to ensure to ensure that the activities financed under the AF have been implemented correctly with the required quality and safeguarded for future use.	
Schedule 2, Section IV, B.1 (a)	A technical, fiduciary and environmental audit, satisfactory to the Bank, for the goods purchased and the use of such goods for urgent flood preparedness will be a basis for retroactive financing of the sub-component A5.	

I. Introduction

1. This Project Paper seeks the approval of the Executive Directors to provide an additional grant of SDR 7.7 million (US$11.85 million equivalent) to the Republic of Tajikistan for the Municipal Infrastructure Development Project (MIDP, P079027, Grant H2000).

2. The proposed additional financing (AF) would help finance the costs associated with scaling-up of on-going activities and support additional activities to enhance the positive impact of the MIDP. The original project has successfully implemented municipal infrastructure investments in eight participating towns (Kurgan-Tube, Kulyab, Dangara, Istaravshan, Gharm, Vose, Kanibadam, Vahdat) through (a) financing the rehabilitation and repair of infrastructure and installations and the replacement of equipment of local branches of the State Unitary Enterprise "Khojagiyi Manziliyu Kommunali" (KMK), and (b) assisting KMK and its local branches to improve the management of the delivery of basic municipal services. The proposed AF will continue to support five towns – four existing towns (Dangara, Kurgan-Tube, Kulyab and Vose) and one new town (Farkhor).

3. The on-going activities will be scaled up to i) expand physical investments in water supply, sanitation and solid waste management in an integrated manner in two towns – Vose and Farkhor located in the Khatlon Region, which borders Afghanistan and is one of the poorest and ii) strengthen KMK's capacity to provide centralized oversight over local utilities and to respond to emergency situations caused by natural disasters. The AF will also increase emphasis on institutional strengthening and sector reform by financing additional activities that pilot efforts to improve water service coverage and utility performance in select towns, and the development of a Municipal Sector Strategy. The Strategy would include the identification of financing mechanisms for provision of communal service infrastructure, such as a fund or other program funding instruments. In addition, the proposed AF will assist the Government of Republic of Tajikistan (GoRT) to urgently prepare for the anticipated floods of the Spring of 2012 by acquiring materials needed for this purpose.

4. The Project Development Objective (PDO) has been revised to the reflect the support provided under the AF to assist the Government to urgently prepare for the anticipated floods of the Spring of 2012 due to high snow accumulation in winter. The revised PDO is to "improve the availability, quality and efficiency of basic municipal services for the population of the towns which participate in the project. An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials". The results framework has been revised and updated to include new indicators to measure scaled-up and additional activities. MIDP has been restructured twice. The closing date of MIDP was extended by one year to August 31, 2012. The AF will be for 3 years, with a final closing date of August 31, 2015.

5. Overall implementation arrangements including procurement and financial management for AF which proved to be satisfactory will remain unchanged. KMK will continue to be the Implementing Agency of the original project and the AF, supported by the Project Management Unit (PMU). The Project Operations Manual (POM) was updated to reflect new activities under the proposed AF.

II. Background and Rationale for the Additional Financing

6. **Sector Context.** Tajikistan's municipal sector features substantial infrastructure gaps and degradation, as well as low institutional capacity, particularly in urban water supply, sanitation and solid waste management. Although by official accounts 95% of urban residents had access to an improved form of sanitation in 2008, sanitary conditions in many small towns are dire.[1] Recent assessments of small towns provided by KMK for 2011 in the Khatlon Region indicate water supply coverage as low as 14%, solid waste coverage of 1% and sanitation coverage of 0-1% in some towns. For a majority of towns such services fall under the responsibility of KMK through its local 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 thus continue to be ambiguously subordinated to both the central administration of KMK and to the Mayor's office.

7. **Government Reform Agenda and Sector Challenges.** The GoRT is currently seeking to strengthen service regulation functions. Legislation was recently passed[2] to update service standards for improved efficiency of water use, and to clarify the rights and responsibilities of utilities and consumers. Implementation however has been weak due to capacity constraints and insufficient funding of local utilities (local branches of the KMK).

8. The GoRT recently introduced regulations to improve water use efficiency by updating per capita consumption and service standards, and clarified responsibilities of utilities and the rights of consumers. KMK is mandated to implement these acts over the next two years. It also intends to pilot initiatives to improve financial sustainability of its branch utilities and to enhance KMK's management and oversight functions.

9. **Consistency with Bank Strategy.** The proposed AF is included in the current Country Partnership Strategy (CPS) for Tajikistan (FY2010-2013), which points to the third overarching objective of the Poverty Reduction Strategy (PRS) to promote sustainable improvements in living standards, particularly of vulnerable groups. The AF is consistent with the pursuit of the CPS result indicator *"improving the provision of safe water to Dushanbe and select municipalities"* with a focus on smaller towns in the country.

10. **Rationale for Additional Financing.** The GoRT requested AF for MIDP under the FY2012 IDA allocation in a letter dated March 2, 2011. The proposed AF would enhance MIDP's impact through a strategic scale-up of activities and investments by contributing to one of the CPS objectives aimed at promoting sustainable improvements in living standards, particularly among vulnerable groups. Alternatives to financing the scaling-up of the MIDP have been considered and the AF was found to be the most appropriate instrument to scale up activities of the ongoing project.

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1 World Bank, 2011 "Tajikistan, Sanitation in Small Towns";

2 Under the Local Governance and Citizen Participation program supported by USAID landmark laws were passed in August 2009 ("Law on Local Self Government in Towns and Townships" and the "Law on Housing Associations") and a recent presidential Decree "Concept of Housing and Communal Services Sector Reform (2010-2015)" was passed in July 2010. Law on "Potable Water and Its Supply" dated December 16, 2010, "Regulation on the use of water supply and sewerage networks in the Republic of Tajikistan" dated April 30, 2011";

11. MIDP has made a noticeable contribution to improving living conditions in the eight towns (Kurgan-Tube, Kulyab, Dangara, Istaravshan, Gharm, Vose, Kanibadam, Vahdat) where it is active. However, the potential impact the project could have had on beneficiary populations was diluted by the spread of investments and the lack of attention given to strengthening the central and local institutional capacities. To ensure depth of intervention and greater impact in improving the living standard of targeted populations as measured by access to basic urban (municipal) services, the proposed AF will focus on an urban integrated development approach in two towns –Farkhor and Vose, with investments in water supply, solid waste management, sanitation, and on institutional development.

12. The proposed AF will also enhance the ability of the GoRT to better respond to disruption in services due to flooding, severe cold weather (snow) and earthquakes by financing utility services maintenance equipment, cement, fuel and gabion wire mesh. The equipment will be located at regional centers with easy access to district KMK branches and the civil protection system, as part of comprehensive preparedness and emergency activities. In response to a request from GoRT for emergency preparedness support, the proposed AF will be used as the vehicle for retroactive financing up to US$1.9 million for acquiring goods needed to help support the Ministry of Land Reclamation and Water Resources (MLRWR) prepare for anticipated excessive spring flooding in 2012.

13. The AF will support preparation of a Municipal Sector Strategy and finance institutional strengthening pilots for improved service delivery. The GoRT has long acknowledged the deteriorating state of its communal services in drinking water supply, sanitation, solid waste management and district heating. It passed Presidential Decree #321 titled "Concept of Housing and Communal Sector Reform (2010-2015)" in July 2010 to start reform process in the municipal sector. An Inter-Agency Working Group led by KMK was established to lead its implementation.

14. Farkhor was selected out of 14 cities in Khatlon Region based on i) rayon (district) population size greater than 50,000 with a minimum urban population size of 20,000, ii) percentage of population not covered by services (water supply, solid waste removal and sanitation), iii) urban center not previously covered under MIDP or other donors and iv) availability of studies. While official statistics indicate that 65% of the town has access to water supply (either piped or through community stand pipes) only 21% has actual water supply, only 5% have solid waste collected and 11% have access to sanitation (pit latrines as the sewerage system is not functioning). At the same time, Vose received the smallest amount of the investments under MIDP if compared to other participating cities and as such only 25% of population has uninterrupted water supply and 29% of population is covered by solid waste collection services. Other special considerations that led to the selection of these two towns included greater likelihood of success due to the strong ownership of the local municipalities and their commitment to the implementation of the proposed institutional pilots and innovative activities to be financed under the AF.

15. The AF is a transition project towards broader involvement of the World Bank and other donors in improving the operational and financial sustainability of the sector. It goes beyond rehabilitating the water supply, sanitation and solid waste services in two towns. It responds to a

request from the GoRT to pilot institutional strengthening measures that could potentially be scaled up nationally in a follow-up operation and will encompass the following:

(1) Municipal Sector and Communal Services Reform including - i) development of a Municipal Sector Strategy; ii) designing a financing mechanism (Fund or other financing instruments) to support the development of communal services to attract and implement donor contributions to the sector; and iii) installing a Monitoring Information System for KMK to oversee the service and operating performance of local utilities;

(2) Initiatives to increase the sustainability and performance of water supply service delivery, including - i) the piloting of a metering and demand management program through the systematic installation of water meters in Farkhor; ii) the piloting of a Household Connection Subsidy program for small towns to improve coverage and equity of access to water supply; and iii) the piloting of modern billing and collection technology in secondary towns, with handheld controller terminals and electronic kiosks payment facilities.

16. **Original project and its implementation performance.** The IDA Grant for MIDP in the amount of SDR10.6 million (US$15.0 million equivalent) was approved on January 19, 2006 and became effective on April 12, 2006 with an original closing date of August 30, 2011. The objective of MIDP 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 KMK, the original Project has three components: (i) Municipal Infrastructure Rehabilitation; (ii) Technical and Institutional Development; and (iii) Implementation Support.

17. MIDP's progress toward achievement of the PDO and IP has been consistently rated as "Moderately Satisfactory" or "Satisfactory." There are no outstanding or unresolved safeguard, environmental, social or fiduciary issues. Many of the outcome indicators have already been met. The project has had systematic positive impact on the delivery of municipal services across all eight participating towns, as documented by the increase in the number of people provided with access to an improved water source; increase in the number of hours of service; and reduction in unaccounted for water. The project is currently completing its third investment phase spanning six towns.

18. **Past Project Restructurings.** In response to requests from the GoRT dated March 28, 2011, the project was restructured on July 11, 2011. The restructuring consisted of the following: (i) a trigger of a new safeguard policy on Involuntary Resettlement (OP 4.12) as the Project necessitated temporary land acquisition which was not originally envisaged during initial appraisal of the Project; (ii) re-allocation of the Grant proceeds from the unallocated category to other categories to finance activities which were originally envisaged under the project but were not sufficiently covered by the original scope; and (iii) extension of the Closing Date of the Project from August 31, 2011 to February 28, 2012. On November 11, 2011, the GoRT asked for a second extension of the Project from February 28, 20123 until August 31, 2012 which was

[3] First extension of the Closing Date was from August 31, 2011 to February 28, 2012 to allow sufficient time to fully meet the Project Development Objectives (PDO). This first six month extension was to allow completion of works due to i) processing of safeguards policies for unplanned temporary land acquisitions and ii) the need for reconstruction following floods and mudflows that occurred in Gharm in August 2010.

approved by the Bank to allow for finalization of the on-going MIDP AF Detail Design and bidding documents following submission of the Feasibility Study by the consultants, and to allow full completion of the third phase of investments.

III. Proposed Changes

19. The original PDO will be revised to reflect the changes in scope of the AF. The revised PDO is to "improve the availability, quality and efficiency of basic municipal services for the population of the towns which participate in the project. An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials". As part of the AF, the results targets, costs, financing, disbursement allocations, and closing date would be revised to reflect scaling-up of the existing and new activities. The results framework has been revised and updated to include core indicators to enhance monitoring of the outcomes of the activities financed under MIDP and new indicators to measure additional activities under the AF. The revised results framework, including targets is presented in Annex 1.

20. The geographical scope of the AF will be reduced to five urban centers which include cities previously covered by MIDP (Dangara, Kulyab, Kurgan-Tube and Vose) and Farkhor. In order to enhance the development impact of the AF physical investments in water supply, solid waste management, and sanitation will be limited to Vose and Farkhor and activities will be scaled up with respect to the institutional support provided to the GoRT in improving the institutional capacity of the communal services sector.

21. **Proposed changes to the project's design and scope.** The main adjustments which will be made to the original project are summarized below. Table 1 and Annex 3 provide further details on each component and sub-component and the related costs, the design of the scaled-up existing activities and new activities.

Adjustments to Component A: Municipal Infrastructure Rehabilitation: The following physical investments will be focused in an integrated manner in Farkhor and Vose.

- *Water supply:* In addition to the investment categories under the original project, the AF water supply intervention will also include the rehabilitation of internal piping in apartment buildings to support the most vulnerable households as meters are installed, so as to reduce water losses due to deteriorated internal water pipes.
- *Solid waste management*: In addition to procuring equipment for the participating towns, the project will be scaled up specifically in Farkhor to include the construction of a temporary waste deposit and sludge drying beds in the existing landfill, provide perimeter fencing and improve the access road to the landfill.
- *Pilot household connection subsidy program in Farkhor*: In an effort to increase household connections, the AF will pilot the provision of a household connection subsidy of 60% of total connection cost (based on willingness to pay assessments and affordability) to households that are currently not connected to the water network.
- *Acquisition of emergency services response equipment* to support KMK in better responding to service disruptions due to floods and earthquakes.

- *Urgent acquisition of materials for flood protection measures* (not including civil works) such as cement, fuel and gabion wire mesh to support the Ministry of Land Reclamation and Water Resources (MLRWR) to prepare for the anticipated floods of the Spring of 2012 in selected sites. Provision of a list of works and locations of proposed river sections that require rehabilitation was a condition of Negotiations. Materials will be eligible for retroactive financing and special implementation arrangements have been agreed with the GoRT, KMK and MLRWR.

Adjustments to Component B: Technical and Institutional Strengthening

- *Pilot metering program in Farkhor*: A pilot metering program will be implemented in Farkhor in an effort to i) contribute to the reduction in water loses through wastage; ii) introduce a more equitable application of tariff collection based on consumption; and iii) improve billing and collection. The program under the AF will benefit apartment dwellers, houses already connected to the water supply network and new households not yet connected to the network.
- *Piloting of modern billing and collection systems in the towns of Kurgan-Tube and Kulyab*: The project will finance the installation of modern billing and collection system and procurement of mobile handheld terminals in Kurgan-Tube and Kulyab, as well as provision of access to the infrastructure of the electronic billing kiosks that are already present in these cities. This pilot builds on the advances made by MIDP in improving services and by a past EBRD project that improved the financial management systems.
- *Communication and public awareness campaigns in all project towns.* Improvements in services delivery will require behavioral changes by the benefiting population, both with respect to conserving water but also habituating consumers to pay for the services they receive. The AF will finance public information campaigns to raise awareness on water conservation, solid waste disposal issues, and advantages of a metering program. Public awareness campaigns will also be used to inform the public of the availability of a Household Connection Subsidy for water supply.
- *Monitoring Information System (MIS) and participation in IBNET. Installation of a customized MIS at KMK central and in regional hubs.* The MIS would automate the collection, storing, processing and sharing of data and reports related to the Communal Services Sector. It will also assist in the oversight of local utilities by KMK and support the Inter-Agency Working Group tasked with implementing the Housing and Communal Services Development Program. Data on water utilities will be used to participate in the International Benchmarking Network (IBNET), the first phase of which will include towns in Tajikistan that have already received assistance from the World Bank and EBRD.
- *Improvement of financial management systems.* Installation of modern accounting and billing systems in all project towns covered under the AF.
- *Municipal Sector Strategy and design of Communal Services Development Financing Mechanism*: This will support implementation of the "Concept for Housing and Communal Services (HCS) Reform 2010-2020" approved in 2010 through the preparation of a Municipal Sector Strategy. The Strategy will focus on identification of municipal reforms and the design of an appropriate rules-based financing mechanism to serve as a Communal Services Development Fund (CSDF) to attract and channel donor

contributions. The CSDF would initially be limited to water supply, sanitation and solid waste management.

- *Feasibility studies*. This finances feasibility studies to prepare investment projects indentified by the Municipal Sector Strategy for financing by the donors and the World Bank.

Component C: Implementation Support: No changes to the scope of the on-going project.

22. **Project costs.** The revised costs, proposed financing by IDA and co-financing by the GoRT are presented below in Tables 1 and 2.

Table 1. Costs by component
(in US dollars equivalent)

Component	***Original cost***	***Changes with AF***	***Revised cost***
Component A: Municipal Infrastructure Rehabilitation	10,500,000.00	9,528,000.00	20,528,000.00
Component B: Technical and Institutional Strengthening	3,000,000.00	1,693,000.00	4,693,000.00
Component C: Implementation Support	3,000,000.00	1,745,000.00	4,745,000.00
Total Project Cost	**16,500,000.00**	**12,966,000.00**	**29,466,000.00**

Table 2. Financing Sources
(in US dollars equivalent)

Financing Sources	***Original Project***	***Proposed Additional Financing***	***Total***
IDA Grant	15,000,000.00	11,850,000.00	26,850,000.00
GoRT cofinancing	1,500,000.00	1,028,000.00	2,528,000.00
Contribution of Households		88,000.00	88,000.00
Total	**16,500,000.00**	**12,966,000.00**	**29,466,000.00**

23. **Co-financing Parameters.** The Ministry of Finance (MOF) confirmed that counterpart financing for the proposed AF has been included in the 2012 GoRT's investment program. The MOF will provide co-financing in amount of US$1,028,000.00 which will be applied to Component A – Sub-Component A1 and A2 of the AF. In addition, the beneficiaries will contribute 40%, or such amount will be contributed on their behalf, to cover the cost of connecting to the water supply network under Sub-Component A3 (Pilot Household Connection Subsidy). The cost of the AF will be also exempt of value added tax (VAT) by the GoRT.

24. **Retroactive financing**: Withdrawals up to SDR1.22 million (US$1.9 million equivalent) under the proposed AF may be made for payments made prior to the signing date of the Financing Agreement but on or after February 10, 2012, for Eligible Expenditures under Component A - Municipal Infrastructure Rehabilitation: Sub-Component A5 (Urgent acquisition of materials for flood protection measures) and upon receipt of a technical, fiduciary and safeguards audit, satisfactory to the Bank, that confirms that agreed-upon works have been completed adequately from a technical, procurement and safeguard standpoint.

25. **Implementation Arrangements.** The AF will be implemented over a period of three years commencing in August 2012, the expected time of effectiveness of the IDA Grant. The proposed AF will use the same implementation arrangements as under the original Project. These arrangements are adequate to support the implementation of the proposed scale-up of existing and new activities. The AF will be implemented under the responsibility of the KMK. The PMU established under MIDP would continue to manage and implement the proposed project. The PMU which reports to the KMK is headed by a Director and manages staff responsible for procurement, disbursement, financial management, technical supervision and monitoring and evaluation. Additional staff (a senior water supply and sanitation engineer and a senior procurement specialist) will be hired by the PMU in order to strengthen its capacity to implement the additional activities under the AF. An Implementation/Supervision Consultant will be hired to support the PMU in project implementation.

26. *Implementation Arrangements for Purchase of Emergency Materials*. The GoRT allocated a 10.0 million Tajik Somoni (US$2.08 million equivalent) to the State Reserve Agency to procure emergency materials to prepare for the anticipated floods of the Spring of 2012. The Ministry of Land Reclamation and Water Resources (MLRWR) which will carry out required civil works prepared a quantified estimate of the materials to be purchased through retroactive financing under the AF and shared that with KMK and the Bank. Out of the US$2.0 million of IDA allocation, US$ 1.9 million will be used for the procurement of the required materials and US$ 100,000 for carrying out the audit for this sub-component. Based on the estimate prepared by the MLRWR, KMK will procure the goods on behalf of the Recipient following World Bank Procurement guidelines. There will be a tripartite contract to be signed by the State Reserve Agency (the Payer via the Ministry of Finance), the KMK (Purchaser) and the supplier for the delivery of the materials. The Ministry of Finance will pay the suppliers directly for the materials upon receiving invoices and receipts submitted by the KMK. The GoRT will make appropriate arrangements satisfactory to the Bank for effective and documented transfer of the goods between KMK, State Reserve Agency and MLRWR. Audits specific to the procurement of these goods and its use to be financed by the IDA will review the consistency between the procured quantities and scope of works as a condition of disbursement.

27. **Project Readiness.** A detailed procurement plan for the first 18 months of the AF has been prepared. The Financing Agreement will include the January 2011 Procurement Guidelines and the World Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credit and Grants dated October 15, 2006 and revised on January 2011, however, Standard Bidding Documents (SBDs) for Goods and Small Works based on the previous version of the Procurement Guidelines (dated May 2004, revised October 2006 and May 2010) will be used until the January 2011 SBDs are available. Similarly National Competitive Bidding (NCB) Documents currently available will be used. Existing financial

management and procurement arrangements are considered to be adequate. Feasibility Studies have been completed and submitted to KMK and the Bank. The FS consultants are developing the detailed designs for Farkhor and Vose including bidding documents. It is expected that most of the procurement packages will be ready during the period between Negotiations and Effectiveness, and therefore procurement of goods and services are expected to commence immediately after Effectiveness of the IDA Grant.

28. **Results Monitoring and Evaluation.** The PMU has experience in monitoring, evaluation and reporting of the outcomes of MIDP. The arrangements for monitoring and evaluation (M&E) which proved to be adequate under MIDP will not change. Monitoring reports will be prepared by M&E consultant on a regular basis with contributions from Implementation/Supervision Consultant, PMU and KMK and submitted to the Bank, and interested government agencies. Separate monitoring reports will be prepared for implementation of the institutional pilots.

29. **Enhanced Supervision and Technical Audits.** To ensure that civil works performed are of presumed quality and meet technical requirements, goods purchased are properly safeguarded and stored with appropriate controls and checks to prevent theft or loss an enhanced supervision arrangements will be put in place under the proposed AF. In addition to the regular supervision missions by the Bank supported by civil engineers, technical audits to be contracted by the PMU will be carried out by independent consultant to ensure that the activities financed under the AF have been implemented correctly with the required quality and safeguarded for future use. The PMU capacity will be also strengthened through the hire of additional staff (senior procurement specialist, senior water supply and sanitation engineer) to enhance supervision of implementation of the proposed AF. In addition, to these annual technical audits that will be carried for the activities financed by the proposed AF, a specific combined technical, fiduciary and safeguard audit will be carried out for the civil works that will use the materials for mitigation of the anticipated floods of the Spring 2012 procured under the sub-component A5 of the Component A of the AF. This combined audit for sub-component A5 will be a condition for disbursing financing retroactively to the GoRT.

30. **Benefits and Risks.** The proposed AF will scale up investments in two economically challenged towns (Farkhor and Vose) with highly degraded municipal infrastructure and will further strengthen institutional capacity of KMK and its branches in all five project towns. The investments will yield substantial direct and indirect benefits, including improved urban environment, reduction in public health risks through the provision of cleaner water, better sanitation and improved solid waste management practices. Institutional development activities will improve management of municipal services, and the capacity of central agencies to oversee sector performance and community needs. The attached Operation Risk Assessment Framework (ORAF) assesses the overall implementation risk of the proposed AF as Substantial given the risks associated with the low capacity of the local utilities and delays in implementation due to the increased activities related to the institutional development pilots that will be implemented by the PMU. The Project will provide targeted training to utility staff, the PMU will be strengthen by hiring additional procurement staff and the Bank team will closely supervise the institutional pilots to ensure success.

31. **Major risks include** operating environment, project design and project stakeholder risks. Tajikistan has been impacted by the global financial crisis and rising food prices resulting in pressure on government budgets and increased social tension. Complicated regional relations as a result of trans-boundary water use issues might delay delivery of goods and equipment. Insufficient public sector capacity coupled with the fiduciary issues constitutes a risk to smooth implementation. Official design standards which require municipal service delivery schemes that might not be financially viable in the current economic environment are a potential risk. A Feasibility Study was prepared and least cost design options were selected for both Farkhor and Vose investments to mitigate these design risks.

32. A public awareness campaign will be carried out to mitigate against communities un-willingness to participate in the pilot metering program for fear of having to pay more in water tariffs. The campaign will publicize the Household Connection Subsidy, including when it would expire. A survey will also be carried out of eligible household to lower the risk that the subsidy will be wrongly targeted. A control group of un-metered houses will monitored to demonstrate the benefits of metering and the resulting reductions in consumer charges versus paying already high flat rates for water.

33. To strengthen the GoRT's commitment to policy reform at the municipal level, the KMK is preparing the municipal sector strategy. The KMK chairs the Inter-Ministerial Agency mandated with implementing the Presidential Decree on Housing and Communal Services Reform. Long term sustainability of the project outcomes, however, will depend on macroeconomic performance of the country, political stability and continued engagement of the Bank to support institutional reforms. No border-related security incidents or concerns have been reported to date for the Farkhor area.

IV. Appraisal Summary

34. **Economic Analysis.** The economic evaluation of all the main project components is based on a least cost methodology. This method has demonstrated that the components are designed to achieve their objectives in the most cost-effective way. The main considerations for the analysis include options for the site of the water intake area, options for wells, location of water storage, types of residential access to water supply, wastewater system implemented, option for wastewater treatment plant and solid waste collection systems. The main options considered are presented in the tables 3, 4 and 5 below.

Table 3. Main options considered for the water abstraction area

	Option 1	**Option 2**
	Rehabilitate existing water abstraction area Preferred option	**Replace with intake from Panj River**
Main characteristics	The option rehabilitates the existing water abstraction area with underground water, which requires limited treatment. The area is 3 km from the town and the transmission	The option replaces the existing abstraction with an intake at Panj River, which is 10 km. from the town. The surface water from the river will require additional

	Option 1	Option 2
	Rehabilitate existing water abstraction area Preferred option	**Replace with intake from Panj River**
	can be done with the existing pipe line.	treatment compared to groundwater, and cost of pumping will be higher.
Cost estimates Size of investment Cost of O&M	 815,000.00 USD (lower) 150,000.00 USD/year (lower)	 3,500,000.00 USD (higher) 220,000.00 USD/year (higher)

Table 4. Main options considered for the water storage

	Option 1 **High-level Tank** Preferred option	Option 2 **Low-level Tank**
Main characteristics	Establishment of a new tank being able to supply to town by gravity	Establishment of new tank at the water abstraction area
Cost estimates Size of investment Cost of O&M	 715,000.00 USD (higher) 20,000.00 USD/year (lower)	 650,000.00 USD (lower) 60,000.00 USD/year (due to energy costs: higher)

Table 5. Main options considered for solid waste

	Option 1	Option 2
	Communal Collection Points	**House Collection and Collection Points** Preferred option
Main characteristics	Establish 16 additional collection points in addition to the existing 19 collection points in town. Solid waste has to be delivered to collection points by users	Introduction of house collection service and keeping the 19 existing collection points in town.
Cost estimates Size of investment Cost of O&M	 Priority investment program 130,000.00 USD Long term inv. pr. 400,000.00 USD (higher) 20,000.00 (40,000.00) USD/year (equal)	 Priority investment program 130,000.00 USD Long term inv. pr. 260,000.00 USD (lower) 25,000.00 (40,000.00) USD/year (equal)

35. The overall per capita investment under the proposed AF is USD 41. The relatively high per capita cost of the project components in Farkhor (US$ 189) is considered justified for the following reasons: i) based on the selection rationale, Farkhor as compared to the other 14

shortlisted towns in the Khatlon region has the poorest level of basic services and had not benefited from prior donor support, as such a substantial effort is needed under the additional financing to bring the town level of service at par to neighbouring towns in the region, ii) the investments will substantially improve the living conditions of the beneficiary population with huge social benefits to women, children and the elderly in particular; and iii) the focused investment intervention in the water sector allows the proposed project to pilot an integrated municipal services approach that includes a sustainable Demand Management/Metering Program, and the launch of a Household Connection Subsidy program, that could be scaled up nationally.

36. There is a severe lack of basic services in Farkhor and Vose. Women and children of Farkhor collect drinking water from storm drains and polluted irrigation canals. Due to insufficient water pressure, the local hospital is required to carry buckets of water for medical needs up four floors. Although the town has a sewerage system, it is unusable and sanitary conditions are desperate. The elderly living in apartment blocks have to walk miles to non-functioning public toilets. The social benefits that are not captured by the economic analysis also highlight that the proposed AF will dramatically improve the quality of life of the beneficiary population and the wastewater and solid waste investments will benefit not only the immediate towns, but the environmental conditions of downstream rivers and irrigation canals.

37. The integrated approach is designed to improve the water supply to those with limited or no access to clean water and improved and sanitation conditions through improved solid waste management. This is expected to significantly reduce pollution of groundwater resources. The metering program will also bring a number of benefits. It will reduce inequality by enabling fair pricing for water and increase the population's willingness to pay for water connections by creating an incentive for water conservation. The metering program will improve the financial sustainability of the water supply operations through increased fee collection and reduction of unaccounted for water. Finally, lessons learned from the metering program will provide basis for assessing incremental benefits from investments of installing water meters in Tajikistan. The Household Connection Subsidy program will give poorer households the opportunity to connect to a reliable piped water supply.

38. **Financial Analysis**. Water supply and wastewater tariffs in project towns are charged a flat rate of 0.6 Tajik Somonis (TJS)/m3 for water supply and 0.3 TJS/m3 for wastewater. Since connections are not metered, customer billing is based on a pre-assessed volume of water consumed and this parameter varies in different cities. The assessed amount of water delivered to customers depends on the number per household. As such, rates differ by town with Kulyab charging 8 TJS/person/month while in Vose it is 2 TJS/person/month for connected residents. The differentiated tariff reflects in part the cost of operation, different consumption norms per household in different cities and the fact that Dangara, Farkhor and Vose do not provide wastewater services. Other reasons for the difference are the different service levels and tariffs policies.

39. The collection rates for water fees range from 30% to 70%. Such low tariffs combined with low collection rates explain the unsatisfactory financial performance of the water company in Farkhor, making it difficult to cover currently daily costs from revenues.

40. The proposed AF is designed to have a positive impact on the financial performance of the utilities by: i) improving water supply in Farkhor and Vose which would result in increased satisfaction by the population who in turn will be more willing to pay for better services; ii) introduction of improved billing and fee collection systems in Kurgan-Tube and Kulyab which will facilitate and improve fee collection rates; and iii) implementation of IT-based accounting and billing system in Dangara, Vose and Farkhor which will improve management control and collection efficiency. The financial impact will likely materialize after completion of the AF. The AF does not propose any short term increases in water tariffs.

41. Projections of the Farkhor water utility indicate that future revenues from water fees will cover operations and maintenance costs with a sufficient margin of 20%. The AF does not aim towards full cost recovery (i.e., including depreciation and amortization) as interventions seek initial stages of service improvements supporting institutional reform pilots under the project. The combination of direct physical investments and pilot investments are projected to increase the overall cost recovery level for the water utility. These projections assume that high billing and collection rates can be achieved by implementing a new billing system coupled with the installation of water meters. Financial projections indicate that the implied tariff for the cost recovery of operation and maintenance is expected to be roughly similar in Vose and Farkhor due to similarities in the water supply system (technology used, and size).

42. An analysis of affordability demonstrates that the current level of tariffs, which is proposed to be unchanged during the project, are fully affordable for the residents in the two primary project towns of Farkhor and Vose under a conservative planning assumption of low growth of disposable income. In particular, the affordability analysis demonstrates that the water bill will be at a level of 2-3% of the household income for the median household in the 20% poorest families.

43. Financial analysis was also conducted to calculate the breakeven costs of solid waste services. Tariffs in both Farkhor and Vose are at 28 TJS/m^3. The assessed amount of solid waste produced is 1.5 m^3/year in Vose and at around 1.0 m^3/year in Farkhor. Collection rates are low at 30%. Projections of future operation and maintenance show unit costs of 20 TJS/m3, making tariff increases and/or collection rates necessary for recovery of cost of operation and maintenance.

44. **Technical Appraisal.** Achieving project objectives requires selecting investments that are technically sound and sustainable taking into account operation and maintenance costs. The selected investments, therefore, represent least cost alternatives and address the most urgent needs of the population of reversing the further deterioration quality services and provide the opportunity to have a positive impact on the financial performance of the companies. Procurement of the emergency services response equipment, fuel, cement and gabion wire mesh will support KMK and MLRWR to better respond to service disruptions due to the anticipated floods in the Spring of 2012, earthquakes and protect municipal infrastructure.

45. **Procurement.** Procurement under the AF will be carried out in accordance with the World Bank's Guidelines: Procurement of Goods, Works, and Non-Consulting Services Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" (January 2011) and

"Guidelines Selection and Employment of Consultants Under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" (January 2011), and the provisions stipulated in the Legal Agreement. The World Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credit and Grants dated October 15, 2006 and revised on January 2011, would also apply. Detailed cost estimates and a procurement plan for first 18 months of the AF have been developed, submitted to the Bank and appraised. The PMU has sufficient procurement capacity as evidenced by the recent assessment and is supported by the senior procurement specialist. Given the relatively short implementation period, number of additional procurement packages, as well as the technical capacity required for the procurement and implementation MIS, the recruitment of additional consultants including procurement staff for the PMU to expedite the procurement processing has been recommended. PMU staff will continue receiving intensive training in financial management and procurement of goods/works and consulting services to further enhance its fiduciary capacity under the proposed AF. The procurement risk under the AF is assessed as Substantial. The PMU will procure goods (cement, fuel and gabion wire mesh) for the Recipient under the retroactive financing arrangements through shopping or NCB or ICB with shortened period for bid preparation from eligible suppliers as per the Bank procurement guidelines and as described in the procurement plan. The GoRT will make appropriate arrangements satisfactory to the Bank for effective and strictly documented transfer of the goods between KMK, State Reserve Agency and MLRWR.

46. **Financial Management and Disbursement.** The financial management responsibilities for the AF would remain with the PMU, which currently implements the MIDP. This PMU has gained required capacity in implementing donor funded projects due to almost 6 years of experience in implementing MIDP. The PMU is adequately staffed and appropriate controls and procedures have been instituted. The PMU submits quarterly FMRs on time and they are satisfactory to the Bank. Procedures for transfer of the goods from KMK to MLRWR and enhanced monitoring of it use will be prepared by the GoRT and agreed with the Bank.

47. The issues highlighted during the Financial Management supervision in May 2011 have been addressed by the PMU. The audits of project financial statements for 2010 for the MIDP and KMK were delayed due to the late selection of the auditor by the State Committee on Investment and State Property that procures audit services for all World Bank financed projects in Tajikistan under the Block Audit arrangement. The audit report for MIDP has since been received, reviewed and found to be satisfactory. The time bound action plan to address issues indicated in the 2010 audit report of the PMU has been received and agreed with the Bank and is being implemented. Two out of three specific remedial actions have been implemented by the PMU. Last remedial action (the upgrade of the automated accounting software) is about to be completed and it is expected that IFRs for first quarter of 2012 will be generated by the upgraded system and provided by the PMU in the format acceptable to the Bank. KMK prepared action plan to address issues reflected in the audit of the financial statements of the entity on March 17, 2012. Although the issues giving rise to the qualified opinion of the KMK audit report will not directly affect the existing implementation arrangements for the proposed AF since the PMU was established as a standalone entity, they will be also addressed as part of the institutional strengthening of the KMK.

48. For purposes of monitoring of project progress and financial performance, Interim Un-audited Financial Reports (IFRs) will be prepared under the AF. The PMU will produce a full set of IFRs every calendar quarter throughout the life of the AF. The format of IFRs will be similar to the original project and will include: (a) Project Sources and Uses of Funds, (b) Uses of Funds by Project Activity; (iii) Statement of Designated Account; and (iv) Disbursement Summary. These financial reports will be submitted to IDA within 45 days of the end of each quarter. The first quarterly IFRs will be submitted after the end of the first full quarter following the initial disbursement. The IFRs for the AF would be consolidated with those of the MIDP, rather than being prepared separately, therefore the accounting system would be modified to be able to generate the consolidated reports.

49. The proposed AF will use the same disbursement mechanism as the original project. Disbursements for all components will follow the transaction-based method, including Advance and Replenishments to the Designated Account; Reimbursements with full documentation; Statement of Expenditure (SOE); Direct Payments and Special Commitments. The PMU would open a Designated Account in US$ for administering the AF in a commercial bank acceptable to the World Bank. The ceiling for the Designated Account and other disbursement details will be provided in the Disbursement Letter. However, due to the overdue outstanding Designated Account balances under few projects in Tajikistan that were more than six months past their respective closing dates no new Designated Accounts will be established for the proposed AF, until the refund or documentation has been received by the Bank. Hence, the provision for using the Advance as a disbursement method for the AF will not be included in the Disbursement Letter. If the issues involving these operations are resolved prior to the issuance of the Disbursement Letter (i.e. at the signing of the new operation), then the letter will be revised to include such a provision. If the issues are resolved subsequently, then an amended Disbursement Letter will be issued to include the provision for a Designated Account.

50. Under retroactive financing, payments made prior to the date of signing the Grant Agreement, except that withdrawals up to an aggregate amount not to exceed SDR 1.22 million (US$1.9 million equivalent) be made for payments made prior to the date of signing the Grant Agreement but on or after February 10, 2012, for Eligible Expenditures under the Sub-Component A5 of the Component A – Municipal Infrastructure Rehabilitation. Disbursements requirements for expenditures claimed under retroactive financing will be upon submission of technical, fiduciary and safeguard audit, satisfactory to the Bank, that confirms that agreed-upon works have been completed adequately for a technical, procurement and safeguard standpoint. The GoRT makes any advance payments entirely at its option and without commitment on the part of the Bank.

51. **Social Assessment**. A social analysis was undertaken to identify targeted activities for vulnerable groups. The analysis also looked at opportunities for inclusion of affected groups during project preparation and implementation. Farkhor and Vose are highly disadvantaged with regard to water and sanitation. The focus of the project investments in two towns will significantly benefit vulnerable groups by having a visible impact on the quality of service.

52. A key finding identified women living in 3 and 4 storey apartments in Farkhor as one of the most vulnerable groups. These apartments often lack any internal water supply leading

women and children to spend hours a day carrying containers of water from common stand pumps up stairs to their apartments. This is aggravated by the lack of sanitation facilities requiring households to go to common toilets, resulting in more trips.

53. The project was redesigned to include the provision of metered water supply to all apartments in Farkhor as part of the Metering Program. This will benefit a total of 660 apartments from the most vulnerable households, mostly women and young girls. The Pilot Metering Program will supply new meters to all customers who have, or will have access to piped water. In addition, all new household connections will receive a connection subsidy of 60% of the cost of connecting to the network. The meters are likely to facilitate a more equitable charge on water usage based on consumption rather than a flat tariff. A Public Awareness Campaign will be carried out under the project to inform the beneficiaries on the availability of the subsidy and the benefits of having water meters.

54. Farkhor and Vose's population uses common pit latrines as the toilets in most apartment blocks are sealed off or dysfunctional due to blocked drains. It is a common for 8 apartment blocks (each with 20 apartments or more) to share poor maintained 6 pit latrines located 10 minutes walk away. This severely affects disabled, elderly, pregnant women and children. There are also serious health risks in residential areas of Farkhor due to open piles of garbage uncleared for extended periods, very close to residential areas where children play. Beneficiaries currently are paying the Municipality to clear the garbage, but it is infrequent resulting in constant open piles all over the town. Communities expressed a willingness to pay for efficient waste disposal services as well as to gain knowledge of recycling, vermiculture and other viable options for waste management.

Safeguard Policies

55. **Environmental Safeguards**. The proposed expanded and new activities of the AF do not raise the environmental category of the project nor trigger any new safeguard policies and is a Category B. The activities to be financed under the AF are of the same nature of those implemented under initial project and thus they are not expected to generate significant adverse impacts, neither environmental nor social. Compliance with safeguards policies under the original project has been satisfactory, and no adverse impacts were registered.

56. As the proposed AF would support the same type of activities which may generate only insignificant, short-term and localized impacts, the Environmental Management Plan (EMP) prepared for the initial project which represents a framework Environmental Assessment (EA) document will be also applicable for the AF project. As part of the AF, the environmental management provisions for activities under the project have been updated. The updated Environmental Management Plan (EMP) was disclosed on January 30, 2012 in country and Infoshop. Consultations were held on February 3, 2012 in Dushanbe and February 7, 2012 in Vose and Farkhor.

57. Taking into account the updated EMP provisions, the KMK will also conduct a baseline study for the new project sites by identifying project potential impacts, mitigation and monitoring measures to prepare a site specific EMPs to be disclosed in the project area and

consulted with all interested parties. Once the draft of the site specific EMPs are prepared, disclosed and consulted with all interested parties, they will be officially submitted to the State Ecological Expertise (SEE) for its review and approval. After SEE approval the site specific EMPs will be disclosed in the country as well as in the WB Infoshop and will be used during project implementation. Preparation and approval of site specific EMPs are a condition of Project Effectiveness.

58. In response to the request of the Recipient to the Bank to help the government finance the procurement of materials (cement, wire mesh and fuel) to urgently carry out flood protection and mitigation measures for rehabilitation of river embankment due to expected severe flooding in spring 2012, a new project sub-component A5 "Acquisition of materials for flood protection measures" was added to the AF. The materials will be financed retroactively. The Recipient provided further details with regard to the works and locations of where rehabilitation of embankments will take place prior to negotiations. Since the proposed activities under this sub-component falls under category C no other EA actions are needed but a rapid post-implementation environmental audit; no category B works will be supported by the materials to be acquired under the proposed AF. The submission of a combined technical, fiduciary and safeguard audit, satisfactory to the Bank, that confirms that agreed-upon works have been completed adequately for a technical, procurement and safeguard standpoint is a disbursement condition for the retroactive financing under the sub-component A5.

59. The town of Farkhor has recently acquired a new approved sanitary landfill which is at about 5 km from the town. While solid waste enterprise has already started to dispose wastes as well as waste waters on the site, no necessary civil works for ensuring environmental security of the landfill were undertaken. The new landfill has the required operational license approved by sanitary and environmental authorities, which was submitted to the Bank by the PMU.

60. *Notification to riparian countries.* The OP 7.50 applies to the Project as the city of Farkhor is located on an international waterway as defined by paragraph 1(b) of OP 7.50. However, considering the nature of the investments, an extension of the exception to the external notification requirements of OP 7.50, set forth in paragraph 7(a) for the AF has been approved by the ECA Regional Vice President on March 6, 2012 (Management memorandum is available in Project Files). The Project involves rehabilitation of ongoing schemes that: (i) will not adversely change the quality or quantity of water flows to the other riparians; and (ii) will not be adversely affected by the other riparian's water use.

61. **Social Safeguards**. The expected long term and cumulative impacts of the proposed activities are mostly positive and include improved water supply and sanitation infrastructure as well as improved health and livelihood of the local population of participating cities. The ongoing project triggered OP 4.12 and Resettlement Action Plans (RAPs) were prepared and implemented in 3 towns of Vahdat, Kurgan-Tube and Istaravshan. The implementation has been satisfactory to date and the PMU has gained capacity to understand, prepare and implement the requirements of RAPs. Project Affected Persons (PAPs) were satisfied and payments of compensation were complete and satisfactory to the Bank.

62. A Resettlement Policy Framework (RPF) for the AF which will inform all activities involving land acquisition, restriction of access to land or services and loss of assets has been

developed, consulted on and disclosed (in-country and in the InfoShop). The RPF was disclosed to the public on January 30, 2012 and consultations conducted on February 3, 2012 in Dushanbe and February 7, 2012 in Vose and Farkhor. The completed pre-feasibility studies and the on-going feasibility study indicate that impacts will be limited as the project will largely be limited to rehabilitation of existing structures and construction of infrastructure on public streets and roads. The RPF, therefore, is intended as a practical tool to guide the preparation of Resettlement Action Plans (RAPs) for activities during implementation of the comprehensive program. If any impacts are identified, individual RAPs will be developed for each subproject based on the guidelines and procedures highlighted in the RPF document.

Annex 1: Results Framework and Monitoring
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

Revisions to the Results Framework		Comments/ Rationale for Change
PDO		
Current (PAD)	*Proposed*	
To improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project (Kurgan Tube, Kuyab, Istaravshan, Rasht, Vose, Vahdat, Kanibodam, Dangara)	To improve the availability, quality and efficiency of basic municipal services for the population of the towns which participate in the project. An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.	Continued. The list of project towns is amended for AF in the Legal documents to reflect new activities under AF: infrastructure investments are in Farkhor (new to the project) and Vose previously covered by MIDP ; Institutional strengthening activities under AF will be carried out in Farkhor, Vose, Kurgan Tube, Dangara and Kulyab; In total, the RF will reflect 9 project towns, while the new activities under AF will cover 5 towns;
PDO level indicators		
Current (PAD)	*Proposed change**	
Availability and quality of basics infrastructure services in participating towns during the project implementation:		
Increase in availability of water supply as expressed by percentage of population with at least 16 h/day of water in both summer and winter (Kurgan Tube, Dangara, Vose, Kulyab, Vahdat, Rasht, Kanibodam , Istaravhsan)	Continued for 8 original towns and introduced Farkhor;	
Improved solid waste collection measure by percentage of population covered by the municipal waste collection and removal	Dropped	Replaced by more specific indicator below;
Improved solid waste collection services as percentage of population with access to regular waste collection services at least once a week	Continued for original 8 towns and introduced for Farkhor;	Targets continued for 8 original project towns, new target is set for Farkhor;
	Number of people in urban areas provided with access to improved water sources under the project;	New core indicator; It was not in the original PAD and Supplementary Letter, was added for ISR, measured since 2009; targets for 7 original towns

Revisions to the Results Framework		Comments/ Rationale for Change
		continue, new targets are set for Vose and Farkhor (to reflect AF activities);
Efficiency of utilities, operating basics infrastructure services in the participating project towns		
Efficiency of water utilities, measures through reduction of unaccounted for water	Continued for 8 original project towns and introduced for Farkhor;	Targets continue for original 7 towns, new targets are set for Vose and Farkhor;
Efficiency of water utilities, measured through reduction of energy costs (as percentage of total operating costs) in Kanibodam, Kulyab, Kurgan Tube, Rasht, Vose, Vahdat, Dangara, Istaravhsan;	Continued for original 8 towns and introduced for Farkhor;	Targets continue for 7 original towns, new targets are set for Vose and Farkhor;
	Improved financial efficiency of water utilities measured though improvement of revenue to total operating cost ratio in Farkhor and in Vose;	New indicator; not in PAD and supplementary letter; Added to reflect activities under AF in 2 towns; measured since 2012;
	Project beneficiaries (for water supply services)	New, not in PAD and in Supplementary letter; added for AF; Covers 9 towns; measured since 2009;
Satisfaction of the population with basic infrastructure services increases in participating small towns during the project implementation period - Decrease in the number of households reporting poor water quality (as percentage of population) Improved customer rating of water supply as expressed in percentage rating service as satisfactory	Continued for AF, and will be applied in 8 original towns and introduced for Farkhor;	
	Length of river embankment rehabilitated by the government to mitigate risks associated with 2012 Spring flooding.	New indicator to monitor use of urgently needed materials in preparation for Spring 2012 flooding.
Intermediate Result indicators for each component:		
Project investments are satisfactory completed in participating small towns (number of subprojects implemented);	Dropped	dropped for AF and replaced by new indicators for each component
Technical measures in business plans are satisfactory	Dropped	dropped for AF and replaced by new indicators for each component

Revisions to the Results Framework		Comments/ Rationale for Change
implemented in the participating utilities;		
Subproject pipeline is satisfactory prepared and robust;	Dropped	dropped for AF and replaced by new indicators for each component
Reporting on utility performance is regular and satisfactory;	Dropped	dropped for AF and replaced by new indicators for each component
Managerial and financial improvements in business plans are prepared and implemented;	Dropped	dropped for AF and replaced by new indicators for each component
Project implementation progress and financial reporting is satisfactory and in accordance with the schedule;	Dropped	dropped for AF and replaced by new indicators for each component
Result's of auditor's reports;	Dropped	dropped for AF and replaced by new indicators for each component
Component A: Municipal Infrastructure Rehabilitation		
	Piped household water connections that are benefiting from rehabilitation works undertaken by the project	Not in the original PAD; added for ISR as core indicator, measured since 2009;
	New piped household water connections that are resulting from the project intervention	New; was not in original; was added as core indicator, measured since 2009;
	Improved community water points constructed or rehabilitated under the project	Not in original PAD; added for ISR, measured since 2009;
	Number of metered connections in Farkhor	New, not in PAD; added for AF, will be applied only to Farkhor, where the AF will finance the metering program; measured since 2012;
	Improvement of collection rate in Kurgan Tube and Kulyab due to introduction of payment system through electronic mobile terminals and kiosks (measured though the number of electronic payments) ;	New, not in PAD; added for AF in 2 towns, to reflect new activities; it will be measured since 2012;
Component B: Technical and Institutional Strengthening		
	Number of utilities that the project is supporting	Not in original PAD and in Supplementary Letter; added as core indicators for ISR, measured since 2009;

*** Indicate if the indicator is Dropped, Continued, New, Revised, or if there is a change in the end of project target value**

REVISED PROJECT RESULTS FRAMEWORK

Project Development Objective (PDO): Project Development Objective (PDO): to improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project**.** An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.

PDO Level Results Indicators	Core	UOM[4]	Baseline Original Project Start (2006)	Progress To Date (2012)[5]	Cumulative Target Values			Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
					Aug 2012-2013	Aug 2013-2014	Aug 2014-Aug 2015				
1. PDO level indicator: Increase in availability of water supply as expressed by percentage of population with at least 16 h/day of water in both summer and winter in:	☐	%						Annual	KMK/ PMU	KMK/ PMU	The indicator continue to be measured for 7 original towns, showing achieved results; for Vose the new target is set to reflect AF activities; Farkhor is new town to the project, the original baseline (2006) is n/a; the AF target is set;
Istaravshan			24	44	44	44	44				
Kanibodam			2	17	17	17	17				
Rasht (Gharm)			68	84	84	84	84				
Vahdat			26	45	45	45	45				
Dangara			60	79	79	79	79				
Kulyab			13	45	45	45	45				
Kurgan Tube			58	75	75	75	75				
Vose			6	32	32	32	70				
Farkhor			n/a	0	0	0	80				
2. PDO level Indicator: Improved solid waste collection measured by percentage of population covered with regular solid waste collection services (at least once per week) in:	☐	%						Annual	PMU/ KMK	PMU/ KMK	The project will continue to measure this indicator in 8 original towns against initial

[4] **UOM = Unit of Measurement.**

[5] **For new indicators introduced as part of the additional financing, the progress to date column is used to reflect the baseline value.**

Project Development Objective (PDO): Project Development Objective (PDO): to improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project**.** An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.											
PDO Level Results Indicators	**Core**	**UOM**[4]	**Baseline Original Project Start (2006)**	**Progress To Date (2012)**[5]	**Cumulative Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Aug 2015**				
Istaravshan			73	87	87	87	87				target; the AF target is set for Farkhor town as it is new to the project; Under AF the project will enhance timely collection of solid waste, liquidation of illegal in-town dumps, and safe disposal in Farkhor and Vose;
Kanibodam			58	77	77	77	77				
Rasht (Gharm)			18	32	32	32	32				
Vahdat			31	49	49	49	49				
Dangara			38	58	58	58	58				
Kulyab			21	45	45	45	45				
Kurgan Tube			38	75	75	75	75				
Vose			35	35	35	50	50				
Farkhor			n/a	0	50	80	90				
3. PDO level Indicator: Number of people in urban areas provided with access to improved water sources under the project in:			0	189805	189805	189805	236864		KMK/ PMU	KMK/ PMU	core indicator, has aggregated value, as in ISR and breakdown per town; The target will continue for original 7 towns. New targets are set for Vose (70%) and Farkhor (80%) of population will be covered with water services through individual connections and public standpipes;
Istaravshan			0	27 291	27 291	27 291	27 291				
Kanibodam			0	8 203	8 203	8 203	8 203				
Rasht (Gharm)	☒	Number	0	39 604	39 604	39 604	39 604	Annually			
Vahdat			0	15 637	15 637	15 637	15 637				
Dangara			0	17 130	17 130	17 130	17 130				
Kulyab			0	39 604	39 604	39 604	39 604				
Kurgan Tube			0	53 925	53 925	53 925	53 925				
Vose			0	12 150	12 150	12 150	14 270				
Farkhor			n/a	0	0	0	21 200				

Project Development Objective (PDO): Project Development Objective (PDO): to improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project**.** An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.

PDO Level Results Indicators	Core	UOM[4]	Baseline Original Project Start (2006)	Progress To Date (2012)[5]	Cumulative Target Values			Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
					Aug 2012-2013	Aug 2013-2014	Aug 2014-Aug 2015				
4. PDO level indicator: Efficiency of water utilities measured through unaccounted for water in:	☐	%						Annually	KMK/ PMU	KMK/ PMU	he results will me measured for 8 towns against original target. Farkhor is new town to the project;
Istaravshan			62	24	24	24	24				
Kanibodam			58	17	17	17	17				
Rasht (Gharm)			65	58	58	58	58				
Vahdat			60	56	56	56	56				
Dangara			65	13	13	13	13				
Kulyab			67	18.4	18.4	18.4	18.4				
Kurgan Tube			60	56	56	56	56				
Vose			60	54	52	52	52				
Farkhor			n/a	91	91	91	50				
5. PDO level indicator: Efficiency of water utilities, measured through energy consumption costs (as percentage of total operating costs)	☐	%						Annually	KMK/ PMU	KMK/ PMU	In Farkhor, at the baseline the system is underperforming, and the use of energy is low; at the end of the project, the system will use more energy to comply with 16h/day service duration; * system is gravity fed and does not rely on electricity
Istaravshan			15	3.8	3.8	3.8	3.8				
Kanibodam			25	11.47	11.47	11.47	11.47				
Rasht (Gharm)			17	n/a*	n/a	n/a	n/a				
Vahdat			16	10.7	10.7	10.7	10.7				
Dangara			9	n/a*	n/a	n/a	n/a				
Kulyab			16	0,9	0,9	0.9	0.9				
Kurgan Tube			15	3.07	3.07	3.07	3.07				
Vose			35	4.35	4.35	4.35	20				
Farkhor			n/a	4,62	4.62	4.62	15				
6. **PDO level indicator:** Financial	☐	%	n/a					Annual	KMK/	KMK/	new indicator,

Project Development Objective (PDO): Project Development Objective (PDO): to improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project**.** An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.											
PDO Level Results Indicators	**Core**	**UOM**[4]	**Baseline Original Project Start (2006)**	**Progress To Date (2012)**[5]	**Cumulative Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Aug 2015**				
efficiency of the water utilities, measure through revenue to operating costs ratio in: Farkhor and Vose				Farkhor: 0.39 Vose: 1	0.39 1	0.39 1	1.1 1		PMU	PMU	introduced for AF in 2 towns, where the institutional strengthening activities will be enhanced by intensive physical investments;
7. **PDO level indicator**: Efficiency of water utilities, measures through reduction of energy costs per unit of water produced in Farkhor	☐	kWh/m3	n/a	0.07	0.07	0.07	0.06	at the beginning and at the ICR stage;	PMU/ KMK	PMU/ KMK	
8.PDO level indicator: Project beneficiaries (for water supply services activities)	☐							at the start and at ICR stage	PMU/ KMK	PMU/ KMK	Measured in original 8 towns and in Farkhor, equal to "number of people with access to improved water sources under the project".
Total number of project beneficiaries in 9 towns:		number	0	189 805	189 805	189 805	236 864				
Out of which women		%	0	53	53	53	53				
9. PDO level indicator: Satisfaction of the population with basis infrastructures services in participating small towns during the project measured through:	☐	%									

Project Development Objective (PDO): Project Development Objective (PDO): to improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project**.** An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.											
PDO Level Results Indicators	**Core**	**UOM**[4]	**Baseline Original Project Start (2006)**	**Progress To Date (2012)**[5]	**Cumulative Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Aug 2015**				
Percentage of households reporting poor water quality											
Istaravshan			56	33	33	33	33	annually	KMK/ PMU	KMK/ PMU	
Kanibodam			83	83	49	49	49				
Rasht (Gharm)			6	3	3	3	3				
Vahdat			16	5	5	5	5				
Danghara			46	23	23	23	23				
Kurgan Tube			28	11	11	11	11				
Kulyab			39	13	13	13	13				
Vose			51	28	28	28	28				
Farkhor			n/a	88	88	88	10				
Customer rating of water supply services, expressed as percentage of customers rating the services as satisfactory;											
Istaravshan			13	36	36	36	36				
Kanibodam			8	29	29	29	29				
Rasht (Gharm)			13	35	35	35	35				
Vahdat			36	59	59	59	59				
Dangara			56	75	75	75	75				
Kulyab			44	69	69	69	69				
Kurgan Tube			45	71	71	71	71				
Vose			40	64	64	64	70				
Farkhor			n/a	31	31	31	80				
10. PDO Level Indicator: Length of river embankment rehabilitated by the government to mitigate risks associated with		linear meters	n/a	0	4500	4500	4500	during year 1	KMK/ PMU	KMK/ PMU	subject to completion of works supervised by the Ministry of

Project Development Objective (PDO): Project Development Objective (PDO): to improve availability, quality and efficiency of the delivery of basic municipal services in towns, participating in the project**.** An added objective, as an urgent response to the anticipated floods of the Spring of 2012, is to contribute to their mitigation with the supply of emergency materials.											
PDO Level Results Indicators	**Core**	**UOM[4]**	**Baseline Original Project Start (2006)**	**Progress To Date (2012)[5]**	**Cumulative Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Aug 2015**				
2012 Spring flooding.											Melioration and Water Resources

Intermediate Results and Indicators											
Intermediate Results Indicators	**Core**	**Unit of Measurement**	**Baseline Original Project Start (2006)**	**Progress To Date (2012)**	**Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Dec 2014**				
Intermediate Result 1: Municipal Services Rehabilitation (component A)											
1. Intermediate result indicator one: Piped household water connections that are benefiting from rehabilitation works undertaken by the project	☒	Number	0	89925	89925	89925	94805	Annual	PMU/ KMK	PMU/ KMK	value is aggregated for all project towns, as in ISR; plus also shown per each town; targets continue for 7 initial towns,; new target is set for Vose Farkhor has joined the project at AF stage; in F: 2860- 2200 hh connections and 660 apartment connections;
Istaravshan			0	5100	5100	5100	5100				
Kanibodam			0	3500	3500	3500	3500				
Rasht (Garm)			0	1100	1100	1100	1100				
Vahdat			0	1247	1247	1247	1247				
Dangara			0	2500	2500	2500	2500				
Kulyab			0	11058	11058	11058	11058				
Kurgan Tube			0	11720	11720	11720	11720				
Vose			0	2000	2000	2000	2000				
Farkhor			n/a	0	0	0	2860				

Intermediate Results and Indicators											
Intermediate Results Indicators	**Core**	**Unit of Measurement**	**Baseline Original Project Start (2006)**	**Progress To Date (2012)**	**Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Dec 2014**				
2. Intermediate result indicator two: Improved community water points constructed or rehabilitated under the project	☒	number	0	1612	1612	1612	1702	during year 3	PMU/ KMK	PMU/ KMK	aggregated value, as in ISR; targets for original 7 towns continue; Farkhor is new to this activity; 40- number of existing public standpipes, which will be rehabilitated; Vose: 21 standpipes were installed by the MIDP main project; 29 additional standpipes will be constructed /rehabilitated
Istaravhsan			0	180	180	180	180				
Kanibodam			0	165	165	165	165				
Rasht (Garm)			0	80	80	80	80				
Vahdat			0	66	66	66	66				
Dangara			0	226	226	226	226				
Kulyab			0	545	545	545	545				
Kurgan Tube			0	340	340	340	340				
Vose			0	21	21	21	40				
Farkhor			n/a	0			40				
3. Intermediate result indicator three: New piped household water connections that are resulting from the project intervention	☒	number	0	18568	18568	18568	19618	during year 3	PMU/ KMK	PMU/ KMK	indicator has aggregated value, as in ISR; the target reflects the scope of support for new connections by grant co– financing in Farkhor and Vose; targets for original 7
Istaravshan			0	1300	1300	1300	1300				
Kanibodam			0	900	900	900	900				
Rasht (Garm)			0	98	98	98	98				
Vahdat			0	3810	3810	3810	3810				

Intermediate Results and Indicators											
Intermediate Results Indicators	**Core**	**Unit of Measurement**	**Baseline Original Project Start (2006)**	**Progress To Date (2012)**	**Target Values**			**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Comments**
					Aug 2012-2013	**Aug 2013-2014**	**Aug 2014-Dec 2014**				
Dangara			0	300	300	300	300				towns continue;
Kulyab			0	7130	7130	7130	7130				
Kurgan Tube			0	4100	4100	4100	4100				
Vose			0	720	720	720	1020				
Farkhor			n/a	0	0	0	850				
4. Intermediate Result Indicator four*:* Number of metered connections in Farkhor	☐	number	NA	Farkhor 0	0	0	3400		PMU/ KMK	PMU/ KMK	only for Farkhor: 1890- current number of individual connections; plus 660 in apartments and 850 new hh connections expected;
5. Intermediate result Indicator five: Improvement of collection in water utilities of Kurgan Tube and Kulyab due to introduction of payment system through mobile electronic kiosks (measured through the percentage of electronic payments for water supply and wastewater services);		%	n/a	0			50	Annual	KMK /PMU	KMK /PMU	
Intermediate Result 2: Technical and institutional strengthening (Component B);											
***1. Intermediate Result Indicator One**:* Number of utilities the project is supporting	☒	Number	0	8	9	9	9	Annually	PMU/ KMK	PMU/ KMK	indicators refers to water utilities;

Annex 2: Operational Risk Assessment Framework
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring
Stage: Board

<table>
<tr><th>Project Stakeholder Risks</th><th colspan="2">Rating:</th><th colspan="2">Substantial</th></tr>
<tr><td rowspan="3">Description :
Recipient: Complicated regional relations as a result of trans-boundary water use issues might affect implementation of the project due to delays with the delivery of required goods and equipment.

Direct Stakeholders: At the stakeholder level, communities may be un-willing to participate in the pilot metering program for fear of having to pay more in water tariffs and households may not avail of the Household Connection Subsidy due to lack of awareness of the program and/or delay in submitting applications to the utility, this could delay implementation of the Metering Program and jeopardize the pilot.</td><td colspan="4">Risk Management:
The Bank is supporting dialogue on regional issues (particularly water and energy). As part of its regional approach, the Bank has initiated a comprehensive Central Asia Energy-Water Development Program (CAEWDP), to support the countries of the region in well-informed decision-making to manage their water and energy resources, strengthen regional institutions, and stimulate investments. The Bank will continue to analyze and try to anticipate developments.</td></tr>
<tr><td>Resp: Bank</td><td>Stage: Implementation</td><td>Due Date:</td><td>Status: Not yet due</td></tr>
<tr><td colspan="4">Risk Management:
Proposed project will extend investments to two economically challenged towns (Farkhor and Vose) with highly degraded municipal infrastructure, and to further strengthen institutional capacity of KMK and it branches in all five project towns. The investments will yield substantial direct and indirect benefits, including improved urban environment, reduction in public health risks through the provision of cleaner water, better sanitation and improved solid waste management practices by improving willingness of local population to pay. Project design includes focused interventions to ensure
i) rehabilitation of assets and improvement of service before the start of billing;
ii) introduction of modern billing and collection technologies to build the trust of the local communities;
iii) capacity building of the KMK to improve the quality of service delivery to public;
iv) launch and implementation of Communication and Public Awareness Campaigns targeting behavioral changes required by improved services, water conservation, benefits of metering program, information dissemination regarding connection subsidy availability;
v) Outcomes of the monitoring of the control group of un-metered houses will be disseminated to demonstrate the benefits of metering and the resulting reductions in consumer charges versus paying already high flat rates for water;</td></tr>
</table>

Local KMK employees: Staff turnover in the local utilities participating in the project may have negative influence on managerial, fiduciary and technical capacity and may cause implementation delays. Staff may resist new policies aimed at improvement of performance.	**Resp: Client**	**Stage: Implementation**	**Due Date:**	**Status: Not yet due**
	Risk Management: The project will provide support for staff professional development of the staff in the local utilities and development of inceptives to retain staff through the following measures: i) Training program for KMK staff to improve their skills; ii) Attention to management continuity and effective communication with staff; iii) KMK to develop staff incentives to retain qualified staff; iv) improved financial sustainability of the local utilities will allow timely payment of the higher salaries by improving morale of the staff;			
	Resp: Client	**Stage: Implementation**	**Due Date:**	**Status: Not Yet Due**
Implementing Agency Risks (including fiduciary)				
Capacity	**Rating:**	**Substantial**		
Description : Implementation may fall behind schedule due to weak managerial, strategic planning and implementation capacity at the PMU and the KMK.	**Risk Management :** Project design includes focused intervention to ensure: i) that detail designs and bid documents are completed by Project Effectiveness to ensure that procurement of goods and services including start of civil works commence at the start of implementation. A detailed Procurement Plan has been prepared for the first 18 months to facilitate this. ii) An international implementation consultant will support the PMU and the KMK during Project implementation; iii) Project design includes support to capacity building of KMK at the center and local utilities, with specific focus on improving utility managements, operations and maintenance, and financial sustainability; iv) Procurement and financial management staff would continue to receive intensive training on fiduciary guidelines and procedures, and in English language training; v) support to KMK in developing a Management Information System (MIS) that will promote better collection and analyses of data required to monitor the performance of water utilities and allow participation in International Benchmarking Network (IBNET); vi) The Project will support setting up and upgrade of accounting software in water utilities in the cities of Kurgan-Tube, Kulyab and Dangara; establishment of complaints handling and emergency repair unit within the local KMK branches to build the local capacity.			
	Resp: Bank	**Stage:**	**Due Date:**	**Status: Not**

		Implementation		**Yet Due**
Governance	**Rating:**	**Moderate**		
Description : Local municipality and local KMK branch may not be committed to introducing better business practices including improved billing and collection.	**Risk Management :** The Mayors of Farkhor and Vose offered to provide local counter-part financing of up to USD$50,000.Although this contribution will not be included in the project as it would delay delivery due to legal provisions that would need to be completed. This is an indication of the commitment from the local mayors to support implementation of the measures being proposed under the project. In addition, as Implementation Agreement will be signed between the KMK and PMU that will set out the division of responsibilities to ensure smooth implementation of the project. Formal commitments have been already received from the municipalities of Farkhor and Vose.			
	Resp: Client	**Stage: Implementation**	**Due Date:**	**Status: Not Yet Due**
Project Risks				
Design	**Rating:**	**Moderate**		
Description : Current official design standards require solutions for water supply, sewerage and solid waste schemes that might not be financially viable in the current economic environment. Inclusion of a dual implementing arrangement for the Municipal Strategy may delay delivery of project to the Board.	**Risk Management :** i) Feasibility Study is being carried out with the significant input from the KMK, local municipality and community to better define design and ensure ownership of the project design and to explore innovative solutions to increase coverage of services; ii) Results of social assessment have been integrated into the design of the project; iii) The Project will finance the development and implementation of an appropriate communication strategy that will support among other things a robust public awareness campaign; v) It was agreed that the development of the Municipal Strategy will be coordinated by the Inter-Ministerial Agency that is chaired by the KMK director to ensure that appropriate and the most efficient implementing arrangements are considered in the project. There is also support from the Ministry of Finance and the Ministry of Economy and other agencies to develop a communal services fund in the near future based on the recommendations of the Municipal Strategy.			
	Resp: Client/Bank	**Stage: PRN**	**Due Date:**	**Status: Completed**
Social & Environmental	**Rating:**	**Moderate**		
Description : i) Unexpected social opposition to the start of billing and	**Risk Management :** i) Social assessment was carried out by the Feasibility Consultants and will be used to			

<table>
<tr><td rowspan="6">collection may lower the ability of local KMK to maintain rehabilitated infrastructure
ii) Risk that perhaps some vulnerable groups will be negatively impacted

Stipulated mitigation measures will be not implemented and monitoring activities could be not adequate</td><td colspan="4">develop a communications strategy for the communities and understand the concerns of vulnerable groups;
ii) Consultations with the local communities has been carried out to discuss the scope and objectives of the proposed project;
iii) An awareness campaign will be included in project design;
iv) Communities will be consulted during development of detail designs to determine the location of the new solid waste dumps.</td></tr>
<tr><td>Resp: Client</td><td>Stage: PRN and Implementation</td><td>Due Date:</td><td>Status: Not Yet Due</td></tr>
<tr><td colspan="4">Risk Management :
EMP has been updated and RPF developed to mitigate any adverse environmental / social impacts. The M&E arrangements have been tested during the implantation of the Municipal Infrastructure Development Project. The implementing agency and the PMU have the required capacity.</td></tr>
<tr><td>Resp: Client</td><td>Stage: PRN</td><td>Due Date:</td><td>Status: Completed</td></tr>
<tr><td colspan="4">Risk Management :
The Bank’s team will closely monitor EMP / RPF implementation, providing relevant environmental and social safeguards capacity building and assistance.</td></tr>
<tr><td>Resp: Bank</td><td>Stage: Implementation</td><td>Due Date:</td><td>Status: Completed</td></tr>
<tr><td>Program & Donor</td><td>Rating:</td><td colspan="3">Low</td></tr>
<tr><td rowspan="4">Description :
Poor coordination with the donors in Tajikistan might result in duplication of the efforts, low efficiency of the use of scarce financial resources and limited development impact on the ground.</td><td colspan="4">Risk Management :
The project team approached donors in Tajikistan to discuss initial concept of the project to coordinate development efforts. The team will be maintaining close contact with the donor to ensure that input could be provided to the Bank during project preparation to identify the areas of potential partnership and leverage development impact. The Monitoring Information System (MIS) that will be installed in KMK under the project will provide better opportunities for donors to coordinate efforts through access to required data.</td></tr>
<tr><td>Resp: Bank</td><td>Stage: Implementation</td><td>Due Date:</td><td>Status: Not yet due</td></tr>
<tr><td colspan="4">Risk Management :
To improve and enhance framework for coordination of the donors in the sector the project envisages financing of the development of KMK capacity for regulation and strategic planning of the municipal services sector and development of a municipal sector</td></tr>
</table>

	strategy. In addition, the project will explore appropriate financing mechanisms for low capacity countries that could functions as a Fund that donors active in the sector could contribute to.			
	Resp: Bank	**Stage: Implementation**	**Due Date:**	**Status: Not yet due**
Delivery Monitoring & Sustainability	**Rating:**	**Substantial**		
Description : Better project management is still a challenge. Transformation of the utility & municipality may not be sustainable in the long run due to need for reforms. Civil works performed are of low quality and do not meet technical requirements, goods purchased are not properly safeguarded and stored with appropriate controls and checks to prevent theft or loss	**Risk Management :** i) Implementation consultant will provide support to the KMK and the PMU to reduce the risk of management inefficiencies. The AF will include an institutional building capacity component to further build and strengthen the capacity of the KMK, PMU and local municipalities; ii) The World Bank will be maintaining dialogue with the Government of Tajikistan on the sector reforms and to develop comprehensive Municipal Sector Strategy to ensure ownership and implementation of the instructional reforms; iii) Project will finance M&E activities and further build capacity of the KMK and PMU; iv) Project will finance technical audits to verify that civil works performed are of presumed quality and meet technical requirements; goods purchased are properly safeguarded and stored with appropriate controls and checks to prevent theft or loss.			
	Resp: Bank	**Stage: Implementation**	**Due Date:**	**Status: Not yet due**
Overall Risk Following Review: Substantial				
Implementation Risk Rating: Substantial				

Annex 3: Detailed Description of Modified or New Project Activities
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

General Principles

Selection of towns to be covered and all investment activities were selected on the basis of extensive discussions with the KMK, municipalities and local utilities about the specific priorities for each town. Due care was also taken to focus physical investments only on towns or sectors where there is no substantial on-going or confirmed attention paid by other donors (ADB, JICA, GIZ, SECO, EBRD). Priority was given to the southern region of Kathlon, since it is the poorest in the country and therefore is a strategic focus of both the GoRT and the donors. Similarly with respect to support on the GoRT on the policy dialogue, extensive consultations were held with the Ministry of Finance, Ministry of Economy, KMK and the donors. The development of a Municipal Sector Strategy, as part of the AF was seen by both government and donor stakeholders as timely and critical.

Selection of Towns

The Additional Financing of MIDP will cover five urban centers – Farkhor, Vose, Dangara, Kurgan-Tube and Kulyab located in the poorer southern region of Khatlon in Tajikistan. GoRT had requested the Bank to limit investments to just one or two towns in the southern regions where the needs in the water supply and sanitation sector were the greatest. At the same time the GoRT was interested in piloting innovative approaches to tackling the issues in the sector in support of its broader sector reform objectives in improving communal services provision.

Given the two pronged objective of the GoRT, the selection methodology of the urban centers followed a two-fold approach – i) maximum two urban centers would benefit from direct investments in rehabilitating and improving the water supply, sanitation and solid waste infrastructure, where the needs are seen as the highest; and ii) institutional improvement pilots would be implemented in cities that have shown progress in improving utility performance due to investments and interventions made by EBRD and the World Bank and in Farkhor where the project is piloting an integrated approach to provision of urban services.

Project investment towns. Physical investments under the project would be concentrated in the urban centers of Farkhor and Vose.

Farkhor is a new city that will be covered under MIDP AF and it was selected based on selection criteria agreed with KMK – i) availability of studies (pre-feasibility, feasibility, detail designs, cost estimates), ii) rayon (district) population size greater than 50,000 with a minimum urban population size of 20,000, iii) percentage of population not covered by services (water supply, solid waste removal and sanitation), and iv) urban center not previously covered under MIDP or other donors (Table 1). While official statistics indicate that 65% of the town has got access to water supply (either piped or through community stand pipes) only 21% has actual water supply, only 5% have solid waste collected and 11% have access to sanitation (pit latrines as the sewerage system is not functioning).

Vose was already a beneficiary city under MIDP, however, it received the smallest amount of investments out of eight cities (Kurgan-Tube, Kulyab, Dangara, Istaravshan, Gharm, Vose, Kanibadam, Vahdat) 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 Kanibadam, it is not located in the Khatlon region and therefore will not be a covered under the AF.

Table 1. Service Coverage of Small Towns in Khatlon Region
(Source: KMK)

general information					availability of studies	coverage			percentage of people covered by services		
	municipality town	total population	town center population	region	water supply, solid waste, sanitation	water supply	solid waste	sanitation	water supply	solid waste	sanitation
1	Farkhor*	145347	28902	Khatlon	yes	31200	7234	15782	21	5	11
2	Yavan	158837	29400	Khatlon	yes	42800	4722	14050	27	3	9
3	Shakhrinav	18425	5600	Khatlon	yes	7500			40		
4	Muminobod	78205	11200	Khatlon	yes	69600	3307	20710	89	4	26
5	Qumsangir	110100	7600	Khatlon	yes	38000	11245	10720	35	10	10
6	Temurmalik	61410	6700	Khatlon	no	40000	6628	12773	65	11	21
7	Qabodiyon*	148696	9500	Khatlon	no	21000	6736	9552	14	5	6
8	Khovaling	49100	9000	Khatlon	yes	11000	9095	9240	22	19	19
9	Shahrituz*	102046	16600	Khatlon	no	22000	5658	9552	22	6	9
10	J.Rumi*	157700	14400	Khatlon	no	33000	6759	12400	21	4	8
11	Isfara	230400	5522	Sughd	yes	37500	3115	3761	16	1	2
12	Panjakent	242650	24532	Sughd	yes	35800	18471	1446	15	8	1
13	Pyandj*	100765	9300	Khatlon	yes	18500	4000	no	18	4	

* shortlisted towns

Table 2: Improved Coverage of Water Supply and Solid Waste Management under MIDP

	Name of the town	Water Supply	SWM
1	Gharm	84%	88%
2	Vose	25%	29%
3	Vahdat	45%	38%

	Name of the town	Water Supply	SWM
4	Kurgan-Tube	75%	42%
5	Kanibadam	17%	95%
6	Istaravshan	44%	96%
7	Kulyab	45%	28%
8	Dangara	79%	50%

Towns considered for institutional strengthening pilots. The cities of Kurgan-Tube and Kulyab would benefit from piloting the use of modern billing and collection technologies (electronic handheld billing devices. Installation of automated accounting systems will be carried out in Kugan-Tube, Dangara, Kulyab, Vose and Farkhor. Pilot metering program and the household connection subsidy will be carried out in Farkhor to demonstrate the benefits of an integrated approach to improving services.

Component A: Municipal Infrastructure Rehabilitation

This component aims to finance improvement of municipal services in an integrated manner. Physical investments will be limited to two towns, namely Farkhor and Vose in order to deepen the impact. The project will rehabilitate existing water supply and sanitation systems, including the construction of new water storage tanks, one in each town, limited extensions of the water distribution networks to improve service quality and coverage, and the improvement of water quality at intakes by rehabilitation of chlorination facility, construction of new wells and rehabilitation of electric supply at the site. The project will procure solid waste management and sanitation equipment.

Detailed Description of investments:

Sub-component A1: Infrastructure investments in Farkhor. The proposed scope of investment in Farkhor includes i) water supply system improvements, with rehabilitation of wells and pumping station; rehabilitation and limited extension of urgently needed water supply trunk lines; construction of a new storage tank; rehabilitation of secondary water distribution lines; installation of water meters; ii) sanitation measures: rehabilitation and addition of public block latrines; procurement of vacuum trucks and excavators; iii) solid waste management: rehabilitation of existing waste collection points; procurement of containers and waste collection trucks; construction of temporary waste deposit site within existing landfill; improvement of access road to landfill and perimeter fencing of the temporary solid waste deposit site, installation of sludge drying beds in the existing landfill; and iv) procurement of solid waste management and sanitation equipment.

Sub-component A2: Infrastructure investments in Vose. The proposed scope of investments in Vose will include i) water supply system improvements: construction of a new water storage tank storage tank at the Uchkhoz intake, replacement of the pressurized transmission main, replacement of the most deteriorated sections of the network, limited extension to Jugien neighborhood and enhancing the water quality on three remaining intakes by installing

chlorination facility and repairing fences around protection zones; ii) sanitation measures include the construction of ventilated improved pit (VIP) latrine for multi-storey residential apartments; iii) solid waste management: provision of additional solid waste containers on public land in consultation with local community and procurement of equipment.

Sub-Component A3: Pilot household connections subsidy (refer to Annex 3d for details). In an effort to increase household connections, the proposed project will provide a connection subsidy of 60% of the total connection cost (based on willingness to pay assessments and affordability) to all new households that are currently not connected to the water network in Farkhor, including households that require rehabilitation of existing connections. The subsidy will not apply to apartment dwellers as they are already connected to the water supply network and rehabilitation of internal plumbing in apartments will be financed under the project to facilitate installation of individual HH meters.

Sub-Component A4: Acquisition of emergency services response equipment. This component will finance the acquisition of utility services maintenance equipment in response to disruption of services due to floods and earthquakes, and in case of emergency in pre-disaster scenarios, materials for emergency preparedness. In a letter dated February 8, 2012 the Government of Tajikistan requested the World Bank to provide additional funding of to acquire much needed emergency service restoration equipment and to support the Government in preparing to potential spring floods due to extraordinary snow accumulation. The Bank team has appraised the list submitted by the KMK and views the acquisition of these equipment as an essential long term sustainable measure for the communal services agency (KMK) to respond to disruption in service provision (water supply, heating) due to flooding, severe cold weather (snow) and earthquake. During the recent Bank mission to Tajikistan in March 2012, the Government of Tajikistan requested the World Bank to provide also funding to procure goods for flood emergency preparation. Tajikistan is a mountainous country and even in summer it is difficult to get to some parts of the country, especially in the north and the east in addition, the south has some peculiar hydro-geologic risks due to a combination of snow melting, heavy rain, and sedimentation, requiring yearly maintenance works. KMK proposes to locate the equipment in the regional centers in the south where flooding is a serious annual problem and in the far east of the country which is characterized by treacherous mountainous roads. The KMK will provide proper garages and storage space to store this equipment.

Sub-Component A5: Urgent acquisition of materials for flood protection measures. This sub-component will retroactively finance the urgent need by the Ministry of Land Reclamation and Water Resources (MLRWR) of the Republic of Tajikistan to acquire materials such as cement, fuel and gabion wire mesh to rehabilitate river embankments in preparation of the anticipated floods of the Spring of 2012. Civil works for such activity is not within the scope of this AF. Expenditures under this sub-component will be retroactively financed by the AF upon receipt of a technical, fiduciary and safeguards audit confirming that agreed-upon works have been completed adequately. The GoRT will make appropriate arrangements satisfactory to the Bank for effective transfer of the goods between KMK, State Reserve Agency and MLRWR. Audits specific to the procurement of these goods and its use to be financed by the IDA will review the consistency between the procured quantities and scope of works as a condition of disbursement.

Component B: Technical and Institutional Strengthening

Sub-component B1: Pilot metering program. A Metering Program would be implemented in Farkhor in an effort to i) contribute to the reduction in water loses through wastage; ii) introduce a more equitable application of tariff collection based on consumption; and iii) improve billing and collection. The following table illustrates the implementation of the metering program, with a target of 94% coverage allowing the possibility of having a control group of 6% of Households that will not be metered and can be used to measure improvements in equitable collection of tariff based on actual consumptions compared to the existing highly inflated flat rates that households are paying for water usage. The control group will also contribute towards measuring customer satisfaction rates and help mitigate possible opposition from residents that may attribute increased tariffs to meter installation.

Table 3: Proposed Implementation of the Metering Program

Coverage Farkhor	
2200 houses with existing connection 660 apartments 850 new house connections 3710 connections in total	 80% of total 4660 households
Metered connections	
1980 houses with existing connection 660 apartments 850 new house connections 3490 connections in total	90% of 2200 houses 100% 100% 94% of 3710 connections
Rehabilitation of network	**30%** including transport
(some) extension 1700 m	in order to ensure connection of total of 850 new houses

Sub-Component B2: Pilot modernization of billing and collection system (refer to Annex 3c for details). The Project will finance the pilot installation of modern collection and billing systems by using the existing infrastructure of electronic kiosks in Kurgan-Tube and Kulyab by building on the improvements in their accounting systems which was supported by under the projects financed by EBRD.

The water utility companies in the project towns have low collection rates from 30% to 70%. To seek ways of increasing the collection rates the Bank will propose funding a pilot project for introduction of payment through unmanned electronic payment kiosks, which are present around Tajikistan in Dushanbe and the major regional towns. The payment kiosks offer the residents access to payment for services like roaming (cell phone), electricity and gas supply. The pilot of easing access to payment via electronic kiosks will be combined with introduction of handheld mobile terminals for meter reading, billing and collection. Today most of the billing and collection is made by staff visiting the households issuing water bills and by introduction of handheld terminal the staff will be giving on-line access to the billing system, receive payment with bank cards and issue paper receipt upon payment. The Bank would like to propose the water

supply company in Kurgan-Tube for the pilot project followed by a pilot at the water supply company in Kulyab after its implementation of its EBRD funded accounting system. The two companies are considered to have the best basis among all the water companies for implementing this project component.

Sub-component B3: Communication campaign. Improvements in services delivery will require behavioral changes by the benefiting population, both with respect to conserving water but also habituating consumers to pay for the services they receive. The sub-component will finance public information campaign to raise awareness on water conservation and solid waste disposal issues and advantages of metering to improve the public acceptance. Public awareness campaigns will also be used to inform the public of the Household Connection Subsidy.

Sub-Component B4: Monitoring Information System (MIS) and Participation in IBNET (refer for Annex 3b for details). The project will finance procurement and installation of a Monitoring Information System (MIS) to be custom designed and established at KMK central and at the regional hubs. The objective of the MIS would be to automate the collection, storing, processing and sharing of data and reports related to the Communal Services Sector in Tajikistan using state of the art information technology. This will assist KMK's oversight over the local utilities and also support the Inter-Agency Working group tasked with implementing the Housing and Communal Services Development Program of GoRT. In addition, data from the MIS with regard to water utilities will be used to participate in the International Benchmarking Network (IBNET) using the networks software. The first phase IBNET role out will include participation of the eight MIDP towns and towns that have already received assistance from EBRD.

Sub-Component B5: Improvement of financial management systems. Installation of modern accounting and billing systems in all five towns covered under the AF.

Sub-Component B6: Municipal Sector Strategy and Design of Communal Services Development Financing Mechanism (refer to Annex 3a for details): The AF will support the GoRT in implementing the "Concept for Housing and Communal Services (HCS) Reform 2010-2020" approved in 2010 through the development of a Municipal Sector Strategy which will focus, but not be limited to, municipal issues and reforms required to improve the delivery of communal services excluding housing services. The Strategy will also explore and design a rules based financing mechanism appropriate for low capacity countries and would function as a Communal Services Development Fund (CSDF) that could attract other donor contributions in the future. The CSDF would initially be limited to water supply, sanitation and solid waste management.

Sub-Component B7: Training and capacity building. Training and technical capacity building support will be provided to all utilities and in particular to Farkhor to improve the utilities capacity to implement and operate the newly installed metering program. Training will also be provided to participating utilities in the MIS and IBNET pilot to familiarize them with the indicators and improved data collection methodologies.

Sub-Component B8: Feasibility studies. This component will also finance feasibility studies to prepare investment projects indentified by the Municipal Sector Strategy for financing by the donors and the World Bank.

Component C: Implementation Support:

The component finances the Project Management Unit (PMU) already established under the MIDP project, implementation consultants and other consulting services.

Annex 3a: Scope of a Municipal Sector Strategy
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

Objective. The objective of financing the development of the Municipal Sector Strategy under the Additional Financing and Restructuring for MIDP is to support the Government of the Republic of Tajikistan in implementing the 2010 Decree #321 "Concept for Housing and Communal Services (HCS) Reform 2010-2020".

Proposed Scope. As agreed with the KMK and GoRT, the Municipal Sector Strategy (MSS) will focus, but not limited to, on the issues and reforms related to the provision of communal services excluding the issues related to the housing sector. However, the MSS could cover the analysis of the housing sector to the extent that it is required to understand and unbundle the issues related to provision of municipal services. In this respect the MSS will cover the following aspects of the GoRT proposed HCS reform directions:

1. Analysis of the current housing and communal services sector issue in the country both in urban and rural areas with the aim to identify major problems and issues in the sector and to provide recommendations to resolve prevailing issues. Specifically issues related to the state of a) water supply sector, b) sewage system, c) solid waste management and d) district heating system.

2. Analysis of the current institutional set up responsible for the delivery and regulation of the municipal services sector.

3. Recommendations to optimize the institutional organization both at the central and local levels, including recommendations for the establishment of a state regulatory and oversight body.

4. Development of a single regulatory policy for the development of the sector and propose actions and timeline for its implementation.

5. Recommendations for demonopolization of the municipal services sector including:
    a. Exploring the effectiveness of establishing regional institutions for managing the delivery of municipal services regardless of the ownership forms.
    b. Recommendations for improving the financial management system, including establishing a single automated accounting system for the services.
    c. Explore the viability and possibilities for outsourcing select responsibilities of the utilities and municipalities to local private sector.
    d. Recommendations to build technical and institutional capacity of the enterprises and sector specialists.
    e. Organizational reforms and review of staffing requirements.

6. Analysis and recommendations to implement a demand management system of provision of services including, but not limited to metering of water supply.

7. Cover consumer rights and protection of HCS users by establishing appropriate consumer complaints and management body.

8. Review and recommendations of contractual agreements between consumers of municipal services and the service provider and between different services providers.

9. Recommendations for reform of tariff structure and application methodology.

10. Review of current financial system and provision of subsidies in the municipal services sector with corresponding recommendations for improvement.

11. Recommendations for financial sustainability of utilities and local municipalities.

12. Recommendations for operational sustainability.

13. Recommendations for improving performance of municipal service utilities and municipalities.

14. Recommendations for improving accountability and transparency.

15. Review involvement of private sector including outsourcing of some municipal and utility functions. Review current laws in place that may or may not support private sector participation in the future. Recommend changes if needed.

16. Review and recommendations of financing options, including the possibility and viability on establishing a **Communal Services Development Fund** to finance investments in the communal services sector in programmatic way.

Note: The Municipal Strategy will build on a number of preliminary assessments and studies on some of the above topics and issues that the KMK has already carried out.

Annex 3b: Monitoring Information System and Benchmarking of Water Utilities
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

Background: Currently the management, reporting and monitoring of the Housing and Communal Services (HCS) sector performance, particularly with respect to delivery of services (water supply, sanitation, solid waste and district heating) is outdated and depended on manual collection and processing of data. Given the Presidential decree on Housing and Communal Services Reform and the growing investment support provided by multi-lateral and bi-laterals agencies in improving communal services in secondary cities in Tajikistan, the present system does not allow KMK and its regional branches to adequately and efficiently coordinate and monitor project implementation as well as on-going performance of local utilities.

The structure of the data collected and frequency of its collection varies greatly across the country, in many cases there are no channels for sharing this information between KMK and the local utilities and the possibility of information distortion or loss is high as it gets passed from one government level to another.

The level of application of modern information technologies at the federal, regional and municipal levels of HCS management remains extremely low. The technologies of automated collection, processing and analysis of the relevant data are applied in a very limited manner. Paper documents prevail and are transmitted by fax; the collected information in many cases is not processed or stored and is not available for further analysis; created databases are isolated and often duplicate each other.

Objective for support under the proposed AF: As part of the Technical Strengthening Component, the AF would support the modernization of KMK both at the central and regional level to efficiently monitor the operational and financial management of the local KMK utilities and at the same time coordinate the implementation of HCS reforms. A Monitoring Information System (MIS) will be custom designed and established at KMK central and at the regional hubs. The objective of the MIS would be to automate the collection, storing, processing and sharing of data and reports using state of the art information technology. The objective of this sub-component is to design full-scale automated System of Monitoring the Housing and Communal Services Sector (HCS) in Tajikistan.

The proposed Monitoring and Information System (MIS) will assist the Government in monitoring of HCS performance and progress of the HCS reforms. The MIS will provide real-time presentation of full, valid and up-to-date information on conditions of HCS facilities and their performance, as well as provide information for comprehensive analysis and establish of fact-based informed decision process in the HCS at municipal, regional and state levels.

The MIS will:

- Provide comprehensive information and analytical support to HCS reforms in Tajikistan at the national, regional and municipal levels;
- Guarantee comprehensive information flow on quality and quantity of the HCS provided to population and other customers;
- provide objective information for control and correction levels of the tariffs for HCS at the national, regional and municipal levels;
- enhance effectiveness of the management of the HCS system through improvement of the decision making processes on the basis of up-to-date, comprehensive and reliable information on HCS facilities;
- generate information for energy and other resources conservation actions;
- monitor prevent emergency situations;
- conduct comprehensive inventory of HCS and identify HCS facilities requiring urgent or emergency repair woks on the basis of information analysis provided by monitoring systems of the lower level;
- prevent or reduce risk of environmental damage by HCS facilities and their customers.

Sustainability and Scalability: To ensure sustainability the MIS would need to be housed in the statistical department of the KMK or a similar department or unit within KMK that is responsible for collection and analysis of data and information. It is envisaged that staff already employed in this department will probably spend 50% for their time in maintaining the MIS. However, since the MIS will replace the currently time-consuming job of staff of manually collecting and storing data in either excel sheets and paper files, it is presumed that staff time and their cost will be freed for other purposes.

The design of the system will be such that it can be scaled up after initially testing its implementation for a period of 1-2 years, to include broader aspects of communal services as well as expansion of the system to all city level KMKs. The main components of the system that will require scaling up in the future will include: corporate networks, server capacity, infrastructure services, data storage, customization of databases and analytical capability.

As a first stage, the MIS will focus on performance of the water and sanitation sector as a pilot. At later stages, monitoring of district heating, gas, electricity distribution as well as solid waste services will be added to the operational MIS platform.

Pilot Bench-Marking of Water Utilities

The proposed IBNET pilot will focus only on water and wastewater monitoring system in eight MIDP towns and towns that have benefited from EBRD investments. It is expected to:

- Introduce performance monitoring and benchmarking of the water sector in Tajikistan through:
    - (i) regular collection of technical and financial data from water and wastewater companies - vodokanals (representing at least 70% of Tajikistan's urban population),
    - (ii) launch of a specific monitoring and benchmarking entity in the Government of Tajikistan,

(iii) increase the reliability of data through staff training, through proposed small investments (e.g. water meter, accounting software, pressure monitor, etc.) and through proposed organizational and/or managerial changes, and

(iv) disseminate of the results to all stakeholders.

- Build capacity to improve the collection and the reliability of the technical and financial data within companies operating in the water and sanitation sectors both in the urban and peri-urban areas of Tajikistan.
- Set a baseline for the MIS to monitor district heating, gas, electricity distribution as well as solid waste services.

Scope of the Work and Main Tasks

- Create a water sector monitoring and benchmarking unit within the KMK.
- Set a baseline of the current situation of Tajikistan water and wastewater utilities.
- Organization of data collection.
- Implementing the data collection system and equipping the KMK with professional tools and instruments for the data collection, reporting and presentations.
- Adding district heating, gas and electricity distribution, and solid waste platforms to the MIS.
- Operational technical assistance for the first 24 month of the system operation.

Annex 3c: Billing and Collection Modernization Pilot
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

Introduction. The project will finance a pilot introduction of automotive payment of water usage through unmanned electronic payment kiosks which are present around Tajikistan in Dushanbe and the major regional towns. Existing payment kiosks currently offer residents an easy way of paying for select services, such as cell phone use, electricity and gas supply. For water supply services the experience is still limited, but the proposed system is being successfully operated in water utility services in the northern city of Khujand. A similar effort is being launched under a World Bank financed Second Dushanbe Waster Supply Project. The pilot will further include introduction of handheld mobile terminals that assist in meter reading, billing, collection and provision of on the spot payment receipts. Today most of the billing and collection is carried out by collection controllers employed by the utility, who visit households issuing water bills. The introduction of handheld terminals will permit the utility to monitor collectors remotely though an on-line service that is connected to the billing system. Participating utilities will receive direct payments into their bank accounts though credit cards and payments made in cash will be promptly recorded by the system.

Objectives. The main objective of the pilot is to test the introduction of electronic payment services on improving collection efficiency. Electronic kiosks will provide customer an easy way of paying the water bill and the introduction of handheld terminals would increase accountability of the processes of billing and collection. The introduction of these new ways of collecting water fees will have a positive impact on the collection rates. Water Utility Companies in the project towns have low collection rates ranging from 30% to 70%. Improvement of collection efficiency is seen as an important step towards achieving higher levels of financial sustainable of the water utility.

A secondary objective of the pilot is to improve the institutional development of the water companies by streamlining their internal processes as well as giving them better up-to-date information of their financial status. The step should also be seen in the context that the companies are implementing new financial systems based on the 1C financial software suite.

Selection of pilot towns. The vodokanal (water utility) in Kurgan-Tube was selected as the first pilot for implementing a payment solution using payment kiosks and handheld terminals for meter reading, billing and collection. An appraisal of all five water utilities in the project towns indicate that the water utility in Kurgan-Tube is best prepared for such a pilot, due to the improvements it has made in improving its financial management system with EBRD help. The company has been using IT-systems for accounting and customer registration for a while and is currently migrating IC accounting and billing software. Furthermore, Kurgan-Tube already has more than twenty payment kiosks installed all over the town, and is already servicing mobile telephone companies as well as the electricity company. A second pilot will be implemented in Kulyab based on the experience gained in Kurgan-Tube and after the water company in Kulyab has implemented its new accounting system.

Experience. *EXPRESSPAY* is currently the most experienced company in Tajikistan that provides the electronic kiosks and handheld devices. *EXPRESSPAY* has electronic kiosks in the capital and the major regional towns including Kurgan-Tube and Kulyab. Analysis of the use of electronic billing systems in Khojand indicate a rapid up-take of such payment options by the public. Data from the Khojand water utility company also shows that almost 80% of its customers are using the kiosks after 1½ years of operation. There is evidence that electronic payment systems reduce costs associated with manual billing and collection.

Configuration and technical interface. The kiosk-solution will have a technical component consisting of a server and a billing software that will be installed at the water company, and will be adapted to work seamlessly with the IC accounting system already in place in Kugan-Tube and Kulyab.

Cost of service. Payment of using the kiosks will be based on a transaction fee typically corresponding to 1% of the transaction. The 1% will be set up so that it is paid by the water utility. This arrangement will be negotiated between the provider and the water utility during the implementation of the system. It was confirmed that there no startup fees from implementing the solution is needed.

Annex 3d: Pilot Household Connection Subsidy for Water Supply
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

Application: The Household (HH) Connection Subsidy pilot will universally apply to all new household connections and existing household connections that require rehabilitation of pipes in Farkhor. It will not apply to apartment dwellers as rehabilitation of internal plumbing within apartments will be covered under the project.

Implementation mechanism

- a survey of the eligible HH that are not connected will be carried out;
- the HH will then have to be zoned into reasonable clusters of residences, preferably houses in the same neighborhood should be clustered together;
- there should be a minimum number of HH per zone to ensure that when civil works start it is not only for 5 houses but at least 10-15 house or more based on detail design;
- connection of new HHs will be a contract that will include i) civil works for connections, and ii) installations of meters;
- total cost for connections including meters will be US$350 as per FS consultant's estimates, of which the project is financing 100% of the meter installation (US$150) and providing 60% subsidy to the HH for connection (approximately US$120);
- vodokanal (water utility) will accept applications for new connections, at this time the HH pay 40% of the cost for connection (or such amount will be contributed on their behalf) to cover the cost of connecting to the water supply network to the vodokanal up front and will receive a receipt of payment;
- as soon as all HHs from one zone has submitted an application and paid their 40%, the contractor will get a work order to complete civil works and installation of meters. If several zones qualify then connections can be done at one go for those zones. This will ensure that the contractors are not waiting around in Farkhor and Vose for each application;
- contractor will be paid upon verification by the implementation consultants in the pmu that all houses in that zone have been connected and they have received their first months metered bill.

Criteria for connection to the WS network:

- to ensure success an active communication campaign will be carried out informing those communities that will be positively affected by the subsidy scheme;
- the HH connection subsidy scheme will have to have an end date (i.e. 2-3 months before project closing date) so that HH are aware that they need to submit applications by a certain date otherwise they will not benefit;
- HH will have to pay their 40% share as part of the application to the vodokanal;
- contractors will only start civil works in a zone that has submitted 100% applications (i.e. from all HH in that zone) this we hope will encourage the community to put pressure on remaining HHs that have not yet applied for a connection or that have not yet paid the 40%.

Annex 4. Safeguards
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

Environmental Safeguards

1. *Environmental Category.* The proposed expanded and new activities of the AF do not raise the environmental category of the project nor trigger any new safeguard policies. In accordance with World Bank safeguard policies and procedures, the AF is qualified as Category B. The activities to be financed under the AF are of the same nature of those implemented under initial project and thus they are not expected to generate significant adverse impacts, neither environmental nor social. Compliance with safeguards policies under the original project has been satisfactory, and no adverse impacts were registered.

2. *Environmental Assessment.* As the proposed AF would support the same type of activities which may generate only insignificant, short-term and localized impacts, the EMP prepared for the initial project which represents a framework EA document will be also applicable for the AF project. Taking into account the EMP provisions, a baseline study for the new project sites in Farkhor and Vose will be conducted to prepare a site specific EMPs to be disclosed in the project area and consulted with all interested parties.

3. *State Ecological Expertise approval.* Per National EA legislation this project should be subject of the State Ecological Expertise (SEE). Once the draft of the site specific EMPs are prepared, disclosed and consulted with all interested parties, they will be officially submitted to the SEE for its review and approval. After the SEE approval the EMP will be disclosed in the country as well as in the WB Infoshop and will be used during project implementation.

4. *Notification to riparian countries.* The OP 7.50 applies to the Project as the city of Farkhor is located on an international waterway as defined by paragraph 1(b) of OP 7.50. However, considering the nature of the investments, the exception to the external notification requirements of OP 7.50, set forth in paragraph 7(a) is applicable (Management memorandum is available in Project Files). The Project involves rehabilitation of ongoing schemes that: (i) will not adversely change the quality or quantity of water flows to the other riparians; and (ii) will not be adversely affected by the other riparian's water use. An extension of the exception to the external notification requirements of OP 7.50, set forth in paragraph 7(a) for the AF has been approved by the ECA Regional Vice President on March 6, 2012.

5. *Measures to address safeguard policy issues.* The required mitigation measures for the project activities are standard and widely used in construction practices. They are prescribed in the Environmental Management Plan, which was prepared for the initial project. As the new project will support similar types of activities as under the original project it is proposed the existing EMP to be applied also for the new project. A review of the status of EMP implementation and of compliance of implemented within the initial project activities with safeguards issues were done during last Bank's supervision mission in November 2011. The mission concluded the EMP is being implemented well overall and that the PMU has relevant

capacities to ensure EMP successful implementation. The few recommendations on improving safeguards implementation were related to better reporting as well as appointing a responsible person within PMU in this regard.

6. *Integration of environmental safeguards requirements into the project documents.* The EMP stipulates all contracts for construction works will include requirements for implementation of the specific mitigation measures and good construction practices. Furthermore, daily control and monitoring of construction works will be part of responsibilities of the utility operator.

7. *EMP disclosure.* The EMP for the initial project has been disclosed in accordance with the Bank's policy in the country and was also sent to the WB Infoshop in October, 2005. The key stakeholders are KMK, a central government utility agency, local municipalities, and the beneficiaries. As part of the social assessment consultations are being carried out with consumers to determine their needs and ensure that they are taken into account in project design. Periodic consultations will continue during project implementation and after project completion to determine the level of beneficiary satisfaction with the project and its impact. As part of the AF, the environmental management provisions for activities under the project works have been updated. The updated EMP was disclosed on January 30, 2012 in country and Infoshop. Consultations were held on February 3, 2012 in Dushanbe and February 7, 2012 in Vose and Farkhor. The AF EMP would be subject of the SEE review as per national legislation. Approval of the EMP by the SEE which needs to be done before the start of civil works will be condition for project effectiveness.

8. The town of Farkhor has recently acquired a new approved sanitary landfill which is at about 5 km from the town. While solid waste enterprise has already started to dispose wastes as well as waste waters on the site, no necessary civil works for ensuring environmental security of the landfill were undertaken. The new landfill has the required operational license approved by sanitary and environmental authorities, which was submitted to the Bank by the PMU.

9. In response to the Recipient's request to the Bank to help the government finance the procurement of materials (cement, wire mesh and fuel) to urgently carry out flood protection and mitigation measures for rehabilitation of river embankment due to expected severe flooding in the Spring 2012, a new project sub-component A5 "Acquisition of materials for flood protection measures" was added to the AF. The materials will be financed retroactively. The Recipient provided further details with regard to the works and locations of where rehabilitation of embankments will take place prior to negotiations. Since the proposed activities under this sub-component falls under category C no other EA actions are needed but a rapid post-implementation environmental audit will be conducted; no category B works will be supported by the materials to be acquired under the AF. The submission of a Technical, Fiduciary and Environment safeguard audit confirming that agreed-upon works have been completed adequately for a technical, procurement and safeguard standpoint will be required. Submission of the audit is a condition for disbursement.

Social Safeguards

10. *Involuntary Resettlement.* OP 4.12 on Involuntary Resettlement has been triggered for the project, as there are some activities that may require temporary or permanent land acquisition.

The project has developed, consulted on and disclosed (in-country and in WB Infoshop) a Resettlement Policy Framework (RPF) which will inform all activities involving land acquisition, restriction of access to land or services and loss of assets.. The RPF was disclosed to the public on January 30, 2012 and consultations conducted on February 3, 2012 in Dushanbe and February 7, 2012 in Vose and Farkhor. The completed pre-feasibility studies and the on-going feasibility study indicate that impacts will be limited as the project will largely be limited to rehabilitation of existing structures and construction of infrastructure in streets and roads. However, since the water and sanitation schemes are not yet fully designed and the exact location of pumping stations and water pipe networks are not clearly known, the possibility of land acquisition and restrictions in access cannot be ruled out, and the borrower has develop the RPF. The RPF is intended as a practical tool to guide the preparation of Resettlement Action Plans (RAPs) for activities during implementation of the comprehensive program. If any impacts are identified, the Borrower will develop individual RAPs for each sub project based on the guidelines and procedures highlighted in the RPF document.

11. *Potential Resettlement Impacts*:

(a) The existing water intake on the premises of the water utility of Farkhor which is under the KMK will be upgraded through the drilling of new wells and refurbishment of existing structures. Presently the site is also being used by the watchman of the water utility of Farkhor as a residence and for grazing of livestock and limited farming. While he will continue to live and work there, it is unlikely that there will be adequate land for these activities to continue and he will need to be compensated accordingly. In addition, some unlined pit latrines along the external perimeter fence of the intake site may have to be demolished and replaced with lined latrines in a suitable location nearby.

(b) New Storage tanks: Two new storage tanks are planned on land where there was an old dysfunctional storage tank in Farkhor and Vose respectively. The land belongs to the local water utilities and there is no one living on it that will be affected. However, there is a non-approved foundation of new house which is under construction adjacent to the site of the proposed new high-elevation storage tank in Farkhor. The foundation of the house may have to be removed and its construction stopped and compensation given accordingly. The construction of the high-elevation storage tank in Farkhor started in 1988 and put on hold in 1990.

(c) The temporary solid waste deposit site will be located in the existing landfill of Farkhor and no persons or resources are affected.

(d) Limited extension of water supply networks from new storage tanks to existing network in Farkhor and Vose will have no land acquisition impacts as the routing is along public streets.

Annex 5: Financial Management and Disbursement
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

1. The financial management responsibilities for the AF would remain with the PMU, which currently implements the MIDP. This PMU has gained required capacity in implementing donor funded projects due to almost 6 years of experience in implementing MIDP. The PMU is adequately staffed and appropriate controls and procedures have been instituted. The PMU submits quarterly Financial Management Reports (FMRs) on time and they are satisfactory to the Bank. The audit of project financial statements for 2010 for the MIDP was delayed due to the late selection of the auditor by the State Committee on Investment and State Property that procures audit services for all World Bank financed projects in Tajikistan under the Block Audit arrangement. The audit report has since been received, reviewed and found to be satisfactory.

2. For purposes of monitoring of project progress and financial performance, Interim Un-audited Financial Reports (IFRs) will be prepared under the AF. The PMU will produce a full set of IFRs every calendar quarter throughout the life of the Project. The format of IFRs will be similar to the original project and will include: (a) Project Sources and Uses of Funds, (b) Uses of Funds by Project Activity; (iii) Statement of Designated Account; and (iv) Disbursement Summary. These financial reports will be submitted to IDA within 45 days of the end of each quarter. The first quarterly IFRs will be submitted after the end of the first full quarter following the initial disbursement. The IFRs for the Additional Financing would be consolidated with those of the parent project, rather than being prepared separately, therefore the accounting system would be modified to be able to generate the consolidated reports.

3. The audit of the AF will, therefore, be conducted (i) by independent private sector auditors and on terms of reference acceptable to the Bank, and (ii) according to the International Standards on Auditing (ISA) issued by the International Auditing and Assurance Standards Board of the International Federation of Accountants (IFAC). The terms of reference to be used for the Project audit will be prepared by the PMU and cleared by the Bank, and submitted to the State Committee on Investment and State Property Management before contracting the auditor, under the block audit arrangement. The annual audited project financial statements will be submitted to the Bank within six months of the end of each fiscal year and also at the closing of the Project. The cost of the audit will be financed from the proceeds of the Grant. From a financial management perspective, the fiduciary risk at project level is assessed to be Substantial now and it is considered to be Moderate upon implementation of all the proposed mitigation measures. PMU has established satisfactory fiduciary arrangements for implementation of donor-funded projects. A few additional risk mitigating and capacity building measures has to implemented to reflect the proposed AF financial management arrangements, including updating the 1C accounting program and the existing FM Operational Manual to enable to track the activities of the proposed project in proper manner.

4. The proposed AF MIDP will use the same disbursement mechanism as the original project. Disbursements for all components will follow the transaction-based method, including Advance and Replenishments to the Designated Account; Reimbursements with full documentation; Statement of Expenditure (SOE); Direct Payments and Special Commitments.

The PMU would open a Designated Account in US$ for administering the AF in a commercial bank acceptable to the World Bank. The ceiling for the Designated Account and other disbursement details will be provided in the Disbursement Letter. However, due to the overdue outstanding Designated Account balances under few projects in Tajikistan that were more than six months past their respective closing dates no new Designated Accounts will be established for the proposed AF, until the refund or documentation has been received by the Bank. Hence, the provision for using the Advance as a disbursement method for the AF will not be included in the Disbursement Letter. If the issues involving these operations are resolved prior to the issuance of the Disbursement Letter (i.e. at the signing of the new operation), then the letter will be revised to include such a provision. If the issues are resolved subsequently, then an amended Disbursement Letter will be issued to include the provision for a Designated Account.

5. **Retroactive financing**: Withdrawals up to SDR1.22 million (US$1.9 million equivalent) under the proposed AF may be made for payments made prior to the signing date of the Financing Agreement but on or after February 10, 2012, for Eligible Expenditures under Component A - Municipal Infrastructure Rehabilitation: Sub-Component A5 (Urgent acquisition of materials for flood protection measures) and upon receipt of a technical, fiduciary and safeguards audit, satisfactory to the Bank, that confirms that agreed-upon works have been completed adequately from a technical, procurement and safeguard standpoint.

Annex 6: Revised Estimate of Project Costs
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

		Preliminary component's budget, USD
COMPONENT A: MUNICIPAL INFRASTRUCTURE SERVICES		
A.1	**Physical Investments in Farkhor Urban Settlement**	
	Water supply	4,066,740.00
	Sanitation	151,200.00
	Solid Waste Management	513,378.00
	A.1 Sub-Total Farkhor	**4,731,318.00**
A.2	**Physical Investments in Vose Urban Settlement**	
	Water Supply	1,343,129.00
	Sanitation	236,681.00
	Solid Waste Management	68,597.00
	A.2 Sub-Total Vose	**1,648,407.00**
A.3	**HH Connections**	**248,400.00**
A.4	**Emergency Services Response Equipment**	**1,000,000**
A.5	**Emergency Services Response Materials**	**1,900,000**
TOTAL COMPONENT A		**9,528,125.00**
COMPONENT B: TECHNICAL AND INSTITUTIONAL STRENGTHENING		
B.1	**Metering program in Farkhor**	**658,044.00**
B.2	**Billing and Collection System (Kurgan-Tube and Kulyab VK)**	**30,000.00**
B.3	**Communication Campaign**	**60,000.00**
B.4	**KMK Monitoring Information System (MIS) +IBNET**	**270,000.00**
B.5	**Automated accounting system for Farkhor, Vose and Dangara**	**85,000.00**
B.6	**Municipal Sector Strategy and Design of CSDF**	**240,000.00**
B.7	**Training and Capacity Building**	**50,000.00**
B.8	**Feasibility Studies for future investments**	**300,000.00**
TOTAL COMPONENT B		**1,693,044.00**
COMPONENT C: PROJECT MANAGEMENT SUPPORT		
C.1	**PMU Operating Expenses**	
1.1	PMU Operations	490,000
1.2	PMU Repairs and office equipment	60,000
1.3	Modernisation of 1C Accouting software for PMU	15,000
	C.1 Sub-Total	**565,000**
C.2	**Audit**	**460,000**
1.1	Financial audit of the project , 4 audits for project and KMK	160,000
1.2	Technical audit of the project for 3 years and audit for emergency materials	300,000
C.3	**Monitoring and Evaluation / Surveys**	**20,000**
C.4	**Project Management Consultant (firm)**	**700,000**
	TOTAL COMPONENT C	**1,745,000**
GRAND TOTAL		**12,966,169**

Annex 6a: Procurement Plan
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

No.	Contract (Description)	Procurement/ Selection Method		Estimated Contract Price (USD)	Bidding documents	WB No objection to Bidding documents	Procurement Notice/Advertisement	Bid Opening	Bid Evaluation Report	WB No objection to Bid Evaluation Report	Contract Signature	Contract Completion	Prior Review
	Component A. Municipal Infrastructure Rehabilitation												
	Civil works												
1	**MIDP AF 001 Rehabilitation of Wells and Pumping Station in Farkhor**	**NCB**	**Plan**	**782,460**	June 2012	July 2012	July 2012	September 2012	October 2012	October 2012	November 2012	November 2013	Yes
			Fact										
2	**MIDP AF 002 Consruction of new water tank (2000m³) in Farkhor**	**NCB**	**Plan**	**972,000**	June 2012	July 2012	July 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	[illegible] 2013	Yes
			Fact										
3	**MIDP AF 003 Reconstruction of transmission mains in Farkhor**	**NCB**	**Plan**	**945,000**	July 2012	August 2012	August 2012	November 2012	November 2012	December 2012	December 2012	December 2013	Yes
			Fact										
4	**MIDP AF 004 Reconstruction and extesion of distribution network in Farkhor**	**ICB**	**Plan**	**1,098,360**	September 2012	October 2012	November 2012	January 2013	January 2013	February 2013	February 2013	July 2014	Yes
			Fact										
5	**MIDP AF 005 Refurbishment of existing public toilets in Farkhor**	**NCB**	**Plan**	**150,000**	July 2012	August 2012	August 2012	November 2012	November 2012	December 2012	December 2012	December 2013	No
			Fact										
6	**MIDP AF 006 Construction of new administration building and operation yard for water utility in Farkhor**	**NCB**	**Plan**	**54,000**	July 2012	August 2012	August 2012	November 2012	November 2012	December 2012	December 2012	December 2013	No
			Fact										
7	**MIDP AF 007 Removal of existing illegal waste collection points and construction of landfill in Farkhor**	**NCB**	**Plan**	**189,675**	August 2012	September 2012	September 2012	November 2012	December 2012	December 2012	January 2013	January 2014	No
			Fact										
8	**MIDPAF 008 Rehabilitation of water supply system in Vose**	**ICB**	**Plan**	**1,343,129**	June 2012	July 2012	July 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	[illegible] 2013	Yes
			Fact										
9	**MIDP AF 009 Construction of public toilets (VIP latrines) in Vose and construction of solid waste collection points**	**NCB**	**Plan**	**200,000**	August 2012	September 2012	September 2012	November 2012	December 2012	December 2012	January 2013	January 2014	No
			Fact										
10	**MIDP AF 010 Installation of new connections Farkhor and Vose**	**NCB**	**Plan**	**149,040**	August 2012	September 2012	September 2012	November 2012	December 2012	December 2012	January 2013	January 2014	No
			Fact										
	Subtotal Works		**Plan**										
			Fact										
	Goods												
11	**MIDP AF 011 Monitoring equipment for Farkhor water utility**	**Shopping**	**Plan**	**59,400**	June 2012	June 2012	July 2012	August 2012	August 2012	September 2012	September 2012	January 2013	No
			Fact										
12	**MIDP AF 012 Procurement of equipment for water and solid waste management utilities in Vose and Farkhor**	**Shopping**	**Plan**	**44,000**	June 2012	June 2012	July 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	January 2013	No
			Fact										
13	**MIDPAF 013 Procurement of special vehicles for Farkhor, Vose and SUE KMK**	**ICB**	**Plan**	**1,480,200**	June 2012	June 2012	July 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	[illegible] 2012	January 2013	Yes
			Fact										
14	**MIDP AF 014 Procurement of cement (retroactive financing)**	**Shopping**	**Plan**	**53,000**	April 2012	April 2012	April 2012	May 2012	May 2012	May 2012	May 2012	June 2012	yes
			Fact										
15	**MIDP AF 015 Procurement of fuel (retroactive financing)**	**NCB***	**Plan**	**376,960**	April 2012	April 2012	April 2012	May 2012	May 2012	May 2012	May 2012	June 2012	yes
			Fact										
16	**MIDP AF 016 Procurement of gabion wire mesh package 1 (retroactive financing)**	**Shopping**	**Plan**	**100,000**	April 2012	April 2012	April 2012	May 2012	May 2012	May 2012	May 2012	June 2012	yes
			Fact										
17	**MIDP AF 017 Procurement of gabion wire mesh, package 2 (retroactive financing)**	**ICB***	**Plan**	**1,370,000**	April 2012	April 2012	April 2012	May 2012	June 2012	June 2012	July 2012	August 2012	yes
			Fact										
	Subtotal Goods		**Plan**										
			Fact										
	Component B. [illegible] and Institutional [illegible]												
	Civil works												
18	**MIDP AF 018 Metering program in Farkhor**	**NCB**	**Plan**	**658,044**	January 2013	January 2013	February 2013	April 2013	April 2013	May 2013	May 2013	June 2015	**Yes**
			Fact										
	Goods												
19	**MIDP AF 019 Instalation of billing and collection sistem for vodocanals in Kurgan Tube and Kulyab**	**Shopping**	**Plan**	**30,000**	August 2012	August 2012	August 2012	September 2012	September 2012	September 2012	September 2012	December 2012	**No**
			Fact										
20	**MIDP AF 020 KMK Monitoring informatin sistem (MIS)+IBNET**	**ICB**	**Plan**	**270,000**	February 2013	February 2013	March 2013	May 2013	May 2013	June 2013	June 2013	June 2014	**Yes**
			Fact										
	TOTAL		**Plan**	**10,325,268**									
			Fact										

No.	Contract (Description)	Procurement Method		Estimated Contract Price (USD)	TOR Approval	EOI Advertisement	EOI Opening	EOI/CV Evaluation Report	WB No objection to EOI/CV Evaluation Report	RFP	Technical Proposals Opening	Tech. Evaluation Report	WB No objection to Tech. Evaluation Report	Financial Proposals Opening	Combined Cost & Quality Evaluation	Contract Signature	Contract Completion	Prior Review
CONSULTING SERVICES																		
Component B. Technical and Institutional Strengthening																		
1	MIDP AF 021 Comunication compaing in project towns	**CQS**	**Plan**	**60000**	January 2014	January 2014	January 2014	February 2014	N/A	N/A	N/A	N/A	N/A	February 2014	February 2014	February 2014	June 2015	No
			Fact															
2	MIDP AF 022 Automated accounting system for Farkhor Dangara and Vose vodocanals	**CQS**	**Plan**	**85000**	August 2012	August 2012	August 2012	September 2012	N/A	N/A	N/A	N/A	N/A	September 2012	September 2012	September 2012	December	No
			Fact															
3	MIDP AF 023 Training and Capacity building	**CQS**	**Plan**	**50000**	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	No
			Fact															
4	MIDP AF 024 Feasibility Studies for future investment	**QCBS**	**Plan**	**300000**	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Yes
			Fact															
5	MIDPAF 025 Development of communal services sector strategy and design of MSDF	**QCBS**	**Plan**	**240000**	N/A	October 2012	October 2012	November 2012	N/A	December 2012	January 2013	January 2013	February 2013	February 2013	March 2013	March 2013	March 2014	**Yes**
			Fact															
Component C. Project Implementation Support																		
6	MIDP AF 026 Project Management Consultant for supervision	**QCBS**	**Plan**	**700000**	N/A	June 2012	July 2012	August 2012	N/A	September 2012	October 2012	October 2012	November 2012	November 2012	December 2012	December 2012	August 2015	**Yes**
			Fact															
7	MIDP AF 027 Audit (PMU and KMK for 4 years)	**TBD**	**Plan**	**160000**	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	**No**
			Fact															
8	MIDP AF 028 Technical audit for 3 years	**CQS**	**Plan**	**180000**	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	**No**
			Fact															
9	MIDP AF 029 Technical audit of the use of emergency materials	**CQS**	**Plan**	**100000**	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	**Yes**
			Fact															
10	MIDP AF 030 M&E Consultant	**IND**	**Plan**	**20000**	June 2013	June 2013	June 2013	July 2013	N/A	N/A	N/A	N/A	N/A	July 2013	July 2013	July 2013	July 2015	**No**
			Fact															
11	MIDP AF 031 IC modernisation for PMU	**CQS**	**Plan**	**15000**	June 2012	June 2012	July 2012	August 2012	N/A	N/A	N/A	N/A	N/A	August 2012	September 2012	September 2012	September	**No**
			Fact															
TOTAL FOR CONSULTING SERVICES			**Plan**	**1,910,000**														
			Fact															
GRAND TOTAL FOR GOODS, WORKS & SERVICES			**Plan**	**12,235,268**														
			Fact															

Annex 6b: Emergency Services Response Equipment and Goods
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

	Description	Measurement	Number or Quantity
1	Trailer	units	1
2	Crane truck 20t	units	1
3	Earth mover T-130	units	1
4	Excavator 0,65m3	units	1
5	Mobile laboratory for water quality test	units	1
6	Mobile welding unit	units	1
7	Welding unit for pipeline pipes	units	1
8	Truck 20t	units	1
9	Hydrodynamic truck	units	1
10	Water carrier KAMAZ 10 tons	units	1
11	Minibus	units	1
12	Fuel[6]	litres	285,760.00
13	Gabion Wire Mesh	m^2	197,400.00
14	Cement	ton	275.00

[6] Items 12, 13 and 14 are emergency materials that will be financed retroactively under the Sub-Component A5 of the Component A (Municipal Infrastructure Rehabilitation). The KMK will procure the goods on behalf of the Recipient based on the estimate prepared by the MLRWR following World Bank Procurement guidelines.

Annex 7: Economic and Financial Analysis
TAJIKISTAN: Municipal Infrastructure Development Project
Additional Financing and Restructuring

A. Financial Analysis

A financial assessment was conducted for the main water supply component in the project as well as for the solid waste component. An affordability analysis was further conducted to show affordability of water tariff levels in Farkhor and Vose.

Overall strategy for improving cost recovery of water supply operation within the project's short timeline. The AF aims to increase cost recovery of water supply services by improving quality and availability of water supply and collection rates of water fees. Main components of the AF aim to achieve this objective through the following efforts: metering program in Farkhor; billing systems in Dangara, Farkhor and Vose; payment solutions in Kurgan-Tube and Kulyab; as well as the connection of individual households in Farkhor and Vose. The AF does not propose any increases in water tariffs, since such a decision is based on improvement in service delivery and institutional efficiencies that need to be in place through a national reform agenda proposed for the sector at large. The AF will nevertheless support the GoRT to develop a Municipal Strategy which will initiate sector dialogue including issues related to institutional reform and tariff policy reform among other considerations.

Financial analysis of Water Supply Component. 1. Water supply and wastewater tariffs in project towns are charged a flat rate of 0.6 Tajik Somonis (TJS)/m3 for water supply and 0.3 TJS/m3 for wastewater. Since connections are not metered, customer billing is based on a pre-assessed volume of water consumed and this parameter varies in different cities. The assessed amount of water delivered to customers depends on the number per household. As such, rates differ by town with Kulyab charging 8 TJS/person/month while in Vose it is 2 TJS/person/month for connected residents. The differentiated tariff reflects in part the cost of operation, different consumption norms per household in different cities and the fact that Dangara, Farkhor and Vose do not provide wastewater services. Other reasons for the difference are the different service levels and tariffs policies.

The collection rates for water fees range from 30% to 70%. Such low tariffs combined with low collection rates explain the unsatisfactory financial performance of the water company in Farkhor, making it difficult to cover daily expenses from revenue. The proposed project is designed to have a positive impact on the financial performance of the companies through: i) improving water supply in Farkhor and Vose, thereby increasing the amount of water sold resulting in an increased willingness to pay for services; ii) introduction of electronic billing and fee collection in Kurgan-Tube and Kulyab which will facilitate and improve fee collection rates; iii) implementation of IT-based accounting and billing system in Dangara, Vose and Farkhor which will improve management control and collection efficiency. The financial impact will likely materialize after project completion.

Projections of the Farkhor water utility indicate that future revenues from water fees will be able to cover operations and maintenance cost with a sufficient margin of 20% as a result of improved

billing and collection. The AF will not aim to increase the tariff within the short implementation timeframe. Projections are based on the assumption that high billing rates can be achieved by implementing a new billing system and high collection rates by installing meters.

Financial analyses estimated the cost recovery tariff level of the water supply component taking into account expected increases in billing and collection rates. The rates are expected to increase from the implementation of billing systems as well as the proposed metering programme. Although the same water and wastewater tariffs are applied in the project towns, the assessed water consumption for non-metered water supply in the towns is at different levels. The effective water and wastewater tariff for connected households in the largest towns of Kurgan-Tube and Kulyab is at a level of more than 7 TSJ/person/month respectively, while in the smaller towns of Dangara, Farkhor and Vose the water tariff is implemented at levels of around 2 TJS/person/month. The smaller towns do not charge for wastewater as they do not have a wastewater system in place.

Table 1. Water and wastewater tariffs in project towns

	Kurgan-Tube	**Kulyab**	**Dangara**	**Farkhor**	**Vose**
Water Tariff (TJS/m^3)	0.60	0.60	0.60	0.60	0.60
Wastewater tariff (TJS/m^3)	0.30	0.30	-	-	-
Flat tariff (TJS/person/month)	7.28	8.19	2.34	1.71	1.78

Financial projections of the water supply component in Farkhor. As the project aims at improving water supply and increase financial sustainability especially in Farkhor, which has the poorest financial performance of the project towns, financial projections were made to investigate whether the water supply in Farkhor will move towards an improved cost recovery with the implemented facilities in operation and the largest investment needs. The projections is based on the assumption that high billing rates can be achieved by implementing new billing system and high collection rates can be achieved by installing meters at the connected water consumers. The projections of Farkhor water supply show that future revenues from water fees will cover cost of operations and maintenance with a sufficient margin of 20% and generate positive cash flow. The implied tariff for the cost recovery of operation and maintenance is expected to be roughly similar in Farkhor and Vose due to similarities in the supply system and size: the water will be extracted from wells and distributed by gravity to a town of the same size and topology as Farkhor. Existing tariffs will not, however, be sufficient to cover depreciation of investment costs in Farkhor, because investment costs are significantly higher in Farkhor ($ 189/per capita) than other towns ($41/per capita on average) because of the dilapidated state of the water supply system. In Farkhor, the implied water tariff level to fully recover operations and maintenance costs as well as investments costs (through depreciation and amortization) would require a level of 1.7 TJS/m^3 for residents and 4.2 TJS/ m^3 for other customers. The projection is shown in table 2 below.

Table 2. Short term financial projection of the Water Supply in Farkhor

	2012				2013				2014			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Coverage, production and supply												
Residents in town - thousands	25	25	25	26	26	26	26	26	26	26	26	27
- with access to piped water supply	17	17	17	16	17	18	19	20	21	21	21	21
Coverage in %	67%	66%	66%	64%	67%	70%	72%	76%	80%	80%	80%	80%
Water production - thousand m^3/day	2.5	2.5	2.5	2.5	2.6	2.6	2.8	2.8	3.4	3.4	3.8	3.8
Water supply - thousand m^3/day	1.3	1.3	1.3	1.3	1.4	1.5	1.6	1.8	2.1	2.2	2.5	2.5
Revenue and expenditures - thousand SMN												
Revenue from water fees	18	18	20	32	48	59	77	84	123	130	148	148
Expenditures	-45	-45	-80	-112	-145	-176	-229	-276	-332	-379	-381	-381
- staff (including 25% in social fees)	-23	-23	-27	-27	-27	-27	-29	-29	-33	-33	-33	-33
- electricity	-2	-2	-2	-2	-2	-2	-4	-4	-6	-6	-7	-7
- fuel and lubricants	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-2	-2
- repair & maintenance	-6	-6	-12	-17	-22	-27	-35	-43	-50	-58	-58	-58
- 8% SEU KMK	-1	-1	-2	-3	-4	-5	-6	-7	-10	-10	-12	-12
- other costs	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
- depreciation	-0	-0	-26	-52	-78	-104	-143	-181	-220	-259	-259	-259
- financial costs	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Profitability margins - thousand SMN												
EBITDA	-25	-25	-32	-27	-17	-12	-8	-8	13	11	27	28
EBIT	-25	-25	-58	-78	-95	-116	-150	-189	-207	-247	-232	-231
EBT	-27	-27	-60	-80	-97	-118	-152	-191	-209	-249	-234	-233
Cash Flow	-27	-27	-34	-29	-19	-14	-10	-10	11	9	25	26
- in % of O&M	-61%	-61%	-63%	-47%	-29%	-20%	-11%	-11%	10%	8%	20%	21%

Water tariffs and affordability. An analysis of affordability for low income households was conducted. The analysis demonstrates that the current level of tariffs, which remain unchanged during the project, are fully affordable for the residents in the two primary project towns of Farkhor and Vose under a conservative planning assumption of low growth of disposable income. Specifically, the affordability analysis demonstrates that the water bill will be at a level of 2-3% of the household income for the median household in the lowest income quintile, for the poorest families. This lies within the parameters of the general accepted affordability benchmark of a maximum of 5% for combined water and wastewater bill. Wastewater service is not charged to the residents in Farkhor and Vose.

Table 3. Affordability Analysis for Household Consumers

Water Bill as % of Household Income	2014			
	Tariff TJS/m^3	LCD[1] billed	Household Income	
			Low[2]	Median
Urban households with piped supply	0.6	100	2.2%	1.0%

[1] Liters per Capita per Day
[2] Defined as the median income in the lowest quintile of households income distribution

Financial analysis of solid waste. Financial analysis was conducted to calculate the breakeven costs for the cost of solid waste services. The current level of solid waste tariff is in both project towns of Farkhor and Vose at 28 TJS/m^3. Assessed amount of solid waste for residents is at 1.5

m^3/year in Vose and at around 1.0 m^3/year in Farkhor. Collection rate for the solid waste fees is at a level of 30% in both project towns, which is resulting in a low level of cost recovery from the collected fees. Projections of the future costs of operation and maintenance are showing unit costs of 20 TJS/m3 which is lower than the current solid waste tariff. However, improvement of the cost recovery from solid waste fees will require increased fee collection rates and/or tariff revisions.

B. Economic Analysis

The economic evaluation of all the main project components is based on a least cost methodology. This method has demonstrated that the components are designed to achieve their objectives in the most cost-effective way. The main considerations for the analysis include options for the site of the water intake area, options for wells, location of water storage, types of residential access to water supply, wastewater system implemented, option for wastewater treatment plant and solid waste collection systems.

There is a severe lack of basic services in Farkhor and Vose. Women and children of Farkhor collect drinking water from storm drains and polluted irrigation canals. Due to insufficient water pressure, the local hospital is required to carry buckets of water for medical needs up four floors. Although the town has a sewerage system, it is unusable and sanitary conditions are desperate. The elderly living in apartment blocks have to walk miles to non-functioning public toilets. The social benefits that are not captured by the economic analysis also highlight that the proposed project will dramatically improve the quality of life of the beneficiary population.

The least cost analysis adopted is in the following exemplified by the options considered for project in Farkhor.

Water Supply Component. The alternatives of not implementing the water supply component in Farkhor were rejected as piped water supply to the urban area of Farkhor is considered a necessity. The type of options considered were the selection of water intake site, rehabilitation of existing wells versus new wells, location of water reservoir and type of water supply services to the residents. Alternative sites for the water abstraction area were considered and rehabilitation of the existing site was chosen partly due to lower costs compared to development of a new site and reliability, distance and cost compared to possible river intake – see table 4 below.

Table 4. Main options considered for the water abstraction area

	Option 1 **Rehabilitate existing WAA** Preferred option	**Option 2** **Replace with intake from Panj River**
Main characteristics		
Distance to city	3 km	Approx. 10 km
Availability of location	Existing facility	New facility, exact location not known
Land condition	Flat	Flat
Raw water source	Underground water	Surface water (river water)
Raw water abstraction	Pumping	Gravity
Vulnerability	Low	High
Resilience	High	Medium

	Option 1 **Rehabilitate existing WAA** Preferred option	**Option 2** **Replace with intake from Panj River**
Amount of available water	Constant, low variability	Seasonal variation
Site infrastructure	Existing buildings and infrastructure can be rehabilitated	Construction of new buildings, fence and installation of infrastructure
Water Treatment	Chlorination	Filters/Settling and Chlorination
Transport to city	Existing pipelines	New pipelines (10 km); New pumping station
Surroundings	Some buildings nearby	Agriculture (with irrigation) on border to Afghanistan - security issues may arise
Energy requirements	Mainly pumping costs	Mainly pumping costs - higher due to longer transport pipeline with more head losses
Electricity connections	Existing, need rehabilitation	Not yet existent, new connections necessary
Legal requirements	already fulfilled	New permit necessary, potential conflict of interest with other riparian countries and with irrigation water provider
Resettlement issues	Informal settlement near fence, sanitation needs improvement	Extent of resettlement issues unknown, however agricultural land use and irrigation are issues
Environment impact	Basically none	Reduction of flow, some impact possible in dry weather conditions
Cost estimates		
Size of investment	US$ 815,000.00 (lower)	US$ 3,500,000.00 (higher)
Cost of O&M	US$ 150,000.00 per year (lower)	US$ 220,000.00 per year (higher)

The location of the water storage were considered from a topologic criteria leading to selection of location to where the raw water can flow by gravity without pumping avoiding costs of pumping stations and pumping – see table 5 below. This alternative was further considered attractive as the electricity supply is limited to nine hours daily during the winter. Capacity of pumping and water storage was estimated to meet the demand in the planning period, taking population growth, and current/future water consumption patterns into account. In terms of types of distribution individual household metered connections were chosen compared to communal street taps as it is considered to provide the best basis for future cost recovery due to water savings and higher billing and collection rates.

Table 5. Main options considered for the water storage

	Option 1	**Option 2**
	High-level Tank Preferred option	**Low-level Tank**
Main characteristics		
Distance to city.	1 km	3 km
Availability of location	Site is available and property of utility	On site of WAA, Site is available and property of utility
Land condition	Flat	Flat
Vulnerability	Low	Low
Resilience	High	High

	Option 1	Option 2
	High-level Tank Preferred option	**Low-level Tank**
Main characteristics		
Transport pipeline from Water Abstraction Area (WAA) to storage tank	3 km (0,4 new pipeline)	On-site, no transport pipeline
Ground conditions	Require special attention (loess)	Good bearing capacity (sand-gravel)
Transport to city	1 km (0,4 new pipeline)	Existing pipeline (3 km)
Level of Service	Pressure up to 40 - 50 m water head 24-hour service possible, 16-hour service is guaranteed	Pressure depends on pump dimensions Service only when electrical power available or if generator (fossil fuel) is provided
Surroundings	Some buildings nearby	On site of WAA
Energy requirements	Supply to city by gravity,	Supply by pumping; Additional energy to cover peak water demands; Fossil fuel for generator (when no electric power available)
Effect on equipment requirements of WAA	Pumps can operate at optimal operating point (pressure vs. flowrate)	Pumps with variable speed adjustable to demand fluctuations; Generator (fossil fuel) to provide 16h service
Electricity connections	New connection, transmission line nearby	Exist
Legal requirements	Site already dedicated for Water Storage Tank, permit process should be simple	On-site of existing WAA - permit easily acquired
Resettlement issues	One house under construction (foundations only) near site	No additional resettlement issues
Environment impact	Basically none	Use of fossil fuel for generator increases CO2 load
Cost estimates		
Size of investment	US$ 715,000.00 (higher)	US$ 650,000.00 (lower)
Cost of O&M	US$ 20,000.00 per year (lower)	US$ 60,000.00 per year (due to energy costs: higher)
Note: Water tower is further option - however 4 - 6 x investment cost of high-level tank plus vulnerability regarding earthquakes - therefore not considered in further detail. Rehabilitation of old tank or new construction on old site technically not feasible due to extreme poor ground conditions (uneven settling, cracks and breaks, unstable slopes) and condition of tank (e.g. holes, wall missing) and settlement of abandoned site.		

Wastewater Component. The alternatives of implementing a wastewater component in Farkhor were rejected, as the current condition is not sustainable. Due to limited funding resources of this project the short term investments will be focused on improving the latrine system in the town and procurement of a truck for emptying the pits. In the long term, beyond this project, the decentralized sanitation systems will be considered as in interim solution to rehabilitating the entire sewage system and wastewater treatment plant. The wastewater treatment plant will be based on aerated lagoons as the preferred option due to low investment cost and cost of operation and maintenance. Less expensive options of wastewater system based on septic tanks was found not applicable due to the geological condition of the project town.

Solid Waste Component. Due to limited funding resources of this project and the assumed low cost recovery from solid waste fees, the short term solution was chosen to focus at improving the

current solid waste collection and disposal system and constructing a temporary solid waste dump in the existing landfill. In the long term implementation of sanitary land fill may be considered as a preferred district level solution. Options considered for the short term improvement of the solid waste collection system included implementation of centralised solution with communal collection points versus a preferred option of implementing a collection as a combination of household connections and communal collection points. The option of combined house collection and communal collection points was found most favourable partly as it requires less collection points and thereby lower investments – see table 6 below for presentation of options.

Table 6. Main options considered for the solid waste collection

	Option 1 **Communal Collection Points**	**Option 2** **House Collection and Collection Points** ***Preferred option***
Main characteristics		
Availability of locations	19 existing sites on city property, 16 additional sites necessary	19 existing sites on city property, no additional sites necessary
Investment requirements	Paving of 35 collection points and access road. Purchase of vehicles	Paving of 19 existing collection points and access road; Purchase of vehicles
Acceptance by users	Users generally have poor opinion on collection points due to bad experience with open deposit of waste. Use of containers and paving collection points may improve acceptance.	In use in part of the city, high acceptance if schedules are kept; Users generally have poor opinion on collection points due to bad experience with open deposit of waste; Use of containers and paving collection points may improve acceptance
Equipment requirements (for 100 % coverage)	95 PIP + 225 LTIP 750l Containers with lid 2 rear-loading garbage trucks (1 PIP)	95 PIP + 95 LTIP 750l Containers with lid 2 rear-loading garbage trucks (1 PIP)
Labour requirements (PIP)	Driver + 2 loaders	Driver and 2 loaders
Level of Service	Solid waste has to be delivered to collection points by users	Solid waste is collected at the house of users according to schedule
Coverage in short-term PIP (present coverage)	65 % (65 %) no significant increase	80 % (65 %) 15 % increase (+3800 users)
Health hazards	Open waste when deposit containers are full	Low if waste is not deposited (bags) in front of house before collection; Open waste when deposit containers are full
Energy requirements	Fuel consumption lower because of shorter routes	Fuel consumption higher, longer routes and frequent stops
Legal requirements	Sites already used for collection points	No new permits required
Resettlement issues	Possible for additional sites	None
Environment impact	Use of fossil fuel and increases CO2 load	Higher use of fossil fuel and increases CO2 load more
Cost estimates		
Size of investment	PIP 130,000 USD *LTIP 400,000. USD* (higher)	PIP 130,000. USD *LTIP 260,000. USD* (lower)
Cost of O&M *PIP (LTIP)*	US$ 20,000.00 (US$ 40,000.00) per year (equal)	US$ 25,000.00 (US$ 40,000.00) per year (equal)
Note: PIP = Priority Investment Program (MIDP AF); LTIP = Long-term Investment Program. In the long-term collection points can be used as recycling points (no stranded investment in Option 2)		