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Report No: PAD426

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF US\$ 4.5 MILLION

TO THE

PALESTINE LIBERATION ORGANIZATION FOR THE BENEFIT OF THE
PALESTINIAN AUTHORITY

FOR A

HEBRON REGIONAL WASTEWATER MANAGEMENT PROJECT – PHASE 1

March 20, 2015

Water Global Practice
Middle East and North Africa Region

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CURRENCY EQUIVALENTS

September 30, 2014

Currency Unit = New Israeli Shekel (NIS)
NIS 3.69 = US\$1.00
US\$0.27 = NIS 1.00

FISCAL YEAR

July 1 – June 30

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
AFD	Agence Française de Développement
BOD	Biochemical Oxygen Demand
CAPEX	Capital Expenditures
CAS	Conventional Activated Sludge
CBS	Capacity Building Specialist
CM	Cubic Meter
C/O	Contractor/Operator
DA	Designated Account
EA	Environmental Assessment
EC	European Commission
EMMP	Environmental Management and Monitoring Plan
ESCHMP	Environmental, Social, and Cultural Heritage Management Plan
ESCHIA	Environmental, Social, and Cultural Heritage Impact Assessment
EQA	Environmental Quality Authority
FM	Financial Management
FY	Fiscal or Financial Year
GDP	Gross Domestic Product
GOI	Government of Israel
HM	Hebron Municipality
HRWMP	Hebron Regional Wastewater Management Project
HR WWTP	Hebron Regional Wastewater Treatment Plant
IRR	Internal Rate of Return
IWA	Israel Water Authority
IWRP	Integrated Water Resources Program
JWC	Joint Water Committee
KFW	Kreditanstalt für Wiederaufbau
MCM	Million Cubic Meters
M&E	Monitoring and Evaluation
MNA	Middle East and Northern Africa
MoA	Ministry of Agriculture
MoF	Ministry of Finance
NGEST	Northern Gaza Emergency Sewerage Treatment Project
NGO	Non-Governmental Organization
NPV	Net Present Value
O&M	Operation and Maintenance

OPEX	Operational Expenditures
PA	Palestinian Authority
PDO	Project Development Objectives
PMC	Project Management Consultant
PMU	Project Management Unit
PP	Procurement Plan
PPA	Project Preparation Advance
PWA	Palestinian Water Authority
RMP	Risk Management Plan
SBR	Sequential Batch Reactor
SMP	Social Management Plan
TA	Technical Assistance
TFGWB	Trust Fund for Gaza and the West Bank
TOR	Terms of Reference
TOU	Technical Operations Unit
TP	Total Phosphorous
TWW	Treated Wastewater
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
USAID	United States Agency for International Development
WBG	West Bank and Gaza
WRP	Water Resources Program
WSS	Water Supply and Sanitation
WSCBP	Water Sector Capacity-Building Project
WWD	Water Supply and Wastewater Department
WWTP	Wastewater Treatment Plant

Regional Vice President:	Hafez M. H. Ghanem
Country Director:	Steen Lau Jorgensen
Senior Global Practice Director:	Junaid K. Ahmad
Practice Manager:	Steven N. Schonberger
Task Team Leader:	Pieter David Meerbach
Co-Task Team Leader	Iyad Rammal

WEST BANK AND GAZA
Hebron Regional Wastewater Management Project – Phase 1

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PAD DATA SHEET

West Bank and Gaza

Hebron Regional Wastewater Management Project - Phase 1 (P117449)

PROJECT APPRAISAL DOCUMENT

MIDDLE EAST AND NORTH AFRICA

WATER GLOBAL PRACTICE

Report No.: PAD426

Basic Information			
Project ID P117449	EA Category A - Full Assessment	Team Leader Pieter David Meerbach	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints []		
	Financial Intermediaries []		
	Series of Projects [X]		
Project Implementation Start Date April 10, 2015	Project Implementation End Date 31-Dec-2022		
Expected Effectiveness Date May 15, 2015	Expected Closing Date 31-Dec-2022		
Joint IFC No			
Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Steven N. Schonberger	Junaid Kamal Ahmad	Steen Lau Jorgensen	Hafez M. H. Ghanem
Borrower: Palestine Liberation Organization (PLO) for the benefit of the Palestinian Authority (PA)			
Responsible Agency: Hebron Municipality			
Contact: Telephone No.:	Prof. Dr. Daoud I. Zatarid 970-2-222-7992	Title: Email:	Mayor zatarid@hebron-city.ps
Responsible Agency: Palestinian Water Authority			
Contact: Telephone No.:	Eng. Mazen Ghunaim 970-2-2987665	Title: Email:	Minister, Head of PWA mghunaim@pwa.ps

Project Financing Data(in USD Million)										
<input type="checkbox"/>	Loan	<input type="checkbox"/>	IDA Grant	<input type="checkbox"/>	Guarantee					
<input type="checkbox"/>	Credit	<input checked="" type="checkbox"/>	Grant	<input type="checkbox"/>	Other					
Total Project Cost:		61.65				Total Bank Financing:		4.50		
Financing Gap:		5.50								
Financing Source						Amount				
Borrower						14.23				
US Agency for International Development (USAID)						4.82				
EC European Commission						18.73				
FRANCE Govt. of [MOFA and AFD (C2D)]						13.87				
Special Financing						4.50				
Total						56.15				
Expected Disbursements (in USD Million)										
Fiscal Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	0000
Annual	0.80	1.10	1.10	1.10	0.20	0.20	0.00	0.00	0.00	0.00
Cumulative	0.80	1.90	3.00	4.10	4.30	4.50	4.50	4.50	4.50	0.00
Institutional Data										
Practice Area / Cross Cutting Solution Area										
Water										
Cross Cutting Areas										
<input type="checkbox"/> Climate Change										
<input type="checkbox"/> Fragile, Conflict & Violence										
<input type="checkbox"/> Gender										
<input type="checkbox"/> Jobs										
<input type="checkbox"/> Public Private Partnership										
Sectors / Climate Change										
Sector (Maximum 5 and total % must equal 100)										
Major Sector				Sector		%	Adaptation		Mitigation	

			Co-benefits %	Co-benefits %
Public Administration, Law, and Justice	Public administration-Water, sanitation and flood protection	20		
Water, sanitation and flood protection	Wastewater Treatment and Disposal	60	60	60
Water, sanitation and flood protection	General water, sanitation and flood protection sector	20	20	
Total		100		
<input type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.				
Themes				
Theme (Maximum 5 and total % must equal 100)				
Major theme	Theme	%		
Urban development	Municipal governance and institution building	20		
Urban development	City-wide Infrastructure and Service Delivery	80		
Total		100		
Proposed Development Objective(s)				
The objective is to reduce the environmental pollution from wastewater produced in the Hebron Municipality.				
Components				
Component Name	Cost (USD Millions)			
Wastewater Treatment Infrastructure	39.90			
Sustainable Management, Operation, and Maintenance of Hebron Regional Wastewater Treatment Plant	17.00			
Project Management, Monitoring and Evaluation, and Master Plan Implementation Planning	4.75			
Compliance				
Policy				
Does the project depart from the CAS in content or in other significant respects?			Yes []	No [X]

Does the project require any waivers of Bank policies?		Yes []	No [X]
Have these been approved by Bank management?		Yes []	No [X]
Is approval for any policy waiver sought from the Board?		Yes []	No [X]
Does the project meet the Regional criteria for readiness for implementation?		Yes [X]	No []
Safeguard Policies Triggered by the Project		Yes	No
Environmental Assessment OP/BP 4.01		X	
Natural Habitats OP/BP 4.04			X
Forests OP/BP 4.36			X
Pest Management OP 4.09			X
Physical Cultural Resources OP/BP 4.11			X
Indigenous Peoples OP/BP 4.10			X
Involuntary Resettlement OP/BP 4.12			X
Safety of Dams OP/BP 4.37			X
Projects on International Waterways OP/BP 7.50			X
Projects in Disputed Areas OP/BP 7.60			X
Legal Covenants			
Name	Recurrent	Due Date	Frequency
Schedule 2, Section I.D	X		CONTINUOUS
Description of Covenant			
The Recipient, through the Palestinian Authority shall cause PWA: (i) to carry out the Project in accordance with the ESCHIA/ ESCHMP; (ii) not to amend, suspend, abrogate, repeal or waive any provision of the ESCHIA/ESCHMP without prior concurrence of the Bank; and (iii) to monitor the implementation of the ESCHMP and report to the Bank as part of Project Reports on its compliance with the ESCHMP.			
Name	Recurrent	Due Date	Frequency
Article IV 4.02		01-Jul-2015	
Description of Covenant			
The effectiveness deadline for the EC Co-financing Agreement is July 1, 2015.			
Conditions			
Source Of Fund	Name	Type	
SPF	Article V 5.01 (a)	Effectiveness	

Description of Condition			
The execution and delivery of the Grant Agreement on behalf of the Recipient have been duly authorized or ratified by all necessary governmental and/or corporate action.			
Source Of Fund	Name	Type	
SPF	Article V 5.01 (b)	Effectiveness	
Description of Condition			
The Subsidiary Agreement between the Palestine Liberation Organization and the Palestinian Authority has been executed on behalf of the Palestine Liberation Organization and the Palestinian Authority.			
Source Of Fund	Name	Type	
SPF	Article V 5.01 (c)	Effectiveness	
Description of Condition			
The Co-financing Agreement with the Agence Française de Développement has been executed and declared effective.			
Source Of Fund	Name	Type	
SPF	Article V 5.01 (d)	Effectiveness	
Description of Condition			
A Memorandum of Understanding between Hebron Municipality and PWA has been executed on behalf of the Hebron Municipality and the PWA.			
Source Of Fund	Name	Type	
SPF	Article V 5.01 (e)	Effectiveness	
Description of Condition			
The Recipient has caused PWA to adopt a Project Implementation Manual, in form and substance, satisfactory to the World Bank.			
Team Composition			
Bank Staff			
Name	Title	Specialization	Unit
Fifi Z. Antar	Program Assistant	Program Assistant	MNCGZ
Evarist F. Baimu	Senior Counsel	Senior Counsel	LEGAM
Nina Bhatt	Lead Social Development Specialist	Social Safeguards	GSURR
John R. Butler	Lead Social Development Specialist	Social Safeguards	GSURR
Lina Fathallah Rajoub	Senior Procurement Specialist	Procurement	GGODR

Tracy Hart	Senior Environmental Specialist	Environmental Safeguards	GENDR
Riham Hussein	Financial Management Specialist	Financial Management	GGODR
Basheer Ahmad Fahem Jaber	Procurement Analyst	Procurement	GGODR
Nadi Yosef Mashni	Financial Management Specialist	Financial Management	GGODR
Pieter David Meerbach	Sr Water Resources Spec.	Team Lead	GWADR
Richard W. Pollard		Team Lead	MNSWA
Iyad Rammal	Senior Infrastructure Specialist	Institutional aspects, co-Team Lead	GWADR
Andrianirina Michel Eric Ranjeva	Finance Officer	Finance Officer	CTRLA
Hana Salah	Consultant	Social Safeguards	GSURR
Nikolai Soubotin	Lead Counsel	Lead Counsel	LEGAM
Velaythampillai Vijayaverl	Senior Procurement Specialist	Procurement	GGODR
Mei Wang	Senior Counsel	Senior Counsel	LEGAM
Caroline van den Berg	Lead Water and Sanitation Specialist	Economic Analysis	GWADR

Non Bank Staff

Name	Title	City

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
West Bank and Gaza	West Bank	West Bank		X	

I. STRATEGIC CONTEXT

A. Country Context

1. Economic and social development in West Bank and Gaza has been severely constrained by conflict and the restrictions on movement and access of people and goods placed by the Government of Israel (GoI). The recent conflict in Gaza during July 8 through August 26, had devastating impacts. According to estimates from the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), 2,131 people died, close to 11,000 people have been wounded, and 28% of Gazans were displaced during the conflict. Prior to the conflict, a consensus Palestinian government under the leadership of President Abbas was established in May 2014, with a cabinet of technocrats, who are not affiliated to any political party, but with broad support from all Palestinian parties. Growth, which started falling since 2012 as a result of a decline in foreign aid, fell further to less than 2% in 2013 and a projected -1% in 2014.

2. Israeli restrictions¹ on economic activity, in particular those on trade, movement and access substantially increase the cost of trade and make it impossible to import many production inputs into the Palestinian territories. The economic decline is resulting in growing unemployment. Unemployment reached 26 percent by the middle of 2014: 16 percent in the West Bank and a staggering 45 percent in Gaza. At 40 percent each, women and youth have particularly high levels of unemployment. Almost 23 percent of the workforce is employed by the public sector, an uncommonly high proportion that reflects the lack of dynamism in the private sector. A quarter of all Palestinians live in poverty according to a national poverty line based on a basic needs package of goods, with poverty rates in Gaza being twice that of the West Bank.

3. Recent growth trends in the West Bank and Gaza underscore the importance of aid in driving the economy; most of the growth witnessed over the last several years was in the public and non-tradable sectors and was driven by donor-supported Palestinian Authority (PA) expenditures. The restriction system put in place by the Government of Israel continues to obstruct potential private investment that could reduce dependence on donor aid. However, in spite of the PA's reform efforts, lower than expected foreign aid is both hindering growth and putting significant stress on the PA's fiscal situation. Donor aid for recurrent spending and development projects has declined from US\$ 1.98 billion in 2008 to US\$ 930 million in 2012. This has been compounded by shortfalls in revenue as well as higher than expected expenditures—particularly pension payments. The PA has had to compensate for the lower than expected level of donor aid with domestic sources. This has been causing frequent delays in salary payments to public employees, accumulation of arrears to the private sector, as well as increased borrowing from local commercial banks.

4. The main industrial and economic center in the southern West Bank, still generating employment opportunities, is the Hebron Municipality, with a population in 2013 of about 200,000 people. Hebron is the heart of the Palestinian stone-cutting industry, and its products in 2010 accounted for the largest share of Palestinian exports by value (27 percent of total exports). Hebron Governorate (province) is one of the largest in the West Bank in terms of area and population, and it has the second largest area of agricultural land, second only to Jenin, with

¹ According to the Government of Israel, these restrictions are for the purpose of enhancing the security of Israel and Israeli citizens.

more than 53,000 hectares of agriculture land. The few small areas with access to irrigation water predominantly grow high-value vegetable and fruit crops.

B. Sectoral and Institutional Context

5. *General:* Water is a key economic development and humanitarian issue in the West Bank and Gaza. Palestinian water resources availability and rights to water are linked to the Oslo Accords. As a result of the restrictions currently in place, Palestinians cope with one of the lowest levels of per capita water resource availability in MNA². In the West Bank, development of water resources and infrastructure is subject to Israeli veto power under the Joint Water Committee (JWC). In Gaza, it is curtailed by a security blockade. These restrictions, along with weak Palestinian institutions and operators³ and fast demographic growth, perpetuate water supply and sanitation (WSS) infrastructure and service deficits as well as operational inefficiencies.⁴ They result in a heavy reliance on water trucking, makeshift desalination, and non-potable water supplies, while also increasing dependence on the Israeli bulk water utility, Mekorot. The pervasive impacts of this situation are the strongest in Gaza, in Area C⁵, and on the poor. The lack of wastewater treatment contributes to widespread contamination of aquifers that are for the most part shared between Israel, the West Bank, and Gaza. All the while, planning and regulation of water resources is very weak, and the potential of the irrigation sector remains largely underdeveloped. In a context of harsh water scarcity, now exacerbated by climate change, it is important for Palestinians to make the most of wastewater as a recycled water resource, and to avoid losing usage rights to this resource.

6. Both institutional and infrastructure needs in the West Bank and Gaza water sector are supported through coordinated donor-financed programs and NGO cooperation. In order to address underlying capacity weaknesses in the Palestinian water sector, a comprehensive reform program is implemented by the Palestinian Water Authority (PWA) in line with the new water law and with the support of the international donor community. Core elements of the reform are to enhance the regulation of the sector through the Water Sector Regulatory Council, to establish clearer roles and accountability for the PWA as the central body for water resource management, and to lay the foundation and build the capacity to eventually establish regional utilities responsible for water supply and wastewater management. Critical infrastructure requirements are funded through both donor-specific projects as well as multi-donor initiatives in which a combination of pooled, trust funds and parallel financing is brought together in support of a single project or program.

7. *Wastewater pollution in the Hebron Governorate:* A pressing environmental and public health issue is that most of the sewage from the main Palestinian centers of population currently runs untreated through populated areas and environmentally sensitive zones. In the case of the Hebron Governorate, the environmental damage that the 10,000 cubic meter (CM) per day of

² 75 CM/per capita (pc)/year in the West Bank and 125 CM/pc/yr in Gaza (<500CM/pc/yr defines “water stress”).

³ World Bank (2009) *Assessment of Restrictions on Palestinian Water Sector Development*, report 47567-GZ (aka *Water Restrictions Study*)

⁴ Although 90% of the population and 64% of communities have access to a water network, service discontinuity results in average consumptions as low as 50 l/pc/day, dropping to a crippling 15 l/pc/day in some areas. All the while, water loss and bill collection rates hover around 35 percent and 50 percent respectively.

⁵ The West Bank is divided per Oslo Accords into 3 areas: 2 areas are under Palestinian control and correspond to all major population centers (Area A) and most rural communities (Area B). The third area, Area C, is under Israeli control both for security and for civilian affairs, including land administration and planning.

sewage of Hebron city causes to the eastern aquifer and the communities along the sewage stream in Wadi As-Samen, which runs south towards the green line with Israel, was identified as a serious issue as far back as the 1970s. While the Israel Water Authority (IWA) currently is treating the sewage from Wadi As-Samen in a tertiary wastewater treatment plant (WWTP) at Shoket in Israel, treatment costs are charged to the PA and the treated effluent does not benefit the Palestinian households living along Wadi As-Samen, nor does it allow for the treated wastewater to be reused for agriculture in the West Bank.⁶

8. Plans for a regional solution for wastewater management in the Hebron Governorate were elaborated in the “Stormwater, Domestic Wastewater and Industrial Wastewater Master Plan for Hebron” (2001), which was developed with financing of the United States Agency for International Development (USAID) within the framework of the West Bank Water Resources Program, (WRP, 2001-2006). The WRP noted that pollution of the eastern-aquifer as a result of untreated sewage, not only from Hebron Municipality but also from other communities in the Governorate, was already occurring, and measured elevated nitrate concentrations in some potable water wells. Detailed aquifer modeling showed that the ongoing pollution of the aquifer would lead to serious detrimental effects on the potential of the eastern aquifer to provide safe potable water. Therefore, the Master Plan proposed a comprehensive, phased program to addressing these regional wastewater management issues. The objective of the program would be to improve wastewater management and reuse for the benefit of water users and the environment in the Hebron Governorate. The first phase of the program would address the immediate needs of treatment of the existing sewage stream coming from 80 percent of Hebron Municipality which is currently sewered, through construction of the first phase of the Hebron regional wastewater treatment plant (HR WWTP). The second phase would consist of an agricultural project for the construction of an irrigation scheme for reuse of the treated effluent adjacent to the HR WWTP. Depending on the available financing, phase 3 would finance the construction of sewerage networks and associated treatment and reuse capacity for the remaining 20% of Hebron Municipality which is unsewered, with phase 4 financing sewerage, treatment and reuse capacity for communities alongside Wadi As-Samen, like Yatta and Al-Dahriyyeh. Since the institutional capacity for wastewater management among municipalities in the Governorate is low, technical assistance for management of sewerage, wastewater treatment and reuse infrastructure is a core component of the Master Plan, throughout each of the proposed phases. Total costs for implementation of these phases would be in excess of US\$ 100 million. The plan and the first phase were approved by the PWA and the JWC, and the Civil Administration issued permits. The proposed Hebron Regional Wastewater Management Project-Phase 1 (HRWMP-1) covers the activities of the first phase of the Master Plan, namely the construction of a WWTP treating the existing and projected sewage flow in Wadi As-Samen from Hebron Municipality.

9. Since treatment and prevention of industrial wastewater is of critical importance for the implementation of the Master Plan and the construction and Operation and Maintenance (O&M) of the proposed HR WWTP, Hebron Municipality and USAID in 2012 began a program to manage wastewater from stone-cutting operations in Hebron’s industrial area. Pre-treatment facilities at stonecutting factories were installed and enforcement measures were put in place to

⁶ IWA plans to switch the Shoket WWTP to treat the sewage of communities in the north Negev, on the Israeli side of the green line once the Hebron WWTP has been commissioned.

eliminate illegal disposal of industrial wastes in the sewer network and streams. The program successfully contained most of the stonecutting waste and was turned over to the Municipality and the PWA for management in July 2013. In the same month, USAID completed a Hebron Industrial Discharges Study that provides a strategic plan for comprehensive management of all industrial wastes from Hebron Municipality⁷ that is based on in-situ pre-treatment and strengthened regulation. Based on the actions proposed in this study Hebron Municipality and the PWA agreed to implement an action plan to comprehensively address treatment and disposal of industrial wastewater.

C. Higher Level Objectives to which the Project Contributes

10. The proposed Hebron Regional Wastewater Management Project-Phase 1 (HRWMP-1) is aligned with the World Bank Group's Assistance Strategy for the West Bank and Gaza for the Period FY15 – FY16. It is critical to establishing basic wastewater services for Hebron city, and as such directly supports the efforts of the PA to strengthen public institutions to ensure service delivery to citizens, the first pillar of the Assistance Strategy. The proposed HRWMP-1 also improves environmental protection through reducing uncontrolled sewage and making treated effluent available for agriculture supporting private sector led growth that increases employment opportunities, which is the second pillar of the Strategy. There is future scope for private sector development through private sector participation in wastewater management and reuse, and by improving environmental conditions for the development of new industries that may be dependent on clean water.

11. In line with the underlying aim of the Assistance Strategy, the HRWMP-1 would support efforts to achieve the World Bank Group's global twin goals of ending extreme poverty and boosting shared prosperity in a sustainable way by reducing environmental pollution from the wastewater of 200,000 inhabitants of Hebron city, affecting the downstream communities, whilst at the same time producing treated effluent which could be used in irrigated agriculture. Currently, some 104,000 people along Wadi As-Samen are affected by uncontrolled sewage, and of these, some poor households may be forced to rely on water in Wadi As-Samen for both irrigation and other uses due to a lack of alternative sources. The HRWMP-1 would reduce the pollution loadings in Wadi As-Samen and thereby reduce the risks for low income users, and would enable wastewater reuse for irrigation, supported in subsequent investments that could benefit around 400-500 low income farmers in Wadi As-Samen who previously did not have access to irrigation for their crops. As such the HRWMP-1 would be the first significant contribution to meeting the objective of the "Stormwater, Domestic Wastewater and Industrial Wastewater Master Plan for Hebron" to improve wastewater management and reuse for the benefit of water users and the environment in the Hebron Governorate. In addition, the project is also aligned with MENA's Regional Strategy, supporting the pillar of sustainable growth.

⁷ The industries in Hebron are largely concentrated in an industrial zone in the southern part of the municipality and chiefly comprise stone-cutting, tanneries, abattoirs, and olive oil presses.

II. PROJECT DEVELOPMENT OBJECTIVE (PDO)

A. PDO

12. The objective of the project is to reduce the environmental pollution from wastewater produced in Hebron Municipality.

B. Project Beneficiaries

13. The principal beneficiaries of the HRWMP-1 would include: (i) the approximately 104,000 residents of Palestinian communities along Wadi As-Samen downstream of the HR WWTP who will no longer be affected by uncontrolled raw sewage flowing into the wadi; and (ii) the approximately 790,000 Palestinians in the Bethlehem and Hebron Governorates obtaining their water supplies from the Eastern aquifer, who will benefit indirectly, as this project will serve to protect the aquifer from further contamination and ensure it remains available for continued use by area residents. Females are estimated at about 51% of the population of these Governorates. Additional beneficiaries include the PWA and Hebron Municipality who will receive capacity building to implement the project and manage the HR WWTP.

C. PDO Level Results Indicators

14. Key results of the HRWMP-1 are the following: (i) secondary treatment⁸ of the current wastewater stream discharged from Hebron Municipality in Wadi As-Samen, with corresponding reduction of nutrient loads in the wadi and infiltrating into the aquifer; (ii) sustainably managed treatment of wastewater loads from Hebron Municipality; and (iii) increase of water potentially available for irrigating farmers' lands⁹. Results will be measured through quantifiable indicators including: (a) volume (mass) of Biochemical Oxygen Demand (BOD) pollution load removed by treatment plant under the project; (b) number of days that treated wastewater is meeting the effluent standards established by the PA; and (c) direct project beneficiaries and percentage of female beneficiaries.

III. PROJECT DESCRIPTION

A. Project Components

15. The proposed HRWMP-1 builds on the 2001 Master Plan and detailed feasibility studies for the construction of the HR WWTP, conducted under the USAID-funded WRP (2002-2006). These studies were comprehensively updated with financing of the World Bank through a Project Preparation Advance and the Agence Française de Développement (AFD) during preparation of the HRWMP-1, including additional wastewater flow and load measurements to account for changes occurred since 2006. Based on these studies, the HRWMP-1 has three components in order to meet the PDO: (i) Wastewater Treatment Infrastructure; (ii) Sustainable Management, Operation, and Maintenance of Hebron Regional Wastewater Treatment Plant; and (iii) Project Management, Monitoring and Evaluation and Master Plan Planning.

16. **Component 1: Wastewater Treatment Infrastructure (US\$ 39.9 million, of which US\$ 2.1 million Special Financing):** This component will finance the design and construction

⁸ To a standard deemed to be acceptable for wastewater reuse for the irrigation of food crops according to PA regulations, in anticipation of a subsequent project that would introduce wastewater reuse.

⁹ An effluent reuse scheme is envisaged for a second phase of the project, or for a subsequent project.

of the HR WWTP providing secondary treatment with a design capacity of 15,000 CM per day in the first phase. This capacity accommodates the wastewater flow of 10,000 CM per day from Hebron Municipality, as measured in 2011, as well as pre-treated industrial wastewater and additional wastewater loads from currently connected communities within a 10-12 year planning horizon. The plant will be designed in a modular way, allowing for the installation of additional treatment capacity up to 35,000 CM per day, for future connections of communities in the wider Hebron Governorate. The design will also accommodate the option to add tertiary treatment to further upgrade the effluent quality, if required in the future, for various reuse purposes. The treated effluent will meet the PA's standards for secondary treatment, as agreed by the JWC, which allows for disposal to the wadi and for effluent reuse in restricted forms of irrigated agriculture on currently un-irrigated lands adjacent to and downstream from the WWTP in a subsequent future project. Sludge from the WWTP will be treated to a degree that will allow for landfilling, and can be further upgraded for restricted soil conditioning for agricultural purposes. In order to achieve these goals the HR WWTP will include: (i) intake and pre-treatment (grit and screening removal); (ii) biological treatment with nutrient removal; (iii) filtration and disinfection; (iv) sludge thickening; (v) sludge stabilization for reducing vector attraction and odors; and (vi) dewatering systems for obtaining a dry sludge that can be hauled away. The HR WWTP will be constructed at a site of eleven hectares (ha), owned by the PA, 4 km downstream from Hebron city. The contract for the HR WWTP will include the design, supply, installation and operation for five years prior to hand-over, and the bid documents will include specifications which favor a WWTP design that minimizes energy and operation and maintenance (O&M) costs so as to enhance the sustainability of WWTP. Supervision of design and construction, as well as quality assurance, will be done by contracting consulting engineering services to provide assistance to the PWA as Project Management Consultants (PMC), and is included in this Component.

17. Component 2: Sustainable Management, Operation, and Maintenance of Hebron Regional Wastewater Treatment Plant (US\$ 17.0 million, of which US\$ 1.0 million Special Financing): This component will finance technical assistance to train and build the capacity of the Hebron Municipal Water and Wastewater Management Department, in order to have the Municipality fully capable to manage the part of the HR WWTP contract covering the operation and maintenance (O&M) of the plant during a five year time-frame and enhance the capacity of the Department to obtain financial sustainability of water and wastewater services. It is envisaged that this component will receive Additional Financing for supplementary O&M once the contract for the HR WWTP has been awarded. Donor financing for O&M would be on a declining scale - 100% of O&M costs for the first year following commissioning of the HR WWTP, followed by a progressive reduction of costs for each year over the five year period of technical assistance, with Hebron Municipality financing the remainder. In order to enhance the capacity of the Municipality to meet these financial targets, the project will also finance technical assistance to introduce wastewater tariffs, implement water and wastewater tariff reforms, improve the collection of fees, and increase the financial revenue of the sector towards cost recovery. Technical assistance financed under this component will be closely coordinated with and augment the industrial wastewater management program currently implemented by Hebron Municipality to ensure that there are no deleterious impacts on the functioning of the HR WWTP caused by un-pretreated industrial discharges.

18. Component 3: Project Management, Monitoring and Evaluation and Master Plan Implementation Planning (US\$ 4.7 million, of which US\$ 1.4 million Special Financing):

This component will finance project management staffing and costs incurred by the PWA and the establishment of a Technical Operations Unit (TOU) in Hebron Municipality. In addition, financing will be provided for consultant engineering services to design the proposed HRWMP-Phase 2 (HRWMP-2), which would include an agricultural project for reuse of treated effluent in irrigated agriculture, possible upgrading of the sludge quality for use as soil conditioner, and possible sewer network expansion and further upgrading of the effluent quality for irrigation through tertiary treatment.

B. Project Financing

Lending Instrument

19. The financing instrument for the World Bank contribution is Investment Project Financing through a US\$ 4.5 million grant from the Trust Fund for Gaza and the West Bank.

Project cost and financing

20. The total project cost is US\$ 61.65 million, inclusive of taxes, including a total base cost of US\$ 57.45 million, and physical and price contingencies of US\$ 3.7 million (estimated at about 6% of base costs). Co-financing of € 10.00 million is provided by AFD. The European Commission (EC) will provide joint co-financing through a delegation arrangement with AFD of € 15.00 million. USAID provides parallel financing in kind for construction of an access road, potable water and electricity grid connection to the site as well as a 600 meter trunk sewer connection between the sewer network and the site, and provision of potable water supply and connection to the electricity grid. The estimated cost of the USAID contribution is US\$ 4.82 million. Tax contribution of around US\$ 6.73 million is provided in kind by the PA through tax exemptions for the AFD/EC and USAID contributions, whereas the estimated contribution from Hebron Municipality for O&M of the HR WWTP is estimated at US\$ 7.50 million. Overall committed donor financing, including the proposed US\$ 4.5 million grant from the Trust Fund for Gaza and the West Bank (TFGWB), is US\$ 41.92 million, leaving a financing gap of US\$ 5.5 million, which is expected to be covered in FY2016 or later from Additional Financing to the HRWMP-1. The project cost summary by component is shown in Table 1.

Table 1. Project financing by component.

Project Components	Costs	World Bank financing HRWMP-1 ¹	Expected World Bank financing HRWMP-1 AF	% WB financing	AFD/ EC	USAID	PA ²	Hebron Municipality
Wastewater treatment infrastructure	37.40	2.08		6%	25.13	4.82	5.39	
Sustainable Management, Operation, and Maintenance of HR WWTP	15.86	1.00	4.50	35%	2.42		0.44	7.5
Project Management, Monitoring and Evaluation and Master Plan Implementation Planning	4.69	1.40	1.00	51%	1.94		0.35	
Total base costs:	57.95	4.48	5.50	17%	29.49	4.82	6.17	7.50
Contingencies:	3.70	0.02	0.00	1%	3.11		0.56	
Total Project Costs:	61.65							

Project Components	Costs	World Bank financing HRWMP-1 ¹	Expected World Bank financing HRWMP-1 AF	% WB financing	AFD/ EC	USAID	PA ²	Hebron Municipality
Total Financing by source:		4.50	5.50	7%	32.60	4.82	6.73	7.50

1) includes US\$600,000 project preparation advance; 2) In-kind contribution through tax exemption of AFD/EC and USAID financing.

C. Series of Project Objectives and Phases

21. The HRWMP-1 is the first phase of the Hebron Regional Wastewater Management Project (HRWMP). The HRWMP is a Series of Projects with the overarching objective to improve wastewater management and reuse for the benefit of water users and the environment in the Hebron Governorate. The HRWMP is in line with the “Stormwater, Domestic Wastewater and Industrial Wastewater Master Plan for Hebron” (2001), which identified incremental investments in excess of US\$ 100 million to comprehensively address wastewater management issues in the Hebron Governorate. In line with this Master Plan and the new water law, the HRWMP envisages the following phases: (i) the currently proposed HRWMP-1 and the expected AF to the HRWMP-1, financing design, construction, operation and maintenance of the HR WWTP with capacity to treat the projected flows from the sewerage areas of Hebron Municipality, as well as technical assistance to Hebron Municipality for management of wastewater services, WWTP operation and maintenance and to the PWA for further Master Planning implementation; (ii) HRWMP-2, in FY2017/2018, financing an agricultural project for the construction of an irrigation scheme for reuse of the treated effluent adjacent to the HR WWTP, including capacity building for farmers and relevant institutional stakeholders; (iii) HRWMP-3, around FY2019/2020, financing the construction of sewerage networks and associated treatment and reuse capacity for the remaining 20 percent of Hebron Municipality which is unsewered; and (iv) HRWMP-4, around FY2020/2021, financing sewerage, treatment and reuse capacity for communities alongside Wadi As-Samen, such as Yatta and Al-Dahriyyeh. Since the institutional capacity for wastewater management among municipalities in the Governorate is low, technical assistance for management of sewerage, wastewater treatment and reuse infrastructure is a core component of each of these phases, first starting with Hebron Municipality, and within the framework of the sector reform process, expanding towards establishing a regional utility responsible for the regional wastewater management infrastructure. Beneficiaries of the HRWMP include the citizens in the Hebron Governorate, having a sustainable solution for their wastewater disposal and treatment, as well as farmers with lands in and adjacent to Wadi As-Samen, who will benefit from increased agricultural production as a result of irrigation with treated effluent.

22. No funding is being committed for phase 2-4 of the HRWMP, and each of these proposed projects will require further consultations and commitments from potential financiers and the PA. AFD, EC, World Bank and USAID are committing financing of US\$ 41.9 million to implement HRWMP-1. Each phase will be prepared as a stand-alone project or as an additional financing according to World Bank procedures and the procedures of co-financiers. Additional Financing to the HRWMP-1 for O&M of the HR WWTP will be appraised once the HRWMP-1 is effective and the contract value for the design, supply, installation and operation of the HR WWTP can be estimated more accurately. Approval of the AF is a condition for AFD to provide

their no-objection to any contracts co-financed by the AF, including the contract for plant design, supply, install and operation and maintenance, and therefore should not be later than FY2016. A HRWMP-Phase 2 for the agricultural program for effluent reuse in irrigated agriculture will be prepared once the date for commissioning of the HR WWTP is well defined and construction of the plant is proceeding satisfactorily.

D. Lessons Learned and Reflected in the Project Design

23. There are only a few wastewater treatment plants currently constructed or operating in the West Bank and Gaza and only one small (<1 ha) operating wastewater reuse system. Therefore, lessons learned from the design, construction and operation of these facilities is limited. Nevertheless, some local lessons have been learned and are reflected in the current design. In the case of the Al-Bireh WWTP, the facility was originally designed to function with minimal staff in attendance with the plant generally unattended at nights, and it is functioning satisfactorily. Therefore, the proposed plant will be similarly designed to be manned with minimal staff during night time periods.

24. Several wastewater treatment processes have been successfully adopted in the region, albeit at different costs for capital expenditures (CAPEX) and operational expenditures (OPEX), which demonstrates the importance of basing technology selection on total design life-cycle costs. In order to allow for selection of the most optimal design and competitive costing, two reference process designs, conventional activated sludge (CAS) and sequential batch reactor (SBR), have been evaluated as part of the updated feasibility study conducted in 2013. Design parameters and cost estimates for the two processes have been reviewed in light of actual observed values from similar plants in the region.

25. The North Gaza Emergency Sewage Treatment (NGEST) Project is constructing a WWTP plant that will include wastewater reuse. Under NGEST there was one bid contract for Supply and Installation of Plant and equipment, with a second separate contract for O&M Technical Assistance (consultancy Services) planned for the near future, followed by 2-3 contracts for planning and construction of the effluent recovery and reuse scheme. This contracting procedure contributed to delays in implementation and increased costs because the Supply and Installation contractor identified some design discrepancies which he insisted to be rectified to take the responsibility of some facilities during the construction contract. The HRWMP-1 will use a Design, Supply, Install and Operate contract to streamline responsibility for design, construction and O&M.

26. At the Nablus East WWTP, currently under Defect Liability Period following commissioning, using a Design-Build-Operate approach, insufficiently detailed bidding documentation has led to conflicts between the contractor and the supervising engineers. Under the HRWMP-1, bid documents are developed in detail to clearly indicate the Employer's requirements for the project including the minimum technical requirements for the components of the HR WWTP and detailed performance and functional specifications, also for the O&M phase. Contractors will be required to submit to quality assurance tests for compliance with the required applicable standards.

27. Another major lesson learned from other water/wastewater projects in the West Bank and Gaza is that there are inadequate numbers of properly trained personnel or institutional arrangements to immediately assume responsibility for management, operation and maintenance of the completed systems. Therefore, O&M is included in the Design, Supply, Install and

Operate contract for a period of five years, during which Hebron Municipality can gradually build its capacity and take-over responsibility.

28. In addition, few municipalities have established tariff structures that are adequate to ensure the financial sustainability of utility services. In response, a financial sustainability action plan was prepared that is expected to result in financially sustainable wastewater services within five years after commissioning of the HR WWTP. The HRWMP-1 includes financing for technical assistance to strengthen the municipal water and wastewater utility and its capacity to provide water and wastewater management services and operate the WWTP, and proposed AF to the HRWMP-1 will cover O&M costs on a declining basis over a five year period during which the financial sustainability action plan will be implemented.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

29. The PWA is the implementing agency for the project. The PWA has a national Project Management Unit (PMU) which is currently managing a number of similar projects in North Gaza and Tayaseer, and has demonstrated that it has the necessary skills and personnel to implement the HRWMP-1. In addition, through the Bank-financed Water Sector Capacity-Building Project (WSCBP), PWA has financial management and procurement specialists who will be available to support the HRWMP-1 at least until the WSCBP closing date (December 2015), after which the HRWMP-1 will finance the required input of these specialists until the closing date of the HWRMP-1 (December 2022). Costs for these staff after December 2015 have been incorporated into the project budget. Furthermore, the project will finance a project manager, who will be supported by a Project Management Consultant (PMC), taking responsibility for supervision of the contract for the HR WWTP. Hebron Municipality and the PWA have signed an MOU which sets out detailed roles and responsibilities of each party during the duration of project implementation and site leasing and ownership arrangements for the HR WWTP. The MOU also specifies the commitment of Hebron Municipality to operate and maintain the HR WWTP and to make the effluent available for irrigation, for which discharges of industrial wastewater to the sewer system are to be eliminated. In line with the PA's long-term strategy for the development of the water sector, ownership of the HR WWTP eventually would transfer to a regional utility serving the Hebron Governorate, once such a utility is being established.

30. The contract for the HR WWTP will be a design, supply, install and operate contract, with operation for five years until project closing. The winning firm or consortium (Contractor/Operator "C/O") will also be contracted to provide technical assistance to Hebron Municipality for managing, operating and maintaining the WWTP and training local staff to take over full management of the plant within a five year time frame. During project construction, the PWA will hire an engineering consulting firm to serve as PMC, to monitor and supervise project implementation and assist Hebron Municipality to establish a Technical Operations Unit (TOU). Incremental operating expenses for this TOU and technical assistance are financed under the HRWMP-1, in order to develop the TOU to obtain the capacity to assume full responsibility for O&M of the WWTP and domestic and industrial wastewater management in Hebron. Hebron Municipality will employ a core team of engineers and other personnel to be determined in consultation with the PMC to serve as core staff to the TOU.

31. Hebron Municipality is responsible for providing municipal services to its inhabitants, and therefore will have primary responsibility for implementing Component 2 of the project, except for financial management and procurement which will be done by the PWA. The Municipality will carry out tariff reforms as agreed in the action plan for achieving financial sustainability for wastewater services, and strengthen its departments to manage the WWTP and related services, inter alia by establishing the TOU and providing appropriately qualified staff. In subsequent phases of the HWRMP, the capacity building is likely to focus on strengthening the capacity of the regional utility to be established as envisaged and guided by the sector reform process.

B. Results Monitoring and Evaluation

32. Results monitoring will be done by the experienced monitoring and evaluation (M&E) section of the PMU, with assistance of the PMC, which will report on project implementation and achievement of key results indicators and targets. Periodic reports will be prepared and submitted to donors indicating project status versus the defined implementation schedule, which will incorporate the Contractor's work program. Monitoring of the achievement of the Project's Development Objective will be carried out as detailed in Annex 1 (Results Framework).

C. Sustainability

33. Sustainability of the HRWMP-1 is enhanced by the capacity building of the TOU with adequate staff for O&M of the WWTP, implementation of the action plan for financial sustainability of wastewater services in Hebron Municipality, as well as through partial financing of the O&M of the WWTP on a declining scale during five years, which will be provided under the proposed AF to the HRWMP-1. Since sustainability of WWTP O&M and wastewater services is the key element to success of the HRWMP, the project progress and interventions will regularly assess as part of the M&E and through regular implementation support missions by the donors. The sustainability of outputs and results of the HWMP-1 will rest primarily on the following factors: (i) a technical design for the WWTP that accommodates the institutional and human resource capacities of the municipal operator, and taking into account the full lifecycle of the plant, thus minimizing O&M costs; (ii) AF for partial financing of the O&M; (iii) the establishment of a viable municipal wastewater management service within the eight year time frame; (iv) commitment for financial and technical support from the PA and PWA to ensure O&M fees get paid and carried out properly; and (v) effective management of industrial wastes through on-site pre-treatment.

34. Hebron Municipality is committed to hiring adequate staff for the TOU and has further agreed to implement a new water and wastewater tariff structure designed to generate over time sufficient revenues to efficiently operate and maintain the WWTP. The Municipality has produced a preliminary financial sustainability roadmap that will be further developed with technical assistance from the project in the first years of implementation. The technical assistance will include a study on the costs of wastewater conveyance, treatment and reuse from various sources in order to support discussions on full cost recovery. After commissioning, the PWA and its PMC will continue to provide oversight and technical support for system operations to ensure project sustainability.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating
Stakeholder Risk	Moderate
Implementing Agency Risk	
- Capacity	High
- Governance	Substantial
Project Risk	
- Design	Substantial
- Social and Environmental	High
- Program and Donor	Substantial
- Delivery Monitoring and Sustainability	Substantial
Overall Implementation Risk	Substantial

B. Overall Risk Rating Explanation

35. The HRWMP-1 will be implemented in a milieu of high political and security risk, a weak economy, and a low willingness to pay or enforce charges for public services. In addition, Hebron Municipality currently has no dedicated institutional structure or technical expertise in place to manage and operate a modern wastewater treatment plant. Accordingly, the risks to financial and institutional sustainability of the infrastructure to be constructed through the project are substantial. The project will mitigate these risks through component 2, which is aimed at developing the capacities needed to ensure the sustainability of the HRWMP-1. A high level of commitment from the municipality to the project objectives, relatively strong municipal governance, the ongoing water sector reform process, and strong impetus from both the PWA and the JWC are mitigating factors.

36. The project is marginally viable in purely economic terms, especially without effluent reuse being introduced, but it possesses very high levels of political and environmental viability due to downstream impacts of untreated waste water on Palestinian communities and their water supplies. This risk will be mitigated under the future HRWMP-2, which will finance an agricultural project for effluent reuse in irrigated agriculture. Once construction of the HR WWTP has started, the PWA, World Bank and development partners will start the identification of funds for both the HRMWP-2 as well as an AF to HRWMP-1 covering O&M costs.

37. In addition, there are risks associated with potential construction delays and cost overruns of the WWTP. Anticipated construction periods and cost estimates are based on the construction of WWTPs in the region and current prices for materials and equipment, but experience with similar projects in the West Bank and Gaza has shown that the volatile political and security environment might cause bid prices and actual construction progress to substantially differ from the original appraisal estimates. This risk is being mitigated by: (i) employing a PMC to manage the HR WWTP contract; and (ii) co-financing of contract from both AFD/EC and World Bank funds, enabling both donors to reallocate financial resources to or from the contract as required.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

38. An economic and financial assessment of the project can be found in Annex 6. Calculating the costs and benefits of wastewater treatment is difficult due to the large positive externalities that such projects generate and the inherent difficulties to monetize many of these externalities. In addition, the economy of the West Bank is heavily distorted, which requires any analysis to calculate shadow prices for many of the different project inputs to get a proper understanding of the true cost in the Palestinian context. These factors notwithstanding, the project is not viable from a purely financial perspective. Net financial losses amount to US\$ 19 million and the internal rate of return is negative. However, taking into consideration the range of economic benefits that could be monetized the project is economically viable. It generates a positive economic internal rate of return of 12 percent. In addition, significant positive externalities can be expected, such as public health benefits and protection of surface and groundwater resources. The anticipated development of an effluent reuse scheme for irrigation in the subsequent HRWMP-2 should provide additional benefits from the proposed investment.

B. Technical

39. The proposed project will provide an environmentally sustainable solution to an acute problem – secondary treatment and disposal of the wastewater of Hebron Municipality. Secondary treatment has lower treatment costs, and will allow for restricted irrigation of agricultural lands adjacent to and downstream from the WWTP. Under the HRWMP-1, effluent quality will be enhanced and the pollutant load flowing down the Wadi As-Samen will be significantly reduced. However, comprehensive and sound reuse practices in line with the reuse standards will be introduced under the planned HRWMP-2, which will finance a comprehensive agricultural development project for effluent reuse in irrigation.

40. Under the 2013 update to the 2004 feasibility studies, it was determined that the WWTP is technically feasible, and two reference designs (one for CAS, one for SBR) have been developed and will be part of the background documentation provided during the bidding process. Sludge produced by the wastewater treatment processes will be stabilized and digested to prevent sanitary and environmental nuisances (e.g. fly attraction, odors etc.) so that the final product can be landfilled and possibly applied as soil conditioner for agricultural purposes. Possible odors emissions and noise propagation will be alleviated by incorporating odor treatment components and proper acoustic design so that adjunct residential areas will not be negatively affected.

41. These designs take into account the site conditions, wastewater quantity and quality measurements, water consumption projections and the experience with existing treatment processes in the region. The wastewater flows as measured in 2011 was 10,000 CM per day, and the design capacity of 15,000 CM per day of the HR WWTP would accommodate additional flows in line with the 10-12 year projections¹⁰. As water supplies to Hebron city might increase in excess of projections, further capacity increases might be considered, depending on the available project budget. Cost estimates for the HR WWTP are based on similar plants, adjusted

¹⁰ The design of the WWTP is based on the projected loading of the population of Hebron city not taking into account unauthorized connections to the sewage system which could add an estimated load of less than 4% of the total load.

for inflation and prices for materials, energy, equipment and labor on the Palestinian market and taking into account physical and price contingencies of 15%.

42. The project's substantial investment in financial and institutional capacity building is necessary given the limited experience within the Palestinian territories generally and in Hebron specifically with the management and O&M of wastewater treatment systems. HRWMP-1 will provide the foundation for future investments anticipated through the AF to the HRWMP-1 covering mainly the O&M, and the HRWMP-2 for effluent reuse, including expanded sewer network coverage and effluent reuse for agricultural production, within the overall context of the West Bank Water Resource Program and the Hebron Wastewater Master Plan.

C. Financial Management

43. A Financial Management (FM) capacity assessment for PWA was carried out in 2010, as part of the appraisal of the ongoing WSCBP, and was updated for this project. Taking into account the risk mitigation measures, the overall financial management risk for this grant is assessed as "Substantial". The implementation of the financial management arrangements and the related risk mitigation measures proposed in Annex 3 satisfy the World Bank Operational Policy 10.00 requirements.

44. The same FM and Disbursement arrangements for the ongoing WSCBP will apply to this project. PWA will act as the Bank's counterpart for all FM aspects of the Project. PWA will be responsible for the project's FM and disbursement functions, relying on the same team of FM and disbursement specialists who are supporting the WSCBP. PWA is adequately staffed and has built a proven record of successfully implementing World Bank and other donors' supported Projects such as the WSCBP and the Water Supply and Sanitation Improvements for West Bethlehem Villages Project.

45. Project financial statements will be annually audited by a qualified independent auditor acceptable to the Bank, in accordance with internationally accepted auditing standards, and Terms of Reference (TORs) acceptable to the Bank. Additionally, an external auditor, using relevant technical specialists as needed, will conduct an annual technical audit. The Project Preparation Advance (PPA) amount of US\$ 600,000 was audited by a qualified auditor acceptable to the Bank. The audited financial statements were submitted to the Bank and given an unqualified clean opinion.

D. Procurement

46. Procurement of works and consultants' services under the project will be carried out in accordance with the 'Guidelines: Procurement of Goods, Works and Non consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' published by the Bank in January 2011, revised July 2014 and the 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' published by the Bank in January 2011, revised July 2014, the Grant Agreement and the Procurement Plan approved by the Bank and the donors. The 'Guidelines On Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants' published in October 2006 and revised in January 2011 shall also apply to the project. In line with a 2014 Framework Co-financing Agreement between AFD and the World Bank, donors agreed that the Bank Procurement Guidelines will apply to procurement for the project, whilst recognizing AFD's financing eligibility requirements. Overall responsibility for the

implementation of project procurement will rest with the PWA. The PWA would act as the main counterpart to the Bank for all procurement aspects of the project and would ensure that project procurement is carried out in accordance with the Grant Agreement and the Procurement Plan. PWA procurement and contract management capacity for implementing such complex contracts has improved through implementation of the NGEST contracts. The PWA receives support from a procurement consultant with expertise in “Plant Design, Supply & Install and Operation & Maintenance” contracts and detailed knowledge of the Bank’s procurement guidelines to provide support and guidance to the PWA procurement staff for managing the bidding process up to contract award.

47. The PWA national-level PMU will be responsible for project implementation. The procurement staff recruited in this PMU and paid for with WSCP funds will support the technical aspects of the procurement process. In addition, a qualified Project Manager is contracted to oversee contract administration and management including: supervision of the civil works with the assistance of the PMC, review and approval of consultants’ deliverables and for endorsing the release of funds to the contractors/consultants in accordance with the signed contracts.

48. The main contracts in the project are construction of the wastewater treatment plant, which will be procured following a two-stage bidding for a Plant Design, Supply & Install and Operation & Maintenance contract for the WWTP. The World Bank’s standard bidding documents for “Design, Supply and Install” will be used and the updated feasibility studies and references designs will be provided as a part of the documentation package attached to the bidding documents.

49. Other envisaged procurement activities include a PMC to assist PWA with construction management and supervision of construction, technical support to Hebron Municipality for tariff reviews and collections, consultant services to design a second phase of the project, external audits and other individual consultant(s) contracts. For each contract to be financed under the project, the different procurement and consultant selection methods, estimated costs, prior review requirements, and time frame are agreed between PWA and the Bank project team in the Procurement Plan (PP). A procurement plan for the first 18 months of project implementation, dated September 26, 2014 was prepared and agreed with the Bank and AFD during pre-appraisal and is summarized in Annex 3. The PP will be updated at least annually or as required to reflect the actual program implementation needs and improvements in institutional capacity.

50. The overall procurement risk rating for the project is High. The Bank’s prior review requirements were set in accordance with the existing procurement capacity. The Bank will maintain a close follow up and quality control of procurement/contract management matters during project supervision to ensure the efficiency of procurement decisions.

E. Social (including Safeguards)

51. The Bank’s Operational Policy OP 4.12 (Involuntary Resettlement) is not triggered in this project. There is no acquisition of private property, nor are there any adverse livelihoods impacts on communities under this project. The Bank has received confirmation from the PWA and Hebron Municipality that no lands under private owners or communities are impacted. The land needs for the wastewater treatment plant is met through lands owned by the PWA. It was also confirmed by the Hebron Municipality that both the trunk line and access road are in the public domain in Hebron municipality. More specifically, the USAID financed access road

located in the wadi has 9 landowners, with whom land transaction has been voluntarily carried out and is based on fully and informed consent. Documentation on how the project is meeting land needs has been provided to the Bank and is also confirmed in the analysis presented in the Bank approved environment and social assessment report (disclosed in July 2013 and updated and re-disclosed October 1, 2014).

52. The project, especially through the Environment, Social and Cultural Heritage Impact Assessment (ESCHIA) carried out project stakeholder consultations in a number of settings using an array of methods to ensure the broadest possible outreach to all key constituents. Stakeholders' opinions were sought and recorded on a range of topics including expected project outcomes, the implementation timing and method, and willingness to pay for wastewater management services. Project stakeholders consulted with included respective village council members, key figures of local authority, household members affected under the project, women, farmers, craftsmen and managers of various economic businesses and stone cutting industries. In total thirty-six individuals were interviewed. In addition, government officials were consulted with to discuss project design and to elicit feedback on design elements as well as the socio-economic and environmental aspects of the project. Consultations were held with the Ministry of Local Government (MoLG), Ministry of Tourism and Antiquities (MoTA), Palestinian Water Authority (PWA), Ministry of Labour (MoL), Ministry of Planning (MoP), Ministry of Agriculture (MoA), Ministry of Public Works and Housing (MoPWH), Environmental Quality Authority (EQA), and Hebron Municipality. The methods used to carry out consultations included focus group discussions; key informant interviews; large town hall type meetings; among others. Several meetings were sex disaggregated to ensure adequate voice and representation of women. Details on the nature of these consultations as well as the outcomes are detailed in the Bank approved and disclosed ESCHIA document. The ESCHIA and related Environment, Social and Cultural Heritage Management Plan (ESCHMP) was translated and disclosed on July 25, 2013 at the Infoshop and has been made locally available in an accessible manner since July 12, 2013 on the PWA web site and in hard copy at the PWA office in Ramallah. An updated ESCHIA/ESCHMP has similarly been reviewed, cleared and disclosed October 1, 2014. For the associated works financed by USAID (access road, trunkline extension and water and power services), a site visit of the proposed facilities, including meetings with landowners and project management staff, was conducted in July 2014. The Bank team understands there are no impacts of these associated works as defined under OP 4.12.

53. The project will enhance civic participation and has been prepared and will be implemented in line with the FY2015-2017 Country Gender Action Plan for West Bank and Gaza. Consultations conducted during the project preparation included several meetings, which were sex disaggregated to ensure adequate voice and representation of women. As part of the technical assistance for the water and wastewater tariff structure and under the preparation studies for further implementation of the Master Plan, consultations with civil society will be held, and a gender assessment and/or gender disaggregated study on water usage for both household and agriculture use and on the participation of women in water user groups will be conducted. Based on this assessment, gender entry points will be identified. The results framework includes gender disaggregated outcome indicators.

F. Environment (including Safeguards)

54. The project has been classified under the environmental category "A" in accordance with the World Bank's Operational Policy OP 4.01. This class of project is normally expected to have

a significant effect on the environment. The client has prepared the ESCHIA and ESCHMP for the HR WWTP and trunk sewer as required by the PWA, AFD, and the World Bank.

55. The client has also held consultations with relevant stakeholders as noted in the social safeguards section above, a summary of which is included in the ESCHIA. The ESCHIA/ESCHMP was available prior to the project appraisal. The executive summary of the ESIA was released through the World Bank's Infoshop and locally in Arabic and English in July, 2013, and similarly, an updated ESCHIA/ESCHMP was disclosed October 1, 2014. The ESCHIA includes an overview of the key environmental, social, and cultural heritage impacts associated with the construction and operation of the HWWTP and trunk sewer. It provides mitigation measures to be considered in the design and proposes an environmental management and monitoring plan. The Bank's safeguards requirements and procedures will apply in all project-financed activities regardless of the source of financing. See Annexes 3 for more details, including details as to how the ESCHIA/ ESCHMP has been updated.

Annex 1: Results Framework and Monitoring

Country: West Bank and Gaza

Project Name: Hebron Regional Wastewater Management Project - Phase 1 (P117449)

Results Framework

Project Development Objectives

PDO Statement

The objective is to reduce the environmental pollution from wastewater produced in the Hebron Municipality.

These results are at | Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values										
		YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	End Target	
Volume(mass) of BOD pollution load removed by treatment plant under the project (Tones/year) - (Core)	0.00	0.00	0.00	0.00	3000.00	3000.00	3000.00	3000.00	3000.00	3000.00	3000.00	3000.00
Treated wastewater meeting effluent standard (Days)	0.00	0.00	0.00	0.00	300.00	340.00	340.00	340.00	340.00	340.00	340.00	340.00

Direct project beneficiaries (Number) - (Core)	0.00	0.00	0.00	0.00	104,000	104,000	104,000	104,000	104,000	104,000	104,000
Female beneficiaries (Percentage - Sub-Type: Supplemental) - (Core)	0.00	0.00	0.00	0.00	51.00	51.00	51.00	51.00	51.00	51.00	51.00

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values									
		YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	End Target
Contract for design, supply, installation and operation of the HR WWTP signed. (Yes/No)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Waste water utility established and staffed with appropriately trained staff (Yes/No)	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Waste water treatment plant commissioned (Yes/No)	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Waste water tariff introduced (Yes/No)	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tariff collected vs. total management, operation, and maintenance costs of WWTP and related services (Percentage)	0.00	0.00	0.00	0.00	10.00	20.00	40.00	60.00	70.00	80.00	80.00
Tariff collection rate (Percentage)	50.00	50.00	50.00	50.00	55.00	60.00	65.00	70.00	75.00	75.00	75.00
Institutional arrangements in place for WWTP O&M beyond project end (Yes/No)	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Volume(mass) of BOD pollution load removed by treatment plant under the project	<p>This indicator measures the cumulative volume (mass) of Biological Oxygen Demand (BOD) pollution loads removed by the treatment plant supported under the project. Project support can include construction, expansion or rehabilitation of the treatment plant.</p> <p>The baseline value will be zero in where wastewater treatment has not yet been available. In the case where wastewater treatment has been available but is to be improved under the project, either with higher levels of treatment or rehabilitation of the existing treatment capacity, the baseline value will not be zero.</p>	Annual	PWA	PWA and Hebron Municipality
Treated wastewater meeting effluent standard	Treated waste water meets or exceeds effluent quality standards established by the Palestinian Authority.	Monthly	PWA	PWA and Hebron Municipality
Direct project beneficiaries	<p>Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water connection).</p> <p>Please note that this indicator requires supplemental information. Supplemental</p>	Annual	Hebron Municipality	Hebron Municipality

	Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.			
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Annual	Hebron Municipality	Hebron Municipality

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Contract for design, supply, installation and operation of the HR WWTP signed.	No description provided.	Once	Palestinian Water Authority	Palestinian Water Authority
Waste water utility established and staffed with appropriately trained staff	No description provided.	Mid-term review, End of project	Hebron Municipality	Hebron Municipality
Waste water treatment plant commissioned	No description provided.	Mid-term review	Palestinian Water Authority	Palestinian Water Authority
Waste water tariff introduced	No description provided.	Mid-term Review	Hebron Municipality	Hebron Municipality
Tariff collected vs. total management, operation, and maintenance costs of WWTP and related services	No description provided.	annually	Hebron Municipality	Hebron Municipality
Tariff collection rate	No description provided.	Annually	Hebron Municipality	Hebron Municipality

Institutional arrangements in place for WWTP O&M beyond project end	No description provided.	Mid-term review, End of project	Hebron Municipality	Palestinian Water Authority, Hebron Municipality
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Annex 2: Detailed Project Description

WEST BANK & GAZA: Hebron Regional Wastewater Management Project – Phase 1

1. The proposed HRWMP-1 implement the first phase of the HRWMP, which has the overarching objective to improve wastewater management for the Hebron Governorate, as envisaged in the West Bank Water Resources Program. The development objective of the HRWMP-1 is to reduce the environmental pollution from wastewater produced in Hebron Municipality and as such contributes to the overarching long term program objective.
2. The project builds on an extensive set of studies conducted under the USAID-funded West Bank Integrated Water Resources Program (2002-2006). Within the framework of this program, a comprehensive regional sewerage and wastewater treatment master plan, the Hebron Wastewater Master Plan, was developed outlining the phases and projects needed for a comprehensive solution of wastewater management in the whole of the Hebron Governorate. For the first phase of implementation of this plan, it was decided by the PWA and agreed by the JWC to construct a regional WWTP that would provide secondary treatment for around 15,000 CM of wastewater per day at a suitable site just south of Hebron city. For this site a detailed feasibility study was done in 2004 for both the regional WWTP as well as for the reuse of reclaimed effluents and biosolids. In addition, a full environmental assessment was conducted. Based on this documentation, the project was submitted to the JWC, who approved the project, and subsequently the Israeli Civil Administration (ICA) of the West Bank issued the required permits. In 2005, USAID issued a Request for Proposals for a design-build contract to construct the plant, but eventually no contract for construction was awarded. The feasibility studies were updated for the current project proposal in 2013-2014 by the PWA with financing of AFD and the World Bank.
3. The HRWMP-1 has three components: (i) Wastewater Treatment Infrastructure, which would finance the detailed design and construction of a regional wastewater treatment plant south of Hebron, including extension of the sewer trunk line; (ii) Sustainable Management, Operation, and Maintenance of Wastewater Services, which would finance services for O&M of the WWTP and building the capacity of local institutions for long term sustainable management, and with Additional Financing in FY2016 to finance on a declining basis the O&M costs of the WWTP, including staff costs, equipment and supplies; and (iii) Project Management, Monitoring and Evaluation, and Master Plan Implementation Planning, which would finance project management and implementation activities, monitoring and evaluation, and also provide resources for studies and preparatory activities for subsequent investments in wastewater management for the Hebron Governorate within the overall context of the Master Plan.¹¹
4. The project has an estimated cost of US\$ 61.65 million including 6% contingencies and would be financed by a consortium of multilateral and bilateral partners along with Hebron Municipality and the PA. The financing plan is summarized in Table 2.1. Additional Financing of around US\$ 5.5 million will be required to fully finance the anticipated costs of the HRWMP-1. Financing by MOF is in kind, through tax exemptions.

¹¹ A proposed second phase project would encompass the development of an effluent and biosolids reuse program for agricultural production, expansion of the sewer network to increase service coverage, investments in industrial wastewater management (if required), and an associated increase in the treatment capacity of the WWTP.

Table 2.1 Project Financing Plan per component

Financing plan	US\$							
	AFD / EC	WB	WB AF	%	USAID	MOF	Hebron MU	Grand Total
1 - Infrastructure	25,125,000	2,075,325	-	6%	4,815,000	5,389,200	-	37,404,525
1A - WWTP	25,125,000				-	4,522,500	-	29,647,500
1B - Works supervision (7%)		2,075,325			315,000	56,700	-	2,447,025
1C - Trunk line and access facilities	-	-			4,500,000	810,000	-	5,310,000
2 - O&M + Capacity building	2,423,729	1,000,000	4,500,000	35%	-	436,271	7,500,000	15,860,000
2A - O&M	423,729	1,000,000	4,500,000		-	76,271	7,500,000	13,500,000
2B - TA for municipality	2,000,000				-	360,000	-	2,360,000
3 - Project Management, Monitoring, and Program Implementation Planning	1,940,000	1,400,000	1,000,000	51%	-	349,200	-	4,689,200
3A - PMU / TOU		800,000	1,000,000		-	-	-	1,800,000
3B - Preparation grant		600,000				-	-	600,000
3C - Additional studies	1,940,000				-	349,200	-	2,289,200
Subtotal	29,488,729	4,475,325	5,500,000	17%	4,815,000	6,174,671	7,500,000	57,953,725
Contingencies	3,111,271	24,675	-			560,029	-	3,695,975
TOTAL	32,600,000	4,500,000	5,500,000	16%	4,815,000	6,734,700	7,500,000	61,649,700

Component 1 – Wastewater Treatment Infrastructure (US\$ 39.9 million including contingencies, of which US\$ 2.1 million Special Financing)

5. This component will finance the construction of a wastewater treatment plant including consultant services for construction supervision, and auxiliary works including a 1 kilometer extension of the trunk sewer line to connect the existing network to the plant, realignment and upgrading of around 800 meters of the access road to the site, and connection of public utility services (water, electricity) to the plant. The main sewer connection, access road, and the connection of utilities will be contributed by USAID through a parallel, directly financed contract. The WWTP will be constructed on 11 ha of land that is owned by the PWA, located around 4 km south from the southern perimeter of residential and industrial areas of Hebron City. The site is located in a wadi, surrounded by relatively steep slopes up to 60 meters high. There is a rocky outcrop approximately 40 meters high at the site.

6. Under the HRWMP-1 the WWTP will be designed to provide secondary treatment for 15,000 cubic meters per day, which is the projected wastewater flow for 2025 of the population that is currently connected to the sewer network, including pre-treated industrial wastewater. This projection is based on the current population growth rate in Hebron and estimated modest growth in water consumption. Water consumption is currently low, at around 85 l/ca/day due to restricted supplies and there is a high demand for additional water supply capacity, especially during the summer months. Significant increases in water supply and consumption, as well as connecting additional communities to the sewer network, would cause the design capacity to be reached before 2025, requiring the construction and commissioning of additional capacity. Depending on the cost of the WWTP and the available budget, WWTP capacity might be expanded. Because of the low water consumption, the wastewater has a higher pollution load than global or regional norms for urban areas with population densities and economic activities similar to Hebron's.

7. The wastewater is to be treated to the Palestinian standards for wastewater reuse in irrigated agriculture, which are based on the Jordanian standards for cooked vegetables: (i) Biological Oxygen Demand (BOD₅) not more than 20 mg/l; (ii) Total Suspended Solids (TSS) not more than 30 mg/l; (iii) Total Nitrogen (TN) not more than 30 mg/l; and (iv) Faecal E-coli

bacteria not more than 200 MPN (Most Probable Number) per 100 ml. There is no Palestinian standard for Total Phosphorus (TP), but based on the scientific evidence highlighting the long-term negative impact on soil and crop quality of TP accumulation in the soil, the TP concentration of the effluent will need to be reduced to 10 mg/l during the first years of reuse in irrigated agriculture, with the option to further reduce it to 5 mg/l after long-term use on agricultural lands.

8. Other important design considerations are the following: (i) the resilience of the WWTP to unauthorized and inadvertent wastewater flows from the industrial area; (ii) capacity to deal with peak wastewater flows and storm water intrusion; (iii) resilience to temporary floodwater levels in the wadi, without noteworthy damage to the WWTP, except for temporary disruption of the treatment process; (iv) minimizing the footprint of the WWTP, in order to reduce costs associated with excavation of rocky outcrops during site preparation; (v) based on a modular approach, where additional treatment capacity can be accommodated at the site to eventually provide treatment capacity of 35,000 CM per day for the Hebron Governorate; and (vi) reducing noise and odour pollution to an acceptable minimum.

9. The eventual design and construction of the plant will be determined through a two-stage procurement process where bidders will in the first stage need to meet strict pre-qualification criteria, and propose a conceptual design that will be reviewed based on the criteria specified in the bidding documents. In the second stage selected bidders will be invited to further detail the conceptual design and provide a financial proposal. Final evaluation will be done on the quality of the detailed conceptual design and the life-cycle costs of the plant, evaluating both CAPEX and OPEX. Bidders are free to propose designs, but technical guidance is provided to the bidders by including two basic alternative technical concepts (CAS and SBR) in the background documentation to the bidding documents.

10. *Conventional Activated Sludge (CAS)*. The CAS process consists of the following elements: (i) influent wastewater pumping station including pre-screening of coarse debris; (ii) pre-treatment for removal of fine debris and grit; (iii) primary sedimentation for removal of settleable solids and floatants; (iv) biological reactors with anaerobic-anoxic-aeration zones for removing the organic loads and nutrients with a Return Activated Sludge System; (v) secondary sedimentation; (vi) filtration and disinfection by ultraviolet light (UV); (vi) sludge treatment including anaerobic digestion, dewatering, methane recovery and power generation.

11. *Sequential Batch Reactor (SBR)*. The SBR process consists of the following elements: (i) influent wastewater pumping station including pre-screening of coarse debris; (ii) pre-treatment for removal of fine debris and grit; (iii) biological batch reactors with multi-purpose basin; (vi) filtration and disinfection by ultraviolet light (UV); (vi) sludge treatment including anaerobic digestion, dewatering and methane recovery and power generation. Primary and secondary sedimentation as well as biogas recirculation are not required with the SBR process.

12. Typically, SBR systems require less land area and involve lower capital investment than CAS systems, but SBR plants tend to have somewhat higher energy costs during operation. A wide range of variables can influence both the capital and operating costs for both systems, and the two-stage selection process has been proposed as a method for determining the most economical alternative from the perspective of the estimated life cycle costs of the treatment plant.

13. Construction and commissioning of the plan is expected to take around 24 months following the construction of the access road and the connection of water and electricity supply. In order to ensure quality both of design and construction, the bidding documents will contain detailed material specifications, specifications for the quality of O&M, as well as procedures for testing compliance with these specifications. Monitoring compliance with specifications and specific and general conditions of the contract will be delegated by the PMU to an engineering consulting firm appointed as the PMC.

Component 2: Sustainable Management, Operation, and Maintenance of HR WWTP (US\$17.0 million including contingencies, of which US\$ 1.0 million Special Financing).

14. The objective of this component is to provide technical assistance to build the capacity of the Technical Operating Unit and the Hebron wastewater management department and to finance O&M expenditures on a declining scale, whilst the Hebron Municipality implements the financial sustainability action plan to achieve full financial sustainability for the services by project closing.

15. *Sub-component 2.1: Financial support for operations and maintenance* – This will finance all staffing, materials, and management costs for operating the wastewater treatment plant, excluding depreciation, on a gradually declining basis over a period five years after the WWTP is commissioned. Current financing will be sufficient for the first year of O&M, with subsequent Additional Financing processed in FY2016 providing the remaining US\$ 5.5 million required. The rate of financing by donors would progressively decline over the five year period based on the capacity of Hebron Municipality to assume fiscal responsibility for wastewater management. An indicative distribution of financial support for operations and maintenance is portrayed in Table 2.2 (rounded numbers). In this table, projected O&M costs are based on an average of estimated O&M costs for CAS and SBR systems. A detailed tariff study and technical assistance for further development of Hebron’s financial sustainability road map for wastewater management will help determine the actual distribution and rate of transfer of financing obligations the Municipality.

Table 2.2 Estimated O&M Costs (excluding depreciation and inflation)						
and indicative financial support schedule						
(US\$ million)						
	Year 1	Year 2	Year 3	Year 4	Year 5	Totals
Donor financing	100%	65%	35%	15%	7%	
	2.7	1.76	0.95	0.41	0.20	6.00
Hebron Municipal financing (including electricity)	0%	35%	65%	85%	93%	
	0	0.95	1.76	2.30	2.50	7.50
Total	2.70	2.70	2.70	2.70	2.70	13.50

16. *Sub-component 2.2: Technical Assistance for the Hebron water and wastewater department* – This sub-component will finance specialist consulting services to augment on-the-job training for water and wastewater department staff, as well as for other Hebron municipality and PWA staff as may be required to improve billing and collection systems for both water and wastewater services, program monitoring, and water and wastewater sector planning, including a tariff study, billing and collection reform analysis, and a public awareness campaign to improve willingness to pay for water and wastewater management services. This sub-component will

also explore options to enhance civic engagement in utility management and tariff reform, with special focus on gender-aspects of water and wastewater management.

Component 3 – Project Management, Monitoring and Evaluation, and Master Plan Implementation Planning (US\$ 4.75 million, including contingencies, of which US\$ 1.4 million Special Financing)

17. This component will finance incremental operating costs incurred by the PWA and for a TOU in Hebron Municipality, as well as consulting services for special studies and preparation services for a possible HRWMP-2 and 3 to expand implementation of the Hebron Region Wastewater Management Master Plan.

18. *Sub-component 3.1: Project Management* – the incremental operating costs incurred by the PWA and for a technical operations unit, including staff costs, in Hebron Municipality will be financed.

19. *Sub-component 3.2: Special studies and project preparation* – This sub-component will finance further studies to advance the implementation of the Master Plan. Studies to be financed will include but not be limited to a feasibility study and design for effluent reuse in agriculture and preparation of the documentation required for identification and appraisal of the HRWMP-2, and includes the cost for the project preparation facility for the HRWMP-1.

Annex 3: Implementation Arrangements

WEST BANK & GAZA: HEBRON WASTE WATER MANAGEMENT PROJECT

Project Institutional and Implementation Arrangements

Project administration mechanisms

1. *Implementation of Component 1 (Wastewater Treatment Infrastructure)*. The project implementing agency will be the PWA. The PWA has qualified staff and experience with managing donor financed projects of similar scope and complexity and a national-level Projects Management Unit for this purpose. Within this Unit, the PWA has appointed a qualified and experienced project manager (PM), already managing the NGEST project, to supervise project implementation and coordinate donor reporting. In addition, through the WSCBP, PWA has employed financial management and procurement specialists who will be part of PMU for the HRWMP-1 with the PM. They will be financed through the WSCBP until the WSCBP closing date in December 2015, and afterwards will be financed through the HRWMP-1.
2. The PWA and Hebron Municipality signed a Memorandum of Understanding which specifies the detailed roles and responsibilities of each party during the full duration of project implementation. The PWA PMU¹², in coordination with the Water and Wastewater Department at Hebron municipality (HM)¹³, will manage the procurement of the supervision and civil work contracts. The PWA will sign the contracts with the Project Management Consultant (PMC) and the civil works contractor for the design, supply, and install contract for civil works and the operation and maintenance contract.
3. The PWA, in cooperation with Hebron Municipality, has developed a Project Implementation Manual (PIM) that will be approved by the donor partners prior to effectiveness.¹⁴
4. HM, with the support of the PMC and the PWA, will establish the TOU within the Water and Wastewater Management Department initially comprising a Wastewater Engineer (Project Coordinator), Process Engineer, Electro-Mechanical Engineer, and a Capacity-building Specialist to assist PWA with supervision and work alongside the PMC and the contractor to gain experience and improve their skills. The TOU will be established at least one year prior to commissioning of the WWTP, with Coordinator and Capacity-Building Specialist recruited already at the start of the project.
5. The TOU staff will be contracted by HM but they will be paid on behalf of the Municipality (and with HM approval) by the PWA under Component 3 of the project. The TOU will work under the technical supervision of the PM and will report to him on project progress. The TOU will report on project progress to the Hebron Mayor and the PM.

¹² The PMU in this document refers to the Project Manager, the Financial Management and Procurement Specialists specified in Para. 1 above.

¹³ Water and Wastewater department at HM will be involved in the procurement process through representation on the evaluation committee for the proposals.

¹⁴ The PIM will include details on project implementation arrangements, forms, flowcharts, reports formats, roles and responsibilities (job descriptions) of each party involved in the project implementation through the project cycle, etc.

6. Monthly progress meetings between stakeholders (PM, HM, represented by the TOU, the PMC and the contractor)¹⁵ will be held in Hebron to review progress, take decisions and highlight any expected issues that may affect the project implementation.

7. *Implementation of Component 2 (Sustainable Management, Operation, and Maintenance of Wastewater Services)*. This component will finance services to operate and maintain the WWTP, provide technical assistance to build the capacity of the Hebron Municipal Water and Wastewater Management Department and the TOU within the Department, and train local staff with the objective to have the local institution fully capable of operating the plant within a five year time frame. PWA will delegate responsibility for implementing Component 2 to HM but retain the financial responsibility for contracts and management of project funds as well as the responsibility for procurement. This relationship will be specified in the MOU between PWA and HM and elaborated in the Project Implementation Manual.

8. HM through an international expert TA will prepare a TOR for technical assistance for a needs assessment and have it reviewed, procured and contracted by PWA. The TA assignment will assess the capacity and needs to the Water and Wastewater Department and other relevant departments and will provide a technical assistance and capacity building action plan to support the municipality departments to implement the financial sustainability road map.¹⁶

9. Based on the recommendation of the institutional assessment, HM in cooperation with the PWA will procure and contract other consultant services to help HM implement the action plan.

10. HM will employ a Capacity Building Specialist (CBS), who will be based in the TOU¹⁷ and be responsible for supervising other consultant services related to capacity building in line with HM's financial sustainability road map for water and wastewater services and the institutional assessment. The CBS will report to the W&WW department head (copying the Mayor and the PWA Project Manager on periodic progress reports).

11. HM will, based on consultants' recommendations, take all necessary actions and decisions needed to implement and promote the sustainability road map and improve the services of the Water and Wastewater department.

12. Training and capacity building programs for the Water and Wastewater Department staff and the TOU will be based on training needs assessments and action plans to be approved by the Mayor.

13. All invoices related to the TA assignments will be submitted to the CBS, who will review them and raise them to Coordinator who shall concur before sending them to PWA for payments.

14. Civil Works will be carried out through a competitively bid contract. The winning firm or consortium (Contractor/Operator "C/O") will also be contracted to provide technical assistance to Hebron Municipality for managing, operating and maintaining the WWTP and

¹⁵ Donors may attend as observers whenever they see necessary.

¹⁶ AFD has contracted a TA consultant during the project preparation. The Consultant has assessed the financial capacity of HM and provided a sustainability road map, which has been approved and committed by the municipality to implement.

¹⁷ The Capacity Building Specialist (CBS) will be paid from the project incremental operation cost through the PWA.

training local staff to take over full management of the plant within a five year time frame following commissioning of the WWTP.

15. Hebron Municipality (Water and Wastewater Department) will support supervision of the contract implementation through the TOU.

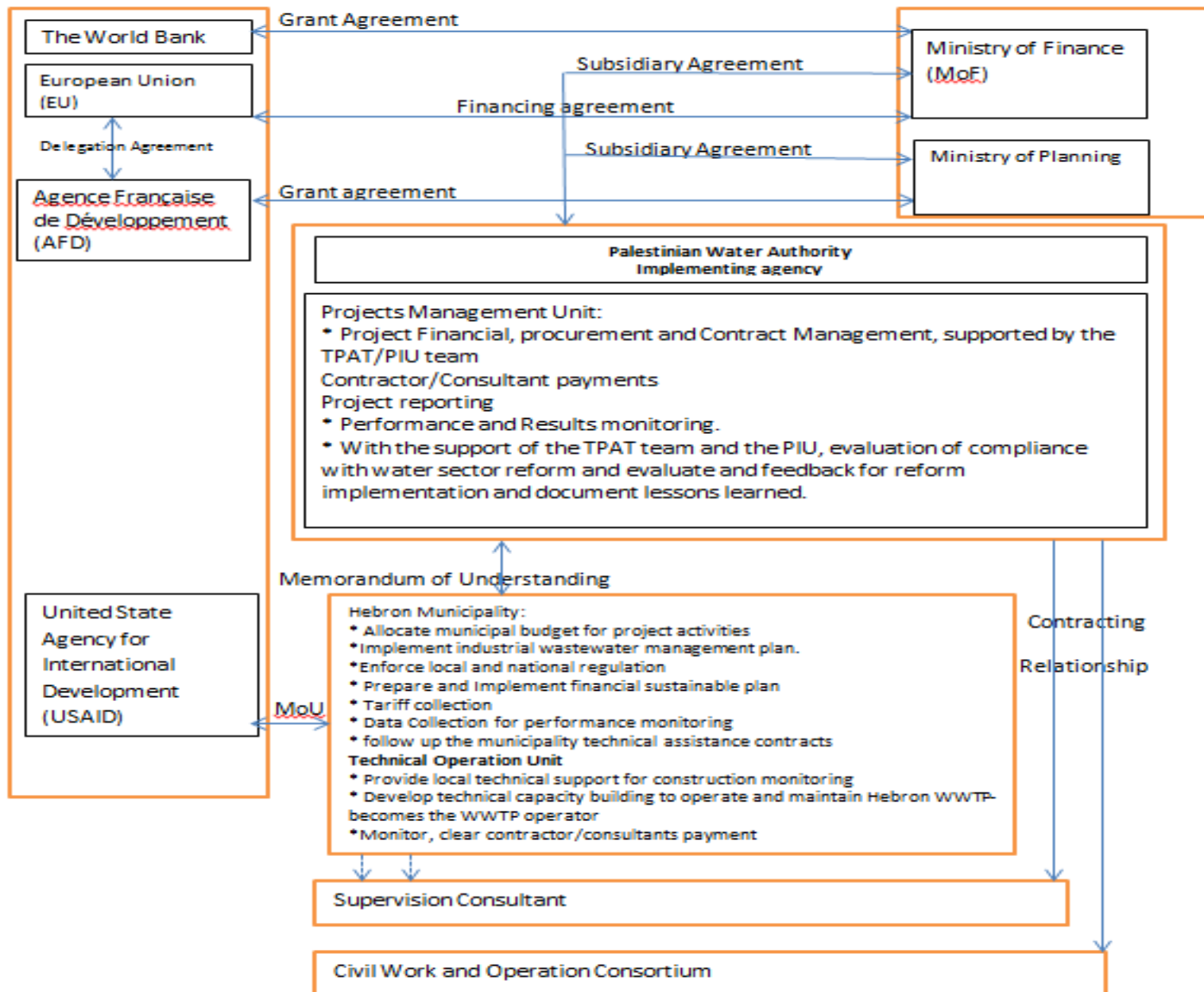
16. The C/O will work in cooperation with the TOU to prepare all needed plans, actions, measurements and reports and provide guidance to the TOU to develop its capacities and skills to ultimately operate and maintain the WWTP independently.

17. The C/O will carry out a training needs assessment and action plan for the TOU and implement it to ensure the TOU is able to operate the treatment plant or manage another outsourced management contract after their contract is closed.

18. The TOU Project Coordinator will review and certify the invoices provided by the C/O and forward for the PWA for review, and payment. The C/O will be reviewed and certified by the PMC and then to be submitted for PWA approval and payment.

19. The implementation arrangements for the project are summarized in Figure 1 below.

Figure1: Project Implementation Arrangement



Financial Management, Disbursements and Procurement

Financial Management

20. Implementation arrangements and staffing: The same Financial Management (FM) and Disbursement arrangements for the ongoing WSCBP will apply to this project. PWA will act as the Bank's counterpart for all FM aspects of the Project. PWA through the existing PMU will be responsible for the Project's Financial Management (FM) and Disbursement functions, as well as the technical aspects of the Project, with the Project Manager having overall responsibility. The PMU includes a Financial Manager with adequate educational background and professional experience. The Financial Manager is experienced with the World Bank FM and Disbursement guidelines; this experience is gained through implementing the ongoing Bank supported projects: (WSCBP, and Water Supply and Sanitation Improvements for West Bethlehem Villages Project).

21. The updated FM assessment for this Project concluded that the overall FM risk rating after mitigating measures is "Substantial", mainly due to the:

- a. Risk of inaccurate budget or the risk that the budget is not updated and monitored on a timely basis;
- b. Risk of inadequate verification of actual physical progress on the ground, or risk of physical progress that is not in line with financial progress;
- c. Risk of inaccurate recording of financial information by the PMU which may lead to errors, misstatements and/or double dipping between donors' funds.
- d. The involvement of many stakeholders/counterparts (4 donors, MOF, PWA, PMU, Hebron Municipality) and a number of associated agreements, subsidiary agreements, MOUs. This increases the implementation and coordination risks.
- e. Some activities contracts are supervised by the Hebron Municipality, while funds are controlled by the PWA. This can also cause coordination problems and implementation delays.

22. The following measures are to be taken to mitigate FM related risks:

- a. Budget will be semiannually updated, and submitted to the Bank task team. Also, comparison between actual vs. budgeted expenditure will be tracked with proper explanations and justifications will be provided for significant deviations.
- b. The PWA will establish a Technical Operations Unit in the Hebron Municipality. PWA will also hire engineering supervision consultants to oversee the quality of implementation of the Design, Supply, Install and Operate contract, and to ensure that payments' related activities are in line with physical progress and for materials actually supplied and installed.
- c. The MoF internal control procedures will be implemented and supplemented by an internal control and accounting policies and procedures manual that will define relevant roles and responsibilities.

- d. The MoF unified accounting system will be used to account for the financial transactions of the Project. Separate accounting records for each financier will be maintained.
- e. An independent external auditor, acceptable to the Bank, will be hired to perform an external audit of the project's annual financial statements, in accordance with ToRs acceptable to the Bank. In addition, the ToRs will be expanded to include a provision for annual technical audits of the project.
- f. The PIM will spell out clearly the responsibilities of each party to minimize the risk of coordination problems and to ensure clear accountability.

23. Budgeting and Funds Flow: The PWA will maintain an updated project budget and detailed disbursement plan. The budget will separately identify activities to be financed by individual financing partners, including that of the World Bank. The budget will be developed based on an initial procurement plan and revised as needed, and will be analyzed by year and by quarter. The budget will be submitted to the Bank as part of the quarterly Interim unaudited Financial Reports (IFRs). A budget taking into account the above details was submitted to the Bank and reviewed during Appraisal.

24. The total estimated donor contribution for the project is US\$47.4 million. The Bank will provide US\$4.5 million under the HRWMP-1 and is expected to provide US\$5.5 million under the AF to the HRWMP-1. AFD will provide co-financing amounting to €10.00 million. The European Union will provide additional co-financing through a delegation arrangement with AFD of €15.00 million. The United States Agency for International Development (USAID) will provide parallel co-financing in kind for construction of an access road, a main sewer connection between the existing sewer network and the WWTP, and provision of utility services for the wastewater treatment plant. The estimated cost of the USAID in-kind contribution is US\$4.8 million.

25. One Designated Account (DA) in US Dollars will be opened by the MoF at Bank of Palestine (Ramallah) and will be operated and managed by the PWA for the World Bank funds. Deposits into the DA will be made in accordance with the provisions to be stated in the Grant Agreement and to be outlined in the Disbursement Letter and the World Bank "Disbursements Guidelines for Projects". Direct payments will be used for all activities and contracts financed by AFD and the EC.

26. Accounting system & Reporting: The Project will follow the cash basis of accounting where resources and uses of funds are recorded when cash is received and when payments are made. The MoF's country accounting system (Bisan) will be used to account for, record, report and monitor the project accounts. Separate financial records will be maintained by opening a separate cost center for each financing partner. Project IFRs will not be generated automatically from the Bisan system, but will be compiled manually using Excel spreadsheets. Transaction statements from the accounting system will be retained with the IFRs to provide an audit trail to the underlying documentation.

27. PWA will be responsible for submitting the quarterly IFRs which will comprise a (i) statement of cash receipts and expenditures, by category, component, and donor, for the period, and cumulatively from project inception. (ii) Statement of Designated Account reconciling period opening and end balances; and (iii) Statement of project commitments, i.e., the unpaid

balances under the project's signed contracts (iv) Comparison of Budget vs. Actual for the period and cumulatively from project inception, with justification of significant variance (v) Fixed Asset register, and (vi) Physical progress reports which include narrative information and output indicators (agreed during project preparation) linking financial information with physical progress, and highlighting issues requiring attention. The IFRs shall be submitted to the Bank not later than 45 days after the end of the reporting quarter. The IFRs format and content have been agreed on with the PWA.

28. Internal Control: The internal control procedures will follow MoF procedures supplemented by an accounting and internal control policies and procedures manual that will be prepared for the proposed Project. MoF financial controllers based at the PWA will review and approve through the accounting system application controls all Project's financial transactions before payment processing. Internal control procedures are summarized as follows: (i) PWA-Technical team review and approval, (ii) Procurement Specialist review and approval; (iii) Finance Manager and Project Director review and approval; (iv) MoF Financial Controller review; and (v) each payment will be signed by two authorized signatories. All parties must approve payment requests before signing the check by the authorized signatories. A Project accounting and internal control policies and procedures manual was submitted to the Bank and reviewed during appraisal and will be updated by effectiveness.

29. Annual External Audit: The project financial statements will be audited annually by a qualified independent external auditor and in accordance with ToRs acceptable to the Bank. The audit will be comprehensive covering all financiers and will be conducted in accordance with International Standards on Auditing. The scope of the audit will include procedures to assess and report on the effectiveness of internal controls and compliance with the Grant Agreement, FM manual, and applicable laws and regulations. Deficiencies will be reported through a management letter. The audited financial statements and management letter will be sent to the World Bank no later than six months following the end of the project's fiscal year. PWA will be responsible for preparing the TORs for the auditor and submitting them to the Bank for clearance. The financial statements will be comprehensive and will cover all aspects of the Project including all sources of financing and not only the portion related to the World Bank. The external auditor shall be engaged no later than 7 months after project effectiveness. The Project audited financial statements will include a (i) Statement of Sources and Uses (by Component, and by Category, and showing Bank and each counterpart funds separately), (ii) Statement of DA reconciling period-beginning and ending balances; (iii) Statement of Project's commitments. (iv) Statement of Cash Flow; (v) Notes to the Financial Statements for the significant accounting policies and all other relevant information. In addition to the financial audit, the auditor will be requested to perform a technical audit on an annual basis. In this context, auditors should use relevant technical specialists as needed to perform the technical audit in accordance with the Bank-accepted ToR.

30. The project preparation advance (PPA) amount of US\$600,000 was audited by a qualified auditor acceptable to the Bank. The audited financial statements were submitted to the Bank and had a clean unqualified opinion.

31. According to the World Bank Policy on Access to Information issued on July 1, 2010, the audit report with audited financial statements of the Project will be made available to the Public.

32. Fixed Assets: The Fixed Assets Register will be maintained by the PWA and regularly updated and checked. The register will include all necessary information including fixed asset description, location, type, identification numbers, purchase date, invoice number, etc. Contracts registers will be maintained for all contracts

33. Governance and Anti-Corruption: Although it is impossible to eliminate the risk of fraud and corruption, prevention policies and internal controls can reduce opportunities for it to occur. Fraud and corruption may affect project resources, thereby negatively affecting project outcomes. An integrated understanding of possible vulnerabilities and agreed upon actions to mitigate the risks was developed by the Bank Task Team. The above-proposed fiduciary arrangements are expected to reduce the risks of fraud and corruption that are likely to have a material impact on the project outcomes.

34. The Project involves financing from four donor partners. The Bank will therefore apply a cross-ineligibility system for debarred-by-other-donor firms. This cross debarment is simply recognition of the practical reality that a jointly co-financed expenditure cannot be made unless all sources of financing are available.

35. Disbursement: World Bank funds will be disbursed through a separate segregated DA maintained in USD. The DA will be opened by the MoF at the Bank of Palestine (Ramallah) and will be managed by the PWA. The Bank will finance 100% of expenditures through the Annual Work Plan and the Budget approved by the Bank. The proceeds of the Grant will be disbursed in accordance with the Bank's disbursements guidelines as it will be outlined in the Disbursement letter and in accordance with the Bank Disbursement Guidelines for projects. The sole responsibility to disburse on behalf of the project to suppliers, contractors, consultants will vest in the PWA. Transaction-based disbursement will be used under this project. Authorized signatories, names, and corresponding specimens of their signatures will be submitted to the Bank prior to the receipt of the first withdrawal application (WAs). For direct payments above the “minimum application size,” as specified in the Disbursement Letter, withdrawal applications will be submitted to the World Bank for payments to suppliers and consultants directly. The DA will have a ceiling of US \$500,000. Withdrawal applications submitted to the Bank will be prepared by the PWA and signed by the authorized signatories at the MoF, prior to submission to the Bank for processing. Table 3.1 below shows the Disbursement Categories and percentages to be financed.

Table 3.1. Disbursement categories and percentage of expenditures to be financed.

Category	Amount of the Financing Allocated (expressed in US Dollars)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, consultants' services, Training, PMU Incremental Operating Costs, and TOU Operating Costs.	3,900,000	100%
(2) Refund of Preparation Advance	600,000	
TOTAL AMOUNT	4,500,000	

36. Supporting documentation: In requesting disbursements into the DA or reimbursements for expenditures pre-financed by the recipient, the PWA will make use of a Statement of Expenditures (SOE). The SOE could be used for (i) goods contracts costing less than US\$100,000 equivalent; (ii) works contracts costing less than US\$250,000; (iii) service contracts for individual consultants costing less than US\$50,000 equivalent each, and for consulting firm services costing less than US\$200,000.

Procurement

37. Procurement of works and consultants' services under the project will be carried out in accordance with the 'Guidelines: Procurement of Goods, Works and Non consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' published by the Bank in January 2011, revised July 2014 and the 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' published by the Bank in January 2011, revised July 2014 the Grant Agreement and the Procurement Plan approved by the Bank and the donors. Donors agreed that the Bank Procurement Guidelines will apply to procurement for the project. The 'Guidelines On Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', published in October 2006 and revised in January 2011, shall apply to the project.

38. Overall responsibility for the implementation of project procurement will rest with the PWA. The PWA would act as the main counterpart to the Bank for all procurement aspects of the project and would ensure that project procurement is carried out in accordance with the Grant Agreement and the Procurement Plan. PWA procurement and contract management capacity in implementing such complex contracts is limited.

39. The PWA national PMU will be responsible for project implementation. The existing procurement staff financed under the WSCBP will support the technical aspects of the procurement process. In addition, a qualified Project Manager is already recruited and will be responsible for contract administration and management including: supervision of the civil works, with the assistance of the PMC, review and approval of consultants' deliverables and for endorsing the release of funds to the contractors/consultants in accordance with the signed contracts.

40. The main contract in the project is for design and construction of the wastewater treatment plant and subsequent operation and maintenance. It will be procured through a single procurement process involving a two-stage bidding for the contract package. The World Bank's standard bidding documents for "Design, Supply and Install" contracts will be used.

41. Other envisaged procurement activities include a PMC to assist PWA with construction management & supervision of construction, technical support to Hebron Municipality for tariff reviews and collections, consultant services to design a second phase of the project, external audits and other individual consultant(s) contracts. For each contract to be financed under the project, the different procurement and consultant selection methods, estimated costs, prior review requirements, and time frame are agreed between PWA and the Bank project team in the Procurement Plan (PP). A procurement plan, dated September 26, 2014 for the first 18 months of project implementation was prepared and agreed with the Bank and AFD during appraisal and

is summarized below. The PP will be updated at least annually or as required to reflect the actual program implementation needs and improvements in institutional capacity.

42. The overall procurement risk rating for the project is High. The Bank's prior review requirements were set in accordance with the existing procurement capacity. A number of contracts under the project will be subject to prior review by the Bank and other donors. The Bank will maintain a close follow up and quality control of procurement/contract management matters during project supervision to ensure the efficiency of procurement decisions.

43. A procurement risk assessment was carried out during preparation and evaluated the institutional capacity of the PWA to implement procurement for the project following the Bank Guidelines and reviewed the organizational structure for implementing the project. Furthermore, the assessment evaluated procurement risks and made recommendations on mitigation measures for efficient procurement under the project. Following is a summary of the identified procurement risks and mitigation measures:

44. Procurement Risks:

- a. PWA procurement and contract management capacity in implementing complex contracts, similar to those financed under the project, is limited.
- b. Lack of proper coordination and the interaction of various entities (PWA and Hebron Municipality) may cause procurement and project implementation delays.
- c. Further deterioration of the political situation may limit competition, and discourage participation by qualified international Contractors/Consultants.
- d. Cost sharing of contracts among the Bank and donors could delay project procurement due to disagreement on the applicable procurement procedures and/or the mechanism for the review of procurement decisions for jointly financed contracts.
- e. AFD may decide not to finance its respective part of a contract, if the bidder or consultant turns out to be on any of the EC or AFD sanction lists.

45. Mitigation Measures - the following actions will be implemented:

- a. Strengthening the procurement capacity of the PWA through hiring a procurement expert in "Design, Supply and Install and Operation & Maintenance" contracts with expert knowledge of the Bank Guidelines, to provide support and guidance to the PWA procurement staff in managing the bidding process up to contract award.
- b. A Project Management Consultant will be hired to assist PWA with construction management and supervision of the WWTP contract.
- c. For contracts jointly financed by the Bank and AFD, it was agreed that the Bank Procurement Guidelines will apply and the Bank SBDs/SRFP will be used, as stipulated in a 2014 Framework Co-financing Agreement between AFD and the World Bank. The applicable procurement and review procedures shall be documented in the PIM.
- d. GPNs, SPNs and REOIs shall be modified to indicate that AFD's decision to finance its respective part of a contract will be conditional on meeting AFD's legal financing requirements relating to EC and French financial and commercial sanctions.

- e. Procurement packaging and qualification requirements will be determined to allow for wide competition, including encouraging possible association among qualified local and international contractors/consultants.
- f. The Bank's prior review requirements were set in accordance with the existing procurement capacity. The Bank will maintain a close follow up and quality control of procurement/contract management matters during project supervision to ensure the efficiency of procurement decisions.

Summarized Procurement Plan

(A) General

1. Project Name: Hebron Wastewater Management Project

2. Period covered by this procurement plan: First 18 months

(B) Works: Design, Supply & Install of Plant & Equipment, and Operation and Maintenance.

1. Procurement Methods and Prior Review Thresholds: Procurement Decisions subject to Prior Review by the Bank as stated in Appendix 1 to the Guidelines for Procurement:

Category	Selection Method	Threshold	Prior Review Threshold
Works: Design, Supply & Installation of Plant and Equipment	ICB	No Threshold	First Contract
	NCB	<5,000,000	First Contract
	Shopping	<200,000	First Contract
	Direct Contracting	No Threshold	All Contracts

2. Summary of the Procurement Packages planned during the first 18 months after project effectiveness

Description	Estimated Cost US\$	Procurement Method	Pre-Qualification (yes/no)	Review by Bank (Prior / Post)	Comments
Design, Supply & Install and Operation & Maintenance of the Hebron WWTP	43.1 Million	ICB	No	Prior	Two Stage Bidding. One contract.

(C) Selection of Consultants

1. Selection Methods and Prior Review Thresholds: Selection decisions subject to Prior Review by Bank as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants:

Category	Selection Method	Threshold (US\$ Equivalent)	Prior Review Threshold (US\$ Equivalent)
Consulting Services Firms	QCBS/QBS	No threshold	First contract selected under each of the two methods and thereafter all contracts above \$200,000.

	CQS/LCS/FBS	<300,000	First contracts selected under each method and thereafter all contracts above \$200,000
	Sole Source	No threshold	All contracts
Individuals	IC	No threshold	First contracts regardless of the value and thereafter all contracts above \$100,000
	Sole Source	No threshold	All contracts

2. Short list comprising entirely of national consultants: Short list of consultants for services, estimated to cost less than \$300,000 equivalent per contract, may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

3. Consultancy Assignments with Selection Methods and Time Schedule

Ref. No.	Description	Estimated Cost US\$	Selection Method	Review by Bank (Prior / Post)	Comments
1.	Project Management Consultant (Construction Management & Supervision for Construction of HRWWTP)	2.4 million	QCBS	Prior	
2.	Technical Support to the Municipality of Hebron for Tariff Reviews and Collections	0.5 million	multiple		

46. The Bank will carry out at least two implementation support missions per year. In case there are post review contracts, a post procurement review of contracts which are not subject to the above prior review requirements shall be conducted once a year. The procurement post reviews should cover at least 20 percent of contracts subject to post review. Complete procurement documentation for each contract, including bidding documents, advertisements, bids received, bid evaluations, letters of acceptance, contract agreements, securities, related correspondence etc., will be maintained by PWA in an orderly manner, readily available for audit.

Social (including safeguards)

47. The Bank's Operational Policy OP 4.12 (Involuntary Resettlement) is not triggered in this project. There is no acquisition of private property, nor are there any livelihoods impacts on communities under this project. The Bank has received confirmation from the PWA and Hebron Municipality that no lands under private owners or communities are impacted. The land needs for the wastewater treatment plant is met through lands owned by the PWA. It was also confirmed by the Hebron Municipality that both the trunk line and access road are in the public domain in Hebron municipality. The USAID-financed access road located in the Wadi had 9 landowners and land transaction was voluntarily carried out, which was based on fully and informed consent. The sheet with signatures of those who voluntarily provided their land reflects this and the broad consultations further attest to this. Documentation on how the project is meeting land needs has been provided to the Bank and is also confirmed in the analysis

presented in the Bank approved environment and social assessment report (cleared in July 2013 and updated in September 2014).

Environment (including safeguards)

48. The project has been classified under the environmental category “A” in accordance with the World Bank’s Operational Policy OP 4.01. This class of project is normally expected to have a significant effect on the environment. The client has prepared an Environmental, Social, and Cultural Heritage Impact Assessment (ESCHIA), including an Environmental, Social, and Cultural Heritage Management Plan (ESCHMP) for the Hebron Wastewater Treatment Plant and trunk sewer (HWWTP) as required by the Palestinian Water Authority (PWA), AFD, and the World Bank. The ESCHIA/ESCHMP satisfies the required Environmental Assessment (EA) and Environmental Approval as promulgated by the Palestinian Environmental Law (PEL), and the Palestinian Environmental Assessment Policy (PEAP).

49. The project, especially through the Environment, Social and Cultural Heritage Impact Assessment (ESCHIA) carried out project stakeholder consultations in a number of settings using an array of methods to ensure the broadest possible outreach to all key constituents. Stakeholders’ opinions were sought and recorded on a range of topics including expected project outcomes, the implementation timing and method, and willingness to pay for wastewater management services. Project stakeholders consulted with included respective village council members, key figures of local authority, household members affected under the project, women, farmers, craftsmen and managers of various economic businesses and stone cutting industries. In total thirty-six individuals were interviewed. In addition, government officials were consulted with to discuss project design and to elicit feedback on design elements as well as the socio-economic and environmental aspects of the project. Consultations were held with the Ministry of Local Government (MoLG), Ministry of Tourism and Antiquities (MoTA), Palestinian Water Authority (PWA), Ministry of Labour (MoL), Ministry of Planning (MoP), Ministry of Agriculture (MoA), Ministry of Public Works and Housing (MoPWH), Environmental Quality Authority, and Hebron Municipality. The methods used to carry out consultations included focus group discussions; key informant interviews; large town hall type meetings; among others. Several meetings were sex disaggregated to ensure adequate voice and representation of women. Details on the nature of these consultations as well as the outcomes are detailed in the Bank approved and disclosed ESCHIA document. The ESCHIA/ESCHMP was translated and disclosed on July 25, 2013 at the INFOSHOP and has been made locally available in an accessible manner since July 12, 2013 on the PWA web site and in hard copy at the PWA office in Ramallah. An updated ESCHIA/ESCHMP has similarly been reviewed, cleared and disclosed October 1, 2014. For the associated works financed by USAID (access road, trunkline extension and water and power services), a site visit of the proposed facilities, including meetings with landowners and project management staff, the Bank team understands there are no impacts of these associated works as defined under OP 4.12.

50. The client has also held consultations with relevant stakeholders as noted in the social safeguards section above, a summary of which is included in the ESCHIA/ESCHMP. The ESCHIA/ESCHMP was available prior to the project appraisal. The executive summary of the ESCHIA/ESCHMP was released through the World Bank’s Infoshop and locally in Arabic and English in July, 2013, and an updated ESCHIA/ESCHMP was similarly redisclosed October 1, 2014. The ESCHIA/ESCHMP includes an overview of the key environmental, social, and cultural heritage impacts associated with the construction and operation of the HWWTP and

trunk sewer. It provides mitigation measures to be considered in the design and proposes an environmental management and monitoring plan. The updated ESCHIA/ESCHMP includes the following changes: (i) the final alignment of all associated works; (ii) clarification of the roles of co-financiers; (iii) additional land ownership documents confirming that OP 4.12 is not applicable; (iv) a comparative analysis of ‘no project’, ‘phase 1 only’, and ‘phase 1 and phase 2’; and (v) clarification of the coordinating role of PWA and the PMU in coordinating safeguards supervision, monitoring, and reporting for the World Bank as well as USAID associated works.

51. Based on the analysis of the different safeguard policies and the information collected, none of the safeguard policies other than OP 4.01 (Environmental Assessment) are impacted by the project activities. Although it is proposed that most of the treated wastewater from the WWTP will ultimately be reused in agriculture with the long term objective of minimum discharge of treated flows to the Wadi, reuse will not be financed within the current project and thus has not been included within the scope of the ESCHIA/ESCHMP. The wadi has been selected as the conduit for releasing wastewater discharge at the end of Phase-1, as any other alternative would require lift out of the wadi depression, thus more costly. Sludge produced at the WWTP as a result of treatment processes will be thickened and then placed in drying beds. The chemical content of the dried sludge will be tested periodically by the PWA to ensure that it meets current and future standards established by the Palestinian Authority for sludge disposal on agricultural lands. Treated sludge may be sold or made freely available to farmers by Hebron Municipality provided that it meets the established environmental standards referred to previously. If the dried sludge does not meet PA's standards, additional treatment or disposal in sanitary landfills may be required.

52. With careful planning, adherence to standard procedures of good engineering and construction practice and implementation of mitigation measures as described in the ESCHIA/ESCHMP, potential adverse impacts will be minimized to acceptable levels. The Borrower retains trained staff who have accumulated considerable knowledge during the implementation of similar projects such as the North Gaza Emergency Sewage Treatment Project, and are capable to implement the ESCHIA/ESCHMP. The Borrower also has modern laboratories performing regular monitoring of all essential parameters for water and wastewater quality. Lastly, an environmental capacity building and training program has been specified and budgeted to provide additional support to ESCHMP implementation.

53. The Bank’s safeguards requirements and procedures will apply in all project-financed activities regardless of the source of financing. The Standard Provisions of AFD’s financial agreement with the Palestinian Authority includes the following requirements:

- a. to implement specific impact mitigation measures for the Project, as set forth in connection with the Project’s environmental and social risks management policy, ie: the measures described in the Environmental and Social Management Plan (ESMP) attached as Schedule 5 to the AFD agreement (*Mitigation measures within the context of the environmental and social risks management policy*);
- b. to require that contractors selected for the implementation of the Project apply these mitigation measures and procure that their subcontractors, if any, comply with all these measures, and in case of failure to implement these mitigation measures, take all appropriate measures; and
- c. to provide AFD with regular progress reports with respect to the ESMP implementation.

54. USAID's independent financing is subject to safeguards which are in line with the Bank's safeguards policies.

55. Project Impacts: Anticipated direct, negative project impacts of the WWTP include shorter-term impacts related to construction, such as ambient dust and noise, worker health and safety, large truck and equipment movement on traffic and road quality, and construction debris management and disposal; as well as longer-term impacts related to WWTP operations, such as proximal soil quality, groundwater quantity and quality, adverse impacts of the wastewater stream, and sludge generation and management.

56. Anticipated direct, positive impacts of WWTP construction and operation include treatment of currently untreated municipal wastewater, which is as of now disposed directly into the nearby open wadis, which then percolates into groundwater aquifers causing environmental, health, and social problems, expanded supplies of treated wastewater for agricultural uses, and, in the timespan of construction, increased demand for employment of local, skilled workers by companies and/or contractors.

57. More indirect impacts of the WWTP operation include alleviating the potable water shortage by providing a large quantity of treated wastewater for agricultural and industrial purposes, thus shifting application of potable water to higher-value uses. Additionally, obtaining a higher level of total treated wastewater will reduce pollution loads of nitrate and chloride percolating into wells located downstream of the WWTP location. Although the WWTP site is situated outside Hebron City, far from residences, schools, hospitals, police and fire stations, and mosques, it is located both in a flood zone as well as in an earthquake fault zone and appropriate design, construction, and operation measures will need to be developed to address these two geographical features as well as man-made risks of power failure and operational errors and mechanical malfunctions.

58. Construction impacts specific to installation of the trunk sewer line may include noise, vibration and dust generation; increased traffic; generation of disposal wastes; and damage to proximal landscape and aesthetics.

59. Mitigation Measures and Monitoring Arrangements - Mitigation measures, monitoring arrangements, institutional responsibilities and monitoring frequencies are all elaborated in the Environmental Management and Monitoring Plan (EMMP) as well as the Social Management and Monitoring Plan (SMMP), both included in the ESCHIA executive summary as well as full text.

60. The winning firm or consortium to implement the Design, Supply, Install and Operate contract must include an on-site, full-time occupational health and safety officer, to directly supervise and monitor all aspects of environmental and social safeguards during the construction phase. This safety officer will draft and disseminate monthly safety reports. As most environmental protection activities are engineering measures, funding for most of the EMMP implementation measures should be made explicit in the design-build-operate costs and offered by the project contractors and operators. These costs should be detailed line-items to be listed in the tendering documents, including in the bill of quantities.

61. It is also suggested that performance indicators specific to environmental safeguards compliance be designed to supplement engineering performance indicators and that there be

defined monetary penalties associated with insufficient performance specific to environmental safeguards compliance.

62. The supervisory engineering consulting firm (Project Management Consultant) will provide for independent monitoring of environmental and social safeguards, to focus on safeguards impacts including and in addition to occupational health and safety (construction debris removal, noise, air, and traffic impacts, etc.). Environmental and social safeguards aspects should be addressed in a separate section of its monthly and quarterly reports.

63. Lastly, PWA will hire an environmental and social safeguards specialist in order to provide guidance to the on-site teams on World Bank and Palestinian environmental safeguards, to ensure baseline and subsequent monitoring systems for water quality, groundwater quality and quantity impacts, ambient air and noise analysis, etc. The TOR and recruitment process can closely follow the example of Northern Gaza Emergency Sewerage Treatment Project (NGEST), which recently hired such a specialist to assist NGEST and PWA Gaza.

64. This PWA safeguards specialist will be responsible for refining as well as enforcing implementation of indicators and targets to measure environmental and social safeguards compliance. Monitoring results during construction and operation will be made publically available on the PWA Ramallah website on a quarterly basis. The safeguards specialist will also draft a TOR for a Supplemental ESIA/ESMP for the effluent recovery and treated wastewater reuse component which is expected to be later funded under additional financing and/or a subsequent project.

65. Capacity for Safeguards Implementation - The PWA has similar institutional arrangements to those described above already in place for the NGEST Project. The PWA in Ramallah has good capacity with regards to water quality monitoring and reporting. The Project will further develop such capacity by financing additional safeguards training for PWA and PMC staff as well as relevant Hebron Municipality staff. Furthermore, the PWA Safeguards Specialist will continue to build further social and environment management capacities of local contractors through technical well-structured training.

66. A new Water and Wastewater Department (WWD) in Hebron Municipality is expected to be established prior to completion of construction phase. This WWD will require capacity building in order to successfully supervise environmental and social safeguards implementation during the operational phase. As addressed in the preparatory scoping sessions, a capacity building program is required for those who are to be responsible for the management of the treated effluent network.

67. The Environmental Quality Authority has good capacity and experience in impact assessment and environmental management, but they require further capacity enforcement in terms of environmental monitoring, inspection, and auditing. As the project will also include a clear agreed-upon wastewater tariff policy, technical assistance may be needed in order to estimate and incorporate positive and negative externalities of improved wastewater collection and treatment on the proximate human and physical environment.

Monitoring & Evaluation

68. The project will be subject to joint supervision missions to be coordinated with donor partners at least every six months. In addition, a mid-term review to evaluate project implementation performance and assess readiness for a possible follow-on project to finance the

second phase of the wastewater management action plan for Hebron (or the need for restructuring the current project) will be carried out within the first 24 months of implementation.

Role of Partners

69. The Project involves financing from four donor partners – The European Commission, AFD, USAID, and the World Bank. Contributions from the European Commission will be managed by AFD through a delegation arrangement. AFD will support the project through co-financing arrangements with the World Bank. USAID will directly finance specific project activities including construction of an access road for the WWTP, installation of a main sewer connection between the existing sewer network and the WWTP, and provision of water and electricity connections for the WWTP.

70. In addition to the coordination measures to be put in place for financial management and procurement as outlined in the preceding sections, donor partners will coordinate to ensure streamlined supervision, reporting, and evaluation of project activities. Inter alia, the partners will carry out joint supervision missions at least every six months, and provide the PA with joint aide memoires for these missions that summarize commonly agreed issues and actions. A common reporting format will be agreed to allow for unified reporting by PWA for all donors.

71. The Bank's safeguards requirements and procedures will apply in all project-financed activities regardless of the source of financing. USAID's independent financing is subject to safeguards with are in line with the Bank's safeguards policies.

Annex 4: Operational Risk Assessment Framework (ORAF)

West Bank and G: Hebron Regional Wastewater Management Project - Phase 1 (P117449)

Project Stakeholder Risks						
Stakeholder Risk	Rating	Moderate				
Risk Description: Communities: Residents outside the service area but along sewer trunk lines may object if they are not provided with sewer services. In addition, communities in the immediate vicinity of the wastewater treatment plant might be adversely affected by odors from the WWTP and loss of informal grazing access to State-owned land at the site of WWTP. Government of Israel and the Israeli Water Authority (IWA): The IWA may not agree with the technical design of the treatment plant or effluent standards to be achieved. Achieving treatment standards that may be required by the IWA in order to acquire permits may increase project costs and/or lead to a technically complex system that will be difficult to manage in a sustainable manner.	Risk Management:					
	The project includes consultations and public awareness campaigns with all affected communities and will seek to maximize the number of beneficiaries.					
	Resp: Client	Status: In Progress	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:
Risk Management:						
The Israeli Government has repeatedly requested the PA to address the sanitation problem in the Hebron watershed. IWA has, as of September 2010, agreed to achievable effluent quality standards for the wastewater treatment in the West Bank and Gaza, but Israeli intentions re. pollution fees remains unclear.						
Resp: Client	Status: In Progress	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:	
Implementing Agency (IA) Risks (including Fiduciary Risks)						
Capacity	Rating	High				
Risk Description: Hebron Municipality may not have the technical capacity or political will to ensure the sustainable operation and maintenance of the wastewater management infrastructure, or to charge adequate tariffs. There is a risk of inaccurate budgeting or that the budget is not updated and monitored on a timely basis. Palestinian Water Authority (PWA) and West Bank Water	Risk Management:					
	The budget will be prepared annually, with semi-annual updates, by year and quarter, and submitted to the Bank. Also, comparison between actual vs. budgeted expenditure will be tracked with proper explanations and justifications will be provided for significant deviations.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: <input checked="" type="checkbox"/>	Due Date:	Frequency: Yearly
Risk Management:						

Department: The PWA has limited capacity to manage the procurement of works and consultants in accordance with Bank policies and guidelines. The West Bank Water Department has also weak capacity as it is a nascent utility.

Capacity building will be provided to municipal organizations with responsibility for managing wastewater services. Involvement of private sector firms specializing in wastewater management through management contacts of other forms of PSP will be encouraged.

Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
Both	Not Yet Due	Implementation	<input type="checkbox"/>	31-Dec-2020	

Risk Management:

A procurement plan for the first 18 months of project implementation was prepared and agreed with the Bank during appraisal. The PP will be updated at least annually or as required to reflect the actual program implementation needs and improvements in institutional capacity.

Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
Both	Not Yet Due	Implementation	<input checked="" type="checkbox"/>		Yearly

Risk Management:

All contracts under the project will be subject to prior review by the Bank and other donors. The Bank will maintain a close follow up and quality control of procurement/contract management matters during project supervision to ensure the efficiency of procurement decisions.

Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
Bank	Not Yet Due	Implementation	<input type="checkbox"/>	31-Dec-2020	

Risk Management:

PWA procurement staff will receive fiduciary training on the administration of large scale “Design, Supply and Install and Operation & Maintenance” and consultant services contracts. The training shall include all administrative, financial, managerial and technical aspects of contract management from contract award until completion.

Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
Both	Not Yet Due	Implementation	<input type="checkbox"/>	30-Sep-2015	

Risk Management:

Strengthening the procurement capacity of the PWA through hiring a procurement expert in “Design Build” (Supply and Install) and operation & Maintenance contracts with expert knowledge of the Bank Guidelines, to provide support and guidance to the

	PWA procurement staff and managing the bidding process up to contract award.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Jun-2015	Frequency:
Governance	Rating	Substantial				
<p>Risk Description:</p> <p>Evolving water sector reform process may provoke institutional rivalries over the mandate for provision of local wastewater management services. The size and importance of civil works and consulting services and the likely teaming of Palestinian consultants with international firms may create the conditions for conflicts of interest and influence the procurement process.</p>	Risk Management:					
	Guidance from the Cabinet of Ministers Steering Committee for Water Sector Reform will be sought to ensure effective inter-ministerial coordination.					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:
	Risk Management:					
	The Water Sector Capacity Building Project will provide technical and financial resources for achieving effective inter-agency coordination to achieve sector development goals.					
	Resp: Both	Status: In Progress	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:
	Risk Management:					
	Implementation of the Action Plan for Water Sector Reform will, inter alia, clarify institutional roles, responsibilities, and coordination mechanisms.					
Resp: Both	Status: In Progress	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:	
Risk Management:						
Procurement staff in PWA and other agencies will receive training on contract management. Procurement procedures will be subject to Bank's (and AFD's) prior review and will adhere to Bank procurement guidelines; short lists and the evaluation of proposals shall be carefully reviewed to avoid potential conflict of interest. RFPs will also clearly state the issue of conflict of interest which will disqualify the applicant.						
Resp: Both	Status: Not Yet Due	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:	
Project Risks						

Design	Rating	Substantial				
<p>Risk Description:</p> <p>Regional wastewater management requirements are large and there is a risk that project design may become large and institutionally complex.</p> <p>There is a risk that no funds will be available for Additional Financing in FY16 to cover the US\$ 5.5 million financing gap, as the regularly programmed FY15 activities have been reallocated for Gaza emergency reconstruction needs. As the AFD made their financing contingent on World Bank participation, there would be a risk that AFD does not provide a no-objection to the contract for plant design, supply, installation and operation and maintenance, since not all financing would have been secured.</p>	Risk Management:					
	<p>The project is designed as an initial phase within a larger overall development plan that is in place for the Hebron Region. The size and complexity of the phase to be financed under this project has been adapted with consideration given to current institutional capacities and available financing. For example, higher level (tertiary) treatment and effluent reuse for agriculture have been deferred pending the establishment of effective institutions for managing and financing basic waste water operations.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
	Client	In Progress	Both	<input type="checkbox"/>	31-Dec-2020	
	Risk Management:					
	<p>The project financing plan has been designed such that effectiveness of Additional Financing can be delayed until completion of WWTP construction, since the AF funds would mostly go to O&M of the WWTP. Further discussion with AFD on provision of no-objection to the contract might have to be pursued if Additional Financing does not materialize in FY2016.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
	Both	Not Yet Due	Implementation	<input type="checkbox"/>	16-Nov-2015	
Social and Environmental	Rating	High				
<p>Risk Description:</p> <p>There is a risk that wastewater effluent will enter local water bodies and groundwater. Strategy for managing stone cutting, tannery, and other waste streams from the Hebron Industrial Area may not be implemented or regulations may not be adequately enforced, and industrial wastes may deleteriously impact WWTP operations and effluent quality. The winning firm or consortium to implement the design-build contract may not adequately supervise and monitor all aspects of environmental and social safeguards during the construction phase.</p>	Risk Management:					
	<p>Quality of the aquifer and surface waters and possible changes as a result of discharges/recharge with treated effluent will be evaluated during implementation as part of the ESCHMP.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
	Client	In Progress	Implementation	<input checked="" type="checkbox"/>		Yearly
	Risk Management:					
	<p>Implementation of the action plan and financing for implementing the Industrial Zone wastewater management strategy will be closely monitored as part of project implementation support.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:
Both	Not Yet Due	Implementation	<input type="checkbox"/>	30-Sep-2016		

	<p>Risk Management: Performance indicators specific to environmental safeguards compliance be designed to supplement engineering performance indicators and monetary penalties associated with insufficient performance specific to environmental safeguards compliance will be part of the contract.</p>					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:
	<p>Risk Management: The winning firm or consortium to implement the design-build contract must include an on-site, full-time occupational health and safety officer, to directly supervise and monitor all aspects of environmental and social safeguards during the construction phase. This safety officer will draft and disseminate monthly safety reports.</p>					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 31-Dec-2020	Frequency:
Program and Donor	<p>Rating Substantial</p>					
<p>Risk Description:</p> <p>The World Bank is a minority financier and sufficient donor financing might not be available to implement all project components.</p> <p>There is a fiduciary risk associated with the management of co-financing in terms of overlapping funding support.</p> <p>There is a risk associated with financing for subsequent phases (effluent reuse scheme, expansion) for the HRWMP not materializing.</p> <p>There is a risk that AFD will not provide no-objection to co-financed contracts when successful bidders are eligible according to AFD criteria.</p>	<p>Risk Management: In-principle commitments in writing to support the project have been received by the PWA from the EC and USAID, in addition to prior commitments from AFD and the World Bank. Limited additional funding from the World Bank may be made available from the Infrastructure Development Multi-donor Trust Fund if there are minor shortfalls. Confirmation of financing from other donors was received during appraisal.</p>					
	Resp: Both	Status: Completed	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date: 31-Oct-2013	Frequency:
	<p>Risk Management: The project will draw upon prior experience with co-financing arrangements in similar Bank-supported projects in the West Bank and Gaza where workable procurement, FM, and reporting arrangements have been established that can be applied in this project. In addition, the MoF accounting system will be used to account for, record, report, and monitor project's accounts. The system is capable of capturing all Project related transactions and has the flexibility to permit the establishment of separate cost centers to track and report upon the use of project funds for each financier.</p>					
	Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:

	Both	In Progress	Both	<input type="checkbox"/>	31-Dec-2020	
Risk Management:						
The PA, World Bank and development partners will start identifying funds for subsequent phases as soon as WWTP construction starts.						
Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
Both	Not Yet Due	Implementation	<input type="checkbox"/>	01-Nov-2015		
Risk Management:						
The World Bank and AFD will prepare a Memorandum of Understanding further specifying that World Bank procurement procedures apply.						
Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
Bank	Completed	Implementation	<input type="checkbox"/>	30-Jun-2014		
Delivery Monitoring and Sustainability		Rating	Substantial			
Risk Description:		Risk Management:				
Data on tariff collection and effluent monitoring might not be reliably collected. There is currently no tariff levied for sewerage and collection rates for water tariffs are low. Therefore, tariff revenues might not be sufficient to cover operation and maintenance costs of the infrastructure throughout the project. Tariffs will need to be increased but there may be public resistance to pay.		Hebron municipality has a strong track record and commitment to covering the costs of public services. Reduction of the treatment charges currently imposed by the Israeli Govt. for Hebron waste water will provide additional financial resources to operate and maintain the new infrastructure. In addition, prepaid metering has been effective in improving financing of water and sanitation services in parts of the West Bank and may be introduced in Hebron. The project will provide technical assistance to improve financial sustainability. The World Bank has mobilized Trust Funds to do analytical work on cost recovery and charges for wastewater collection and treatment which would support any discussions on full cost recovery.				
Resp:	Status:	Stage:	Recurrent:	Due Date:	Frequency:	
Both	In Progress	Implementation	<input type="checkbox"/>	31-Dec-2020		
Overall Risk						
Overall Implementation Risk:		Rating	Substantial			
Risk Description:						
Overall implementation risk is substantial due to the overall milieu of high political and security risks that may delay or restrict some or all project activities. The lack of a pre-existing institution or financing mechanism for wastewater management in Hebron Municipality also creates a substantial risk. A high level of commitment from the municipality to the project objectives, relatively strong municipal governance, the ongoing water sector reform process, and strong impetus from both the PWA and the IWA as well as political impetus in Israel to improve wastewater						

management in the Hebron Governorate are mitigating factors. The project is unlikely to be viable in purely economic terms, especially without effluent reuse being introduced. However, it possesses very high levels of political and environmental viability due to downstream impacts of untreated waste water on Israeli communities and their water supplies.

There is a risk that the Additional Financing will not become available in FY2016 when the no-objection to contract for plant design, supply, install, operate and maintain is due. In order to mitigate this risk the World Bank and AFD will explore options to mitigate this risk (mobilize funding from external sources, revised contracting procedures, or revised AFD no-objection procedures).

Annex 5: Implementation Support Plan

WEST BANK & GAZA: HEBRON WASTE WATER MANAGEMENT PROJECT

Strategy and Approach for Implementation Support

1. The strategy for implementation support takes into consideration the technical and institutional capacities of the PWA and Hebron Municipality, the funding arrangements involving four donor financiers and three funding channels, and the size and complexity of the contracts that will need to be managed. The size of the civil works contract will be significant in comparison with others managed by PWA.
2. Consideration is also given to the substantial capacity-building component of the project, and the fact that the institutional arrangements for managing wastewater services in Hebron will be developed while broader water sector policies and institutional roles in West Bank and Gaza are themselves evolving.

Implementation Support Plan

3. The Bank’s Project implementation support team will include a HQ or Country Office-based Task Team Leader, a technical specialist with strong expertise in wastewater treatment, as well as Country Office-based sector, procurement, FM, and safeguards staff. HQ-based procurement and safeguards specialists will augment support provided by locally based staff.
4. Procurement and financial management training will be provided in the first months of project implementation, with some procurement training to be scheduled prior to Effectiveness.
5. Safeguards staff will coordinate with technical staff in the PMU to oversee monitoring of environmental and social impacts and ensure that PWA and the municipality are satisfactorily executing their environmental management plan.
6. Technical support will principally involve joint implementation support missions to be conducted biannually with the donor partners. AFD, the EC, and USAID. All of the donor agencies have water sector technical specialists assigned to this task.
7. Fiduciary support will be provided primarily by the Bank’s procurement and financial management specialists based in Jerusalem. In addition to biannual supervision missions, these specialists will be available on an ad hoc basis to provide support as may be required to the project implementing agency.

Implementation support – main focus:

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	Procurement of Design-Build, Operating, and engineering supervision contracts, establishment of project implementation arrangements	Technical support for procurement and consultant mobilization		The World Bank Jerusalem Office will provide technical support for procurement.

12-91 months	Project supervision and quality assurance	Wastewater engineering, utilities management, environmental impact monitoring, procurement, financial management		AFD, EC, and USAID will conduct joint supervision missions
Other				

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Implementation support and technical supervision	9 weeks/year	3 per year	
Procurement supervision	2 weeks/year		
Financial management	1.5 weeks/year		
Institutional Capacity-building	2 weeks/year	2 per year	
Safeguards	2 weeks/year	2 per year	

Partners

Name	Institution/Country	Role
Céline Robert	AFD	Project manager
Sophie Taintor	USAID	Infrastructure adviser
Sophie Collette	European Community	Infrastructure adviser

Annex 6: Economic and Financial Analysis

WEST BANK & GAZA: Hebron Wastewater Management Project

Part I: Cost Benefit Analysis

1. Calculating the costs and benefits of wastewater treatment is difficult due to the large positive externalities that such projects generate and the inherent difficulties to monetize many of these externalities. In addition, the economy of the West Bank is heavily distorted which will require any analysis to calculate shadow prices for many of the different project inputs to get a proper understanding of the true cost of such a project in the West Bank. In this annex we will look into the cost of the wastewater treatment plant and link these costs with international benchmarks to understand in how far the proposed investment is cost-effective.

2. In addition, we will present a financial analysis of the Hebron municipality's water and sewerage utility and see the effect of the investment on the utility's financial status. As part of the project preparation, a financial sustainability action plan was prepared that is expected to result in the water and wastewater services to be put on a more financially sustainable footing in the medium-term.

Methodology

3. The major investment of this project is the detailed design and construction of a wastewater treatment plant (WWTP) with a capacity of 15,000 cubic meters per day. The design will allow for an increase of the capacity to 35,000 cubic meters per day to accommodate sewer network expansion and population increases. The treated effluent will meet the Palestinian Authority's standard for secondary treatment that will allow for environmental disposal of the wastewater to the wadi and for effluent reuse in the future for certain forms of irrigated agriculture. The cost for the wastewater treatment plant includes the costs of the treatment plant, the main trunk line and access facilities, the cost to implement the works (including supervision under component 3 of project management) and the operation and maintenance grant (under component 2 of the project) for a total of US\$ 33.08 million of a total project value of US\$ 47.8 million (excluding contingencies and taxes).

4. Other project components include capacity-building technical assistance for Hebron Municipality, financing for project management, a project preparation grant, and additional studies to support the design and preparation of a second phase for the project.

5. The activities were appraised measuring their flow of costs and benefits for the lifetime of the project, estimated at 30 years. Costs and benefits were expressed in constant prices as of 2012.¹⁸ The discount rate corresponding to the opportunity cost of capital is estimated at 10 percent.

Estimation of Benefits

6. The project will generate various benefits linked to the construction of the wastewater treatment plant. The utility does not generate direct fees for wastewater collection and treatment, but a separate wastewater tariff is foreseen to be introduced during the lifetime of the project. The current water tariff in Hebron that also covers wastewater management is NIS 5 per cubic

¹⁸ The exchange rate used was USD 1 is equivalent to NIS 3.85.

meter (equivalent to US\$ 1.30). Changes in the tariff structure were adopted in August 2013. These changes include a change in the tariff structure that puts in place an increasing block tariff structure with a tariff ranging from NIS 4 to NIS 9 (equivalent to US\$ 1.04 to 2.34) per cubic meter, depending on the block. It is not yet clear to what extent this tariff will impact the current average tariff that in 2012 was NIS 5.68 (equivalent to US\$ 1.48) per cubic meter of water.

7. On average, wastewater treatment makes up about 15 percent of the total water and wastewater tariffs which would amount to NIS 0.85 per cubic meter (equivalent to US\$ 0.20) of water sold.

8. Project benefits include the cost savings that are linked to Israel charging US\$ 0.39 per cubic meter of wastewater that reaches and hence is treated in Shoket. These payments are deducted from the Palestinian VAT and custom duties collected by Israel and hence have a large fiscal impact. This means that the available budget for PA expenditure is severely curtailed under the current system. Adjusting the analysis for this loss in revenues will mean that the marginal cost of funds raised by additional taxes (caused by the deduction of these wastewater treatment fees) will exceed the amount of funds actually raised.¹⁹

9. Wastewater treatment will protect the health and well-being of residents along the wadi downstream of Hebron, when the flow of untreated wastewater is converted into treated effluent. The improvements in public health due to overall water quality improvements is difficult to monetize and hence has not been undertaken in the absence of information to calculate such public health benefits.

10. Finally, the project will also protect the Eastern Aquifer as the flow of untreated wastewater for 40 kilometers along the wadi has been identified as a source of contamination as a result of groundwater infiltration. Yet, in the absence of a detailed hydrogeological evaluation of the aquifer it is impossible to determine what the precise impact of this contamination is on the aquifer.

11. The second project component is aimed to improve the capacity of the municipality to deal with wastewater management in a sustainable manner. This will include improvement of the financial, institutional and commercial management of wastewater services, which, inter alia, expected to increase the collection efficiency for water and sewer services. This sub-component will include funding activities aimed at improving the collection efficiency through better tariff regulation, customer outreach and public awareness campaigns. It is assumed that these campaigns and outreach in combination with improvements in the system will enable the utility to increase tariffs and collection performance gradually and hence improve the cash flow in the utility.

Estimation of Costs

12. *Investment costs.* The investment costs were estimated for each component as follows. In total, 65 percent of the investment activities were evaluated (including the operation and maintenance cost contribution of the municipality valued at US\$ 7.8 million). The remaining activities are focused on capacity building and operational support to fund additional studies, contingencies and tax payments which have not been subjected to a financial and economic analysis.

¹⁹ Devarajan, S., L. Squire and S. Suthirwart-Narueput, 1995. "Reviving Project Appraisal at the World Bank. Policy Research Working Paper 1496, World Bank, Washington DC.

13. The estimated cost of the WWTP is US\$ 24 million for a total daily capacity of 15,000 cubic meter per day. This cost is significantly higher than the cost of a secondary treatment plant of 9,000 CM per day capacity that was constructed in 2009 in Israel. For the current WWTP, the cost is US\$ 1,600 per cubic meter of wastewater treated per day compared to US\$ 889 in Shoket, Israel. As WWTP tends to benefit from economies of scale, and technology improvements are incorporated in the price of a new WWTP, it is assumed that the effect of inflation between 2009 and 2013 is more than compensated for by these earlier-mentioned effects. The Israeli are considering charging the Palestinian Authority for an upgrade of the Shoket plant to deal with the wastewater generated in Hebron at a cost of NIS 45 million (equivalent to about US\$ 12 million). Hence, the economic price of a WWTP is significantly lower than the financial price of US\$ 24 million.

14. We further assume that other investments of infrastructure most notably the cost of the trunk main and access facilities as well as the cost to implement the works will face similar distortions and hence the same conversion factor will be used.

15. *Operation and Maintenance Costs (O&M).* The location of Hebron in the West Bank also affects the operation and maintenance costs of wastewater treatment. The economic prices of most project inputs are significantly lower than the financial prices which reflect the cost of the restrictions to movements of goods and people and the 1995 Oslo II interim accord water provisions.

16. *Staff Costs.* The operation and maintenance of the WWTP will require 14 additional staff. This assumes that the staff productivity of the WWTP is comparable to that of international benchmark standards, but as the current water and sewer departments are seriously overstaffed, and in view of the additional support to run the wastewater operations more efficiently in the future, such staffing pattern seems appropriate. The financial cost of this staff is high at US\$ 13,500 per year especially in view of the high unemployment in the Hebron municipality (estimated at 26 percent) for both skilled and unskilled labor and the minimum wage (announced at the end of 2012) of NIS 1,450 per month (equivalent to \$4,500 per year). Hence, the shadow wage rate is significantly below the financial cost of labor. It was assumed that the conversion factor is 0.33.

17. *Energy Costs.* The energy intensity of the new WWTP is high at 1.8 kWh per cubic meter of wastewater treated. The plant can generate co-generation benefits which can be used in the wastewater treatment process. We also assume that the current rate of US\$ 160 per MWh is a reasonable estimate of the price of electricity in the country.

18. *Chemicals.* The consumption of polyelectrolytes is estimated at 10.8 gram per cubic meter of wastewater treated. FOB price of this chemical is estimated at US\$ 1,000-3,750 per ton compared to a financial cost of US\$ 5,500. We have assumed the shadow price of chemicals to be US\$ 2,375.

19. *Disposal of solid waste.* The sludge produced by the wastewater treatment plant could be used as a soil conditioner. However, the poor experience with sludge management in the region has made it likely that instead of generating benefits, this sludge will have to be transported to a landfill to ensure proper disposal. It is assumed that the plant will produce a little over 3 kg of dried sludge per cubic meter of wastewater treated. It is likely that the financial cost of US\$ 25 per ton should be adjusted for distortions in the economy linked to traffic restrictions and the like will ensure that the economic price of solid waste disposal is below that of its financial price. A

recent study by SWEEPNET noted that the cost of transfer and disposal of solid waste was around NIS 40-47 per ton of solid waste in 2012. Using this information, the economic price of solid waste disposal would be around US\$ 12.20 per ton²⁰.

20. *Maintenance.* Maintenance is a function of the investment costs. It is assumed that the cost of maintenance is respectively 0.75 percent of civil works investments and 3 percent for electromechanical and electric equipment.

21. The costs of the 5-year management and capacity building program to build an efficient wastewater management program in Hebron are estimated at US\$ 312,000 per year.

Results of the Cost Benefit Analysis

22. The project is not financially viable as can be seen in Table 6.1. Net financial losses amount to US\$ 19 million and the internal financial rate of return is negative. However, taking into consideration the expected economic costs and benefits presents a more positive prognosis for the project's economic viability.

23. *Cost Effectiveness.* Based on these results, the economic cost of providing wastewater treatment is US\$ 0.46 per cubic meter of wastewater treated (assuming a 10 percent discount rate). This is in line with the global average cost of wastewater treatment as found by Whittington and others (2010), which found an estimated cost of US\$ 0.38 per cubic meter in 2006 prices. As fuel prices have increased rapidly since then, and other prices increased by 30 percent between 2006 and 2012 resulting in an adjusted price of US\$ 0.49 (without adjusting for the effect of productivity), the calculated cost of wastewater treatment in this project seem reasonable.²¹

24. *Cost Benefit Analysis.* Calculating the benefits of this project is challenging. The Water Authority is in the process of increasing the tariffs for water. A first increase took place in August 2013. The PWA is also introducing a program to increase collection efficiencies. A tariff for sanitation is to be introduced as soon as a comprehensive tariff study is completed in the first year of the project. The tariff introduction is likely to take place by 2017 and is expected to be about US\$ 0.20 per cubic meter (which is the project's long-term marginal operation and maintenance cost). These tariff revenues are assumed to be equal to the willingness to pay for services. However, experience from the past has shown that a significant part of the Hebron population does not pay its bills. Hence we may assume actual willingness to pay for wastewater treatment is lower than tariff revenues suggest. It is expected that the collection efficiency for water and sewer services will increase from 60 percent in 2012 to 90 percent in 2020.

25. A second benefit is related to the cost savings that are linked to Israel charging US\$ 0.39 per cubic meter of wastewater that reaches and hence is treated at Shoket. These payments are deducted from the Palestinian VAT and custom duties collected by the Israel and hence have a large fiscal impact. By deducting these payments, the available budget for government expenditure is severely curtailed. It is likely – based on the experience elsewhere in the world – that the marginal cost of funds raised by additional taxes (caused by the deduction of these

²⁰ Sweepnet, Country Profile on the Solid Waste Management Situation in the Occupied Palestinian Territory, 2012 at <http://www.sweep-net.org/sites/default/files/files/FICHES%20ANG%20PALESTINE.pdf>

²¹ Dale Whittington, W. Michael Hanemann, Claudia Sadoff and Marc Jeuland, 2009. The Challenge of Improving Water and Sanitation Services in Less Developed Countries. Foundations and Trends in Microeconomics, vol. 4, no. 6-7, pp.469 – 609.

wastewater treatment fees) will exceed the amount of funds actually raised. We have assumed that it costs the government about US\$ 1.40 to raise an additional US\$ 1.00 in available funds (this factor of 0.40 compares to factors of 0.17 to 1.29 found in the literature).²²

26. As mentioned earlier there are positive externalities, in the form of public health benefits and protection of surface and groundwater resources. Since information about these benefits is not readily available, we have not attempted to calculate them at this point in time.

27. With the limited benefits that we could monetize, the project is expected to be economically viable with economic net benefits of US\$ 3 million and an internal economic rate of return of 12 percent.

Table 6.1: Results of Financial and Economic Analysis

<i>Result</i>	<i>Net Present Value (US\$ million)</i>			<i>Internal Rate of Return (%)</i>
	<i>Benefits</i>	<i>Costs</i>	<i>Net Benefits</i>	
<i>Financial Analysis</i>	17.8	36.3	-18.5	-5%
<i>Economic Analysis</i>	23.1	20.8	2.3	12%

28. *Switch Values.* The most important variables are included in Table 6.2, along with their switch values when the project loses its economic viability.

Table 6.2 Switch Values in Economic Analysis

<i>Variable</i>	<i>Switch Value</i>	<i>Original Assumption</i>
Investment Costs (US\$ million)	18	12.2
Wages and Salaries (US\$ per year)	9,450	4,500
Electricity costs (US\$ per MWh)	224	160
Chemical costs (US\$ per ton)	3,563	2,375
Marginal Cost of Public Funds	0.22	0.40
Wastewater Tariff (US\$ per cum)	0.10	0.20

Part II: Financial Analysis of the Utility

Institutional Setting

29. The Municipal Council decided to merge the water and wastewater departments in the municipality with the purpose of creating a financially autonomous water and wastewater utility within the municipality. The merged utility was established in October 2013.

Financial Status

30. In Table 6.3, the basic financial status of the Hebron water and wastewater departments are presented. As can be seen, the operation cost coverage ratio is below 1 reflecting that the utility cannot pay for all the operation and maintenance costs. The high cost is linked with the

²² Devarajan, S., L. Squire and S. Suthirwart-Narueput, 1995. "Reviving Project Appraisal at the World Bank. Policy Research Working Paper 1496, World Bank, Washington DC.

high cost of bulk water, which make up more than half of the total operation and maintenance costs. The cost of O&M expenses (which only cover water and wastewater collection) were US\$ 2.10 per cubic meter – far above the global average.

Table 6.3 Financial Status of the Water and Wastewater Department

Basic Financial Performance	US\$	2010	2011	2012
Water sales	US\$/year	5,448,022	5,818,069	5,292,877
wastewater sales	US\$/year			
Other	US\$/year	896,840	3,037,191	1,564,968
Total income billed	US\$/year	6,344,862	8,855,259	6,857,845
Total income collected	US\$/year	4,860,779	3,946,746	4,428,007
Water imported	US\$/year	3,766,267	3,794,347	3,921,236
Manpower	US\$/year	1,774,817	2,223,273	2,021,694
Electricity	US\$/year	330,677	374,012	310,959
Chemicals	US\$/year	4,237	4,139	1,792
Other	US\$/year	1,381,189	1,250,673	1,296,477
Total O&M expenses	US\$/year	7,257,187	7,646,445	7,552,157
O&M expenses per cum of water	US\$/cum	1.71	1.69	2.10
Income billed / O&M costs		87.4%	115.8%	90.8%
Income collected / O&M costs		67.0%	51.6%	58.6%

Source: ASPA, 2013

31. The technical assistance program in the project is providing technical assistance to build the capacity of the Hebron utility to have the municipality fully capable of managing the operation contract and enable its staff to operate the plant within a five year timeframe. The same component will also enhance the capacity of the municipality to implement water and wastewater tariff reforms, improve tariff collection and increase the financial revenues of the sector towards cost recovery.

32. The effect of the project on the financial status was tested. A number of assumptions were made to determine how the construction and operation and maintenance of the new wastewater treatment plant. The analysis has been made in US dollars and assumes current price levels. It is assumed that the operations will get more efficient – although efficiency improvements (as measured by labor productivity and non-revenue water losses) have been estimated very conservatively. The non-revenue water losses were at about 25 percent in 2010 and 2011, but increased to 41 percent in 2012.²³ It is assumed that the TA component and operation contract will help to improve efficiency, especially with regard to improving collection efficiency and will allow for a gradual increase in water and wastewater tariffs with a modest real increase of 1.8 percent per year between 2013 and 2017, and the introduction of a wastewater tariff in 2017 of US\$ 0.20 per cubic meter. With these changes, the utility will be able to see an increase in the operating cost coverage from 91 percent in 2012 to 129 percent in 2020. For the utility, the investments are fully subsidized and hence are not included in the analysis.

²³ We have assumed that the non-revenue water losses in the utility will slightly decrease to around 20 percent in 2020. Yet, in case the 41 percent NRW losses in 2012 are not a temporary phenomenon. Higher tariff increases will be needed to allow the utility to achieve its objectives of increasing the cost coverage.

33. The newly established water and wastewater utility will cover all of its operation and maintenance costs while also generating a small surplus that can be used to pay for the depreciation of assets. This same policy will also ensure that the collected revenues will cover 59 percent in 2012 to 115 percent in 2020 – which means that the utility generates enough cash flow to undertake its basic operation and maintenance whereas the surplus can be used to replace some assets. The financial internal rate of return under these assumptions is 28 percent, and the NPV is US\$ 6.1 million. . Future financial flows of the Water and Wastewater Department are noted in Table 6.4.

34. The analysis is highly sensitive to changes in the key variables is collection efficiency. The switch value for collection efficiency is 83 percent and is the most critical factor in achieving a positive financial cash flow.

Table 6.4 Future Financial Flows of the Water and Wastewater Department

Basic Financial Performance	US\$	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Water sales	US\$/year	5,448,022	5,818,069	5,292,877	7,277,838	7,800,454	8,510,870	9,434,623	10,646,623	10,988,780	11,341,652	11,705,569
wastewater sales	US\$/year				0	0	0	0	1,219,550	1,258,743	1,299,164	1,340,850
Other	US\$/year	896,840	3,037,191	1,564,968	1,873,730	2,126,230	2,025,054	2,038,069	2,102,615	2,169,159	2,237,765	2,308,493
Total income billed	US\$/year	6,344,862	8,855,259	6,857,845	9,151,568	9,926,684	10,535,924	11,472,692	13,968,788	14,416,683	14,878,581	15,354,912
Total income collected	US\$/year	4,860,779	3,946,746	4,428,007	9,151,568	7,040,636	7,807,679	8,866,583	11,239,731	12,058,420	12,917,742	13,819,421
Water imported	US\$/year	3,766,267	3,794,347	3,921,236	3,874,705	4,008,626	4,146,639	4,279,754	4,416,664	4,557,476	4,702,299	4,851,248
Manpower	US\$/year	1,774,817	2,223,273	2,021,694	2,027,719	2,060,703	2,079,305	2,093,201	2,295,421	2,307,734	2,319,176	2,329,692
Electricity	US\$/year	330,677	374,012	310,959	398,017	410,409	423,179	435,496	1,836,863	1,885,311	1,934,936	1,985,765
Chemicals	US\$/year	4,237	4,139	1,792	4,405	4,542	4,684	4,820	290,841	298,276	305,882	313,661
Other	US\$/year	1,381,189	1,250,673	1,296,477	1,357,830	1,387,745	1,418,183	1,446,347	2,367,824	2,406,480	2,445,769	2,485,698
Total O&M expenses	US\$/year	7,257,187	7,646,445	7,552,157	7,662,677	7,872,026	8,071,990	8,259,617	11,207,613	11,455,277	11,708,064	11,966,064
O&M expenses per cum of water	US\$/cum	1.71	1.69	2.10	1.20	1.20	1.19	1.19	1.56	1.55	1.54	1.53
Income billed / O&M costs		87.4%	115.8%	90.8%	119.4%	126.1%	130.5%	138.9%	124.6%	125.9%	127.1%	128.3%
Income collected / O&M costs		67.0%	51.6%	58.6%	119.4%	89.4%	96.7%	107.3%	100.3%	105.3%	110.3%	115.5%