

سلطة المياه الفلسطينية
PALESTINIAN WATER AUTHORITY



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Environmental, Social, and Cultural Heritage Impact
Assessment to Support the Hebron Governorate
Wastewater Management Project



ESCHIA REPORT (EXECUTIVE SUMMARY)

21 Sep 2014



Executive Summary

0.1 General

The project under consideration aims at developing the wastewater management in Hebron Governorate. Hebron city is facing severe environmental, social, and public health problems due to the pollution of wadi as-Samen by raw sewage and wastewater from industries and stone cutting facilities, flowing through the open wadi towards the Green Line.

The project is one of the major infrastructure projects funded by the World Bank in cooperation with the Agence Francaise Developpement (afd). It came as a complimentary to several conducted studies which were support by the United States Agency for International Development (USAID) within the period 2002-2006. The project includes development of a feasibility study and preliminary design for a wastewater treatment and trunk sewer for Hebron, Hebron Governorate. That is to improve the environmental conditions in the area and contribute to minimizing the taxes imposed on the Palestinian Authority by the Israeli Occupation in return of the claimed treatment of wastewater. The proponent for the project is Hebron Municipality, whereas the Palestinian Water Authority (PWA) is managing the project and is the client.

The City of Hebron is served by a combined sewer system with more than 70% of the current population connected to the system. Currently, most of the municipal sewage entering the system from the City and its environs is discharged directly to Wadi as-Samen just south of the City. The area served by the existing sewerage system is also characterized by the presence of many stone and marble-cutting industries which also discharge their wastewater to the sewer system. This leads to high concentrations of sawdust in the wastewater reaching the sewers and eventually the Wadi.

The untreated sewage and wastewater eventually flow along Wadias-Samen south towards the green line, causing adverse environmental impacts to the eastern aquifer and to the communities along the Wadi. This was identified as a serious issue as far back as the 1970's and plans for a regional solution for the wastewater for Hebron city and the surrounding communities were developed but not implemented because of lack of funding.

In response to the urgent need to address this outstanding issue within the Hebron Governorate, the PAW has requested the donor community to mobilize financial and technical support for the Hebron wastewater management project. This Project has an estimated cost of US\$ 35 - 40 million for the first phase and would be financed by a consortium of multilateral and bilateral partners including the afd and the World Bank.

In addition to improving the inadequate management of the sanitation infrastructure in Hebron, the proposed Project aims to achieve the following objectives:

- To provide treatment to wastewater collected in the City of Hebron sewer system so that discharges meet current effluent discharge criteria;
- To protect the environment downstream of the WWTP including the eastern aquifer, from the discharge of untreated wastewater as currently exists;
- To generally improve the health and well-being of the residents along Wadi as-Samen;

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- To provide treated wastewater capable for use in irrigation so as to supplement the current water resources in the area;
- To reduce the annual wastewater treatment charges by the Israeli occupation to the Palestinian Authority (PA).

Environmental, social and cultural heritage consequences for the Hebron wastewater management project are identified and considered. World Bank environmental safeguards, environmental compliance procedures and regulations are adopted, and established to study the reasonably foreseeable significant effects, both beneficial and adverse, of the proposed project.

Environmental compliance involves conducting an Environmental, Social and Cultural Heritage

Impact Assessment (ESCHIA). This ESCHIA is conducted by the Universal Group for Engineering Consulting and Center for Engineering Consulting (CEC), and is subject to the review and approval by several local and international agencies, such as the Palestinian Water Authority (PWA), Ministry of Environment Affairs (MEnA) in addition to the AfD and the World Bank in order to ensure environmental compliance prior to project commencement and during project implementation.

0.2 Regional legal frameworks concerning wastewater reuse and sludge management and reuse and other national and international standards and guidelines

Lesson learned from regional experience (Jordan, Israel and Egypt) was assessed beside the common practice of treated wastewater reuse and sludge management and reuse; the quality standard of different countries within the region was assessed for comparison with the Palestinian standard. In addition, national and international standards and guidelines were reviewed during the course of conduction The study.

0.3 World Bank Safeguard Policies and Guidelines

Among the ten safeguard policies of the WB, four are considered by the Consultant to be relevant to the WBWWPP and have been taken into account during this ESCHIA study:

- Environmental Assessment (OP 4.01)
- Involuntary Resettlement (OP 4.12)
- Disclosure (OP 17.50)
- Cultural Property (OPN 11.03)

Based on the review and consultation with the local community only 9 landowners will be affected by the proposed access road (alongside the Wadi). The nine (9) landowners voluntarily offered their lands located within the Access Road with width of six (6) meters subject to ensure the following benefits to the them as follow:

- a) The Access Road shall be asphalted in six (6) meters width.
- b) The Landowners shall benefit from the road access, the electricity, the water, the effluent, all in accordance based on their actual needs and in accordance with procedures and conditions set out by HM for receiving such services.

In consistency with above, it is confirmed that there are no impacts as per the Bank's Operational Policy 4.12 under the entire associated facility financed by USAID. A confirmation letter from

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HM to PWA confirms that there is no objection from the land owners and that the land is voluntarily agreed with them (attached in Annex VI in this executive summary).

0.4 Project Description

The proposed Hebron wastewater management project constitutes of three phases:

- Phase I: Design and implementation of a wastewater treatment plan, and the design and implementation of a major 1 km long sewer trunk line, to transport wastewater from the sewage network in the city of Hebron down to the location of the proposed WWTP.
- Phase II: reclamation of infrastructure in agricultural land, through re-use of treated effluent and solid waste for agricultural purposes. A reservoir will be built to collect treated effluent to be used for irrigation in the summer season. Approximately, 4,000 acres of agricultural land will be irrigated in the region, which include the plains of Yatta, Wadi as-Sammen, in addition to Al Frejat area in winter season. The second phase also includes the design and construction of water transmission lines from the treatment plant to nearby reclaimed agricultural land.
- Phase III: building the necessary capacity for management, coordination and evaluation of the project by the establishment of a Project Implementation Unit (PIU).

By time a full financial support is secured, only the first phase of the project will be implemented. The project will serve the city of Hebron in the first phase and will later be expanded to serve other communities.

0.5 Project Components

Phase I of the proposed project includes the design of a WWTP for the city of Hebron, in addition to a major sewer trunk line (about 1 km and 1.5 meters in diameter) for the transfer of sewage from the network in the city of Hebron down to the proposed treatment plant site. It is agreed that the access road and the sewer line and the entire required infrastructure will be constructed alongside the Wadi. And the local community (that their lands will be affected) voluntarily provided their lands for this purpose.

The proposed site of the WWTP is located around 4 kilometers to the south from the city of Hebron within its municipal boundaries in Al Hileh area. The proposed site is relatively flat and is subject to flooding in winter (Flood Plain). The location is not directly surrounded by residential areas, where the nearest residential community is about 400 m areal from the proposed site for the treatment plant. The proposed site includes about 110 dunums of agricultural land owned by the PWA.

The proposed WWTP will consist of the following main parts:

- Screw Pump
- First Screening
- Grit Chamber
- Primary Sedimentation Tanks
- Basins Ventilation Aeration Tanks
- Secondary Sedimentation Tanks

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- Secondary treatment sludge Thickener Secondary Sludge Thickener
- Anaerobic Digester
- Sludge Dewatering
- Effluent Building
- Gas Complex
- Maintenance and Administration Buildings

The sewer trunk line will be designed to flow by gravity where possible, and will be lined along the course of the valley until the proposed site for the WWTP. The design will be based on the amount of wastewater flowing from the sewage network of the city of Hebron, and will take into account the storm water that flows directly into the network.

The WWTP will be designed to serve the residents of Hebron initially by the population projections for year 2027, which is about 260,000 beneficiaries equivalent to 15,000 m³ in the first phase. In the future, the project aims at serving the neighboring communities of Yatta, Al Fawwar Camp, Hadb Al Fawwar, Halhoul, Bani Na'im, Al Rihyyeh. It is important to note here that the industrial activities in the southern region of the city of Hebron, such as stone cutting facilities, slaughterhouses and tanneries will not be connected to the proposed treatment plant.

The WWTP will be expanded as required resulting from expanding the service to the communities around the site. The expansion will include pumping stations and sewer systems for communities that will be served in the future as well as carrier lines to include other areas that cannot be served by gravity (like some areas in Yatta). The number of treatment units at the WWTP will also be increased, such as sedimentation ponds and sludge thickeners.

The World Bank and the French Development Agency (afd) are funding the studies and design phases, whereas the tender for the construction of the trunk line and the WWTP will be released in 2013, with expected period for construction of two years.

0.6 Scoping

Based on the scoping on environmental, social, and culture heritage impacts, negative impacts are estimated to be minor during construction works and system operation. However, impact mitigation measures shall be required for the following issues anticipated during main trunk sewer installation and construction works:

- Countermeasures for noise/vibration and traffic hazard during installation works.
- Preservation measures for cultural ruins and cultural heritage values and sites.
- Countermeasures for dust hazard during project installation works.
- As generation of considerable amount of construction and solid waste is anticipated, solid waste management plan shall be prepared.
- Measures for enhancing public awareness and social cooperation as a direct impact of the project.

The followings are work items for Environmental, Social, and cultural Heritage Consideration covered by the ESCHIA:

- Summarization of detailed current situation and future development in environmental and social conditions.

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- Survey on cultural heritage baseline data and impact assessment.
- Survey in related social characteristics and public satisfaction.
- Monitoring scheme for environmental, social, and cultural heritage.

0.7 Prediction and Evaluation of Impacts

Based on the scoping of environmental and social impacts, there are some anticipated negative impacts during construction activities and system operation. Impact mitigation measures will be required during installation and construction activities, as well as during operation. The scoping (hearing) session that was held has raised several environmental, social, and cultural heritage aspects that has been tackled and assessed in this ESCHIA. A detailed discussion of these aspects has been presented in the ESCHIA Scoping Report, submitted as part of the ESCHIA consultancy assignments.

Anticipated impacts during construction include noise/vibration, dust and traffic hazard. Soil erosion and generation of solid waste are also anticipated during excavation and construction activities. Infrastructure services such as water and road access may be interrupted temporarily during this period, but any interruptions should be minimized by applying appropriate mitigation measures and best construction practices. Impacts on ecological, historical, and archeological resources are expected to be minor. If these resources are impacted during construction activities, they will be addressed by consultation with the Ministry of Tourism and Antiquities (MoTA). Furthermore, potential impacts on every element was presented and followed by mitigation measures that prevent or reduce these predicted impacts.

0.8 Required Mitigation Measures

Potential negative impacts, although expected to be minor, may affect some environmental and natural resources. Appropriate mitigation measures will be required to be implemented by the construction contractor, Hebron municipal council, or relevant stakeholders in order to avoid or minimize these potential impacts during the construction and operational phases.

Mitigation measures during construction will address impacts caused by noise, dust, and machinery emissions, and traffic disruptions during installation of the trunk line and WWTP facilities. Activities involving heavy machinery will be restricted to normal working hours of 06:00 to 18:00. The construction schedules will be announced in advance of any activities. Dust minimization will require use of best construction practices such as mechanical construction, wetting of excavated stockpiles and equipment routes, as well as utilization of proper maintained and monitored vehicles and machinery to minimize air emissions. The construction contractor will also be required to temporary traffic control devices, proper signage, and appropriate safety measures.

In addition, proper storage and disposal of construction wastes and excavated material will be required to minimize environmental impacts. Construction waste and debris will be transported to an approved disposal site in coordination with Hebron municipal council. Appropriate storage away from drainage paths of surface water will minimize the formation of stagnant water bodies (during winter) that produce unpleasant odors and attract disease vectors.

High quality soils will be stored properly for use in reclamation of agricultural lands under the direction of the Ministry of Agriculture (MoA). During the design process, prior to implementation, storage site plans will be located, designed, and submitted for approval.

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The safety and well-being of workers requires maximum compliance with procedures that minimize exposure of workers to heat, noise, dust, and solid and hazardous waste. Abiding by Palestinian employment and wage guidelines of the Palestinian Labor Law will also be a requirement.

Nuisance from noise emissions during the operation of the WWTP facilities to the surrounding areas will require implementation of proper mitigation efforts such as sitting and fences. Noise and other safety hazards will require implementation of occupational health and safety measures and proper training of workers and operators.

In order to minimize potential social, economic, or cultural heritage damage, it is to outline, submit, and implement a protection and safety plan to be prepared by the contractor considering the mitigation measures addressed in this ESCHIA. The plan shall utilize industry standard construction zone, safety practices, and equipment and shall include solid waste management plan. This has to be coordinated with the officials of Hebron municipality. The plan should also consider storing hazardous materials, if any, in special containment sites that are designed to confine these materials.

0.9 Environmental, Social, and Cultural Heritage Management Plan

The Environmental, Social, and Cultural Heritage Management Plan (ESCHMP) identifies feasible and cost-effective measures required for the environmental monitoring of key environmental aspects of the project during project implementation. The ESCHMP also identifies monitoring objectives, specifies the type of monitoring, and stipulates mitigation measures to address impacts as identified by the ESCHIA study. The ESCHMP is designed to monitor the effectiveness of the management actions. A component of the plan is to establish monitoring programs to evaluate the performance of the project against the goals of sustainable development: economic growth, social equity, and ecological integrity. Appropriate, measurable, defined, and valid indicators shall be identified, developed, and agreed upon by stakeholders. The ESCHMP will include regular auditing and reporting, and lead to the refinement of targets and indicators. Monitoring results will be made publicly available.

The main objectives of the ESCHMP are to:

1. Implement all recommendations and mitigation measures shown in the ESCHIA report, and any future needs that might arise.
2. Implement and enhance all laws and regulations related to labor affairs and benefits.
3. Inform workers regarding onsite job risks.
4. Enforce equal opportunity employment for equal qualifications.
5. Implement all environmental laws and regulations of the Palestinian Authority.
6. Supervise all activities that might affect the environment aspects of the community.
7. Establish a monitoring policy and an inspection program to cover environmental contaminants or those that might adversely affect the environment of the area.
8. Implement immediate mitigation measures wherever appropriate. Emphasis should be on the protection and conserving valued environmental components. Workshops and training sessions should be held regularly on various fields related to project activities.
9. Inspect and supervise environmental conditions at the project area.
10. Take corrective steps to mitigate environmental impacts.

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In addition, the ESCHMP will:

1. Assess effectiveness of the proposed mitigation measures in the ESCHIA.
2. Detect environmental contamination as early as possible, to ensure the implementation of the management plan by the project operators.
3. Ensure compliance with this ESCHIA and regulatory authorities.
4. Prepare periodic reports on the environmental status of the project and the community, including activities or actions taken during the year and analysis and evaluation of results and present recommendations, to improve or develop better approach.

The ESCHMP provides expected impacts of the proposed project. Mitigations measures to be implemented during the construction and operational phases are also listed. Environmental mitigation and monitoring actions are presented in a matrix format. The matrix includes an identification of the issues, mitigation measures, and responsibility for executing the mitigation measures. The ESCHMP is a tool for environmental auditing and compliance, and if properly applied, will ensure the success and sustainability of the project. In Palestine, the USAID projects (including this project) is being supervised through a consultant who have safe guard engineer to follow the studies, report etc.

0.10 Monitoring Plan

The Environmental, Social, and Cultural Heritage Management Plan (ESCHMP) identifies the feasible and cost-effective measures required for the monitoring of key environmental, social and cultural heritage aspects of the project during project implementation. The ESCHMP identifies monitoring objectives and specifies the types of monitoring with regard to the impacts assessed in the ESCHIA report. During monitoring, these mitigation methods will be continuously checked for improvements to be made where necessary.

The ESCHMP is presented in Annex II, where potential impacts against environmental, social and cultural heritage issues are listed. The ESCHMP also provides the required mitigation measures and the institutional and stakeholders responsibilities. In general, the responsible parties for environmental management during construction will be the construction contractor, Hebron Municipality, Palestinian Water Authority (PWA), Ministry of Tourism and Antiquates (MoTA), Ministry of Agriculture (MoA), Ministry of Public Works and Housing (MoPWH), the Police and the Consultant, while the responsible parties during system operations will shift to the Hebron Municipality and PWA. The Ministry of Environment Affairs (MEnA) is responsible for environmental approvals and environmental monitoring, inspection and auditing. MEnA is to make sure that all the required mitigation measures are properly implemented. It is recommended that various institutions and stakeholders decide on and agree to the suggested frequency and execution of monitoring at all phases of the project.

An example of a management and monitoring action includes the incorporation of mitigation measures and environmental controls in the construction contractor's bid documents, stipulating the implementation of environmental standards and regulations in terms of noise protection, dust reduction, and natural resources preservation. Moreover, public communication should be maintained and well documented over the construction and operation phases of the project in order to ensure proper community relations.

0.11 Recommendations

The proposed Hebron WWTP project is suitable from the technical and environmental perspectives. The project does not represent a significant threat to the environment provided that the proposed mitigation measures presented in this ESCHIA report are implemented in accordance with applicable regulations and guidelines, and that the ESCHMP is applied with care.

The long-term benefits of the WWTP project include improving the hygienic and health conditions for Hebron and the villages and communities located near Wadi as-Samen. These will include the public health and socio-economic conditions; improvement of the natural environment; improvement of social practices; and improvement of wastewater and sanitation scheme.

The ESCHIA concludes that the environmental, social, and cultural heritage impacts of the Hebron WWTP project can be maintained within acceptable levels, provided that the required mitigation measures are incorporated and that the environmental, social, cultural heritage and safety management of the project facilities are addressed as required.

The ESCHIA has also concluded that OP 4.12 is not triggered. It is not expected that the project managers would need to acquire land or resettle households. Accordingly, there are no impacts on properties. Land allocated for construction of the WWTP is already available. The main trunk line will be constructed along proper located rout on the edges of the wadi. This was confirmed through the visit of safeguards mission to the site on June 2014.

A further recommendation in this regard is to have a grievance redressal system as part of the Water and Wastewater Unit (WWU) that is recommended to be established in Hebron Municipality for managing the WWTP. The system should function as to receive and address public complaints. Then the public can have an address to raise their complaints and/or objections against any negative impact during construction and/or operation of the HWWTP. All complaints should be recorded along with the actions and remedial measures applied. The officer in charge of the grievance system should have the authority to take and demand the remedial measures.

It is recommended that this ESCHIA is approved and that the environmental approval for the construction of the proposed Hebron WWTP and trunk line project is issued. The PWA and Hebron Municipality are committed to the standards and requirements for the protection of the environment and declare that they are committed to the required mitigation measures.

0.12 Conclusions and Overall Assessment

This ESCHIA report summarizes the results of the impact assessment for the construction of the HWWTP and Trunk Sewer project. It includes an overview of the key environmental, social and cultural heritage impacts associated with the construction and post development of the WWTP of Hebron.

The ESCHIA has investigated and assessed the significance of the predicted positive and negative impacts associated with the proposed HWWTP project. These impacts, along with the wider environmental issues will need to be weighed up in the decision-making process. No negative impacts of high significance were identified, provided that all mitigation measures are applied effectively.

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No significant negative cumulative impact is expected to be caused by the development of the HWWTP project. The construction of the wastewater treatment plant and trunk sewer is by itself a positive cumulative impact as it will improve the environment and protect the groundwater aquifer. It will also enhance the social practice of wastewater disposal and will develop a focused and properly operated system.

The ESCHIA concluded that providing the recommended mitigation measures are incorporated and the environmental, social, health and safety management of the facilities are addressed in the ways described within this report, then associated environmental, social and health impacts can be maintained within acceptable levels.

In order to ensure effective application of the management actions and monitoring proposed in this ESCHIA, a comprehensive ESCHMP is prepared and annexed to this report.

Recommendations are provided for the best practicable environmental option, mitigation and management actions, as well as suggested monitoring during construction and post development of the HWWT project.

It is recommended that this ESCHIA is approved and that the environmental approval for the construction of the proposed HWWTO and trunk sewer is issued. The PWA, Hebron Municipality and the nearby communities and stone cutting industries are committed to the standards and requirements for the protection of the environment and declare that they are committed to the required mitigation measures addressed in this ESCHIA.

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0.13 Annexes

Annex I: Summary of Potential Impacts and Proposed Mitigation Measures

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Category	Impact (+,0,-)	Potential Impacts	Impact Significance	Mitigation Measures
Impacts During Construction				
Physical Environment				
Land Use and Planning	0	Land use where trunk sewer will be laid will only be affected temporarily.	Not Significant	Application of proper engineering practices during Trunk Sewer construction.
	-	WWTP is located in agricultural areas. The land is already allocated and owned by PWA. It will be converted into a public facility.	Low Significance	PWA and Hebron Municipality shall secure land and obtain change of land use permits or easements from agencies having jurisdiction over the facility locations.
				Sludge drying beds technology may be replaced by compacting technology.
				Landscape design inside the WWTP should preserve the general characteristic of the lost green area.
Geology and Seismicity	0	Geology must be suitable to support desired construction elements.	Not Significant	A detailed geological and foundation analysis has been conducted. No unique geologic or physical features will be altered.
	-	Potential damages from earthquakes to project facilities could only cause hazardous conditions locally (WWTP process failure, storage facility damage, etc.).	Low Significance as mitigated	Facilities have generally been sited far from habitation and will be designed and constructed in accordance with Palestinian and International building codes and regulations.

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				Damage will be repaired by the regional utility or any other responsible party soon after the possible seismic event occurs.
				A detailed geological and foundation analysis will be prepared and incorporated into project plans.
Soil	–	Soil will be disturbed during construction of the project facilities and will potentially increased erosion.	Low Significance	Standard measures to minimize soil erosion during construction will be included in the plans and specifications for project elements.
Air Quality and Odors	–	Air pollutants (mainly dust) will be emitted temporarily during construction. Dust generated during installation of pipelines, in town is a nuisance for residents, and dust generated during construction on WWTP site will cause dust to accumulate on adjacent vegetation.	Low Significance, localized. Well reduced by mitigation.	Spoil piles shall be transported daily in covered trucks. Mechanical excavation should be used where possible. Best construction practices will be employed; water spray and proper fencing will be applied to minimize dust spread out.
	–	Limited odors maybe generated during construction out of construction vehicles.	Low Significance, localized and temporary.	Assure the use of well-maintained construction equipment.

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Surface Water Systems	-	Stagnant water bodies may be formed as a result of accumulation of excavation material on storm water courses and surface water drainage areas	Medium Significance, minimized.	Continuous clearance of wadis and storm water courses.
		These stagnant water bodies resulting from blocked drainage paths produce algal blooms, anoxic sediments and bad odors which will become a nuisance for the surrounding area.		Avoid forming stagnant water bodies during construction by keeping drainage and storm water paths clean and clear.
Solid Waste	-	Poor management and compilation of construction waste may cause pooling and flooding, as well as an unpleasant	Medium Significance, minimized by mitigation.	Unusable construction waste should be moved, removed and disposed at an approved dumpsite in coordination with
		visual impact		Hebron Municipality. Reusable piles produced from excavation should be properly stored for refilling after pipelines are installed.
Built Environment				
Infrastructure and Public Services	-	Construction will temporarily disrupt traffic patterns in the vicinity of project facilities. Most roads are lightly traveled.	Medium Significance, minimized as mitigated.	Potential access restrictions during construction will be localized and temporary, but the Contractor will notify receptors at least one week in advance of the schedule and duration of construction. The Contractor will also coordinate with providers of fire and police protection and hospitals to ensure continued access during construction.

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	0	Workers' commuting to site during construction is minimal. Impact will be negligible on traffic.	Not Significant	No mitigation needed.
	+	Wastewater will be pumped to the WWTP instead of open disposal in wadis.	Highly Beneficial	No mitigation needed.
	-	Temporary impacts to services and utilities during construction and during installation of trunk sewer.	Medium Significance	Citizens, businesses and public facilities will be informed of the cutting schedule. Emergency service providers shall be provided with contact names, locations.
Socio-Economic	+	Construction will create a significant number of new jobs in the area.	Medium Significance, beneficial	
	+	Purchase of construction material and rent of construction equipment. Also purchase of services and commodity in the area by contractors and workers is possible.	Beneficial	Assure purchase of high quality material; improve local economy by involvement of local contractors.
	-	Nearby villages may not be accustomed to large infrastructure project of this type that may cause nuisance to the community.	Low Significance	Proper engineering practices and proper monitoring of construction works.
Public & Occupational Health	-	Average level of hazard to construction workers.	Low Significance as mitigated	Contractor will adhere to health and safety regulations. Contractor is required to develop proper emergency responses in advance. First aid equipment must be available on site.

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	-	Potential health hazards on residents during construction, i.e. accidents at excavation sites.	Low Significance as mitigated	Provision of awareness and instruction signs by contractor is required.
Noise	-	Construction noise will be localized at the WWTP site and temporary on sensitive receptors of residences and businesses will be affected during installation of conveyance trunk sewer.	Low Significance as mitigated	Include noise mitigation requirements in project bid documents. Schedule construction activities to avoid sensitive seasons, days, or hours (limit to Saturday Thursday, 06:00 to 18:00 or daylight hours), inform residents and businesses near alignment of construction duration and schedule. Provide noise protection gear for construction workers and operators.
Historical and Cultural Heritage	-	No sites were found on the proposed project sites in literature searches. Archeological sites are not expected, but may be potentially revealed during construction activity.	Potential High Significant	Contractor will have to continuously monitor any archaeological evidence revealed during construction and is required to immediately inform the MoTA for appropriate protection procedures.
Ecology	0	From literature review and on-foot reconnaissance no sensitive terrestrial species or habitats exist on sites.	Not Significant	None required.
	0	No established nature reserves, protected areas, or national forests would be affected.	Not Significant	None required.

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Category	Impact (+,0,-)	Impact Discussion	Impact Significance	Mitigation Measures
Impacts During Operation				
Physical Environment				
Land Use and Planning	0	WWTP is very far from residences, schools, hospitals, police and fire stations, and mosques.	Not Significant	None required.
	+	Irrigated agriculture will be expanded through reuse. Reuse of treated wastewater will increase agricultural rate and may change agricultural pattern into trees and fodder.	Beneficial, Highly Significant	Binding to the Palestinian standards of treated wastewater reuse.
	-	Treatment and storage facilities disrupt natural landscape.	Low Significance if mitigated	Operators used to maintain structures, observe good housekeeping procedures, keep facilities and sites clean and well cared for. Activities will be described in the O&M manual.
Soil	-	Effluent reuse will increase the salt and chloride content of agricultural soils and underlying strata.	Highly significant	Reuse system requires change of agricultural patterns in the area to fodder and trees that are tolerant to high nitrate levels. Irrigation by treated effluent must follow the Palestinian standard 742 in order to protect the nutrient levels in soil.
Generated Solid Waste and Sludge	-	Sludge will be generated from treatment process as dewatered in drying beds	Low significance as mitigated	Sludge shall be transferred to Al-Menya landfill, if not reused.

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		Discharge of treated wastewater to the soil surface for irrigation purposes will increase soil salinity. Salt built-up dispersion in soil, reduced infiltration, and hydraulic conductivity that reduced soil productivity.	Medium significance	Applying greater volume of irrigation water than crop requirement can prevent salt built-up in shallow soils.
	-	Leachate from sludge may impact water	Less than	Sludge will be transferred to Al-
		quality and the environment.	significant as mitigated	Menyalandfill after being dried. Environmental mitigation elements in AlMenya landfill (lining, leachate disposal, and consideration of environmental issues) have been incorporated and O&M requirements, project plans and specifications. O&M training will be provided.
Noise	-	WWTP is in a relatively low area that would limit noise pollution. The only affected personnel are workers on the site. Potential impact may be caused if construction permissions are given near the WWTP.	Low Significance	Workers on site will wear earmuffs or ear plugs as needed. Construction permissions should not be given within 500 m radius from WWTP.
Air Quality and Odors	+	Odors already exist from discharge of raw sewage in public grounds and agricultural land.	Highly Significant	
	+	Conveyance of raw sewage to WWTP will be through buried pipes.	Highly Significant	Buried pipes will follow Palestinian Standards, and will be placed below fresh

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				water network pipes to avoid leakage.
	-	Aeration basins and sludge drying beds may create odors as algae blooms decay.	Not significant with mitigation	A management plan shall be elaborated by the construction designer to control odors. Natural barriers of trees and consideration of wind direction should be included in the design.
	-	Screening/grit units will be at the WWTP plant.	Low significance with mitigations	Use of liquid chlorine to avoid gas release. Standardized handling of operations and procedures. Operations equipment (including pumps and motors) will be selected upon energy efficiency and low-emission factors. The screening/grit station will be equipped with odor controls; WWTP grit and
				screenings will be transferred away to AlMenya sanitary landfill.
Groundwater Aquifer System	+	In the absence of the project, groundwater quality has the potential to become significantly degraded. The project aims to reduce or eliminate the infiltration of raw domestic sewage towards the groundwater.	Beneficial, Highly Significant	The treatment facilities should be constructed to the standards and should be sealed and not allow any seepage or overflow of the untreated sewage to the nearby areas. Regular testing of groundwater quality.

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	-	Discharge of treated wastewater to the ground surface either for irrigation purposes or disposal in the nearby valley may have the potential to increase level of salinity, nitrogen.	Highly Significant, minimized by mitigation.	Application of greater volume of water than that of crops requirement. Access amount of water will bypass the root zone and percolate to reach the saturated zone.
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Built Environment				
Impact in Agricultural Activities	-	Use of treated wastewater presents potential risk to farmers by direct contact.	Highly Significant Minimized by mitigation.	Irrigation activities will be conducted in accordance with all applicable standards covering worker safety, public health, environmental health and irrigation methods. Compliance with Palestinian Standard 742 will be assured. An agribusiness investment will be encouraged to help local farmers gain experience with wastewater irrigation.
Infrastructure and Public Services	0	Sludge will be reduced in volume by drying, so that hauled sludge from WWTP will be minimized, thus minimize the frequency of transporting to the landfill.	Not Significant	Sludge transporting vehicles will be covered and will follow.
	-	Possible leakage of wastewater trunk sewer that cannot be directly indicated.	Low Significance	Accidents of leakage will be minimal and could only occur over sever seismic activity or with old worn out pipes. Best engineering practices will be employed during installation of trunk sewer under the requirements of PA construction

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				regulations and material standards.
	+	Roadways will be designed and aligned to provide access from existing roads to the treatment plant site. These roadways will be paved by asphalt.	Highly significant	Improve access to surrounding agricultural land.
	0	Transporting produced sludge (2-3 ton/day) by trucks to the landfill for disposal has a negligible impact on traffic.	Not Significant	Trucks are maintained and covered. Adhere to the speed limits and traffic regulations.
	0	There will be no overload from the collection system and the WWTP on public services, and therefore the impact on those utilities will be negligible.	Not Significant	No mitigation needed.
	+	Increased local water supplies for irrigation.	Beneficial	No mitigation needed.
	-	Energy needs increase compared to existing conditions for plant operation and pumping reuse water.	Low Significance	Use energy efficient technology in treatment and pumping. An alternative source of energy should be provided in case of emergencies such as generators.
Socio-Economic Public and Occupational Health	0	Population is growing in the absence of waste management The Project will not induce or alter population size, distribution or density nor affect	Not Significant	None required. No relocation would be required due to land acquisition for facilities.

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		housing.		
	+	If project is implemented and operated as designed, it would improve the existing and future quality of life in the project area with respect to public	Beneficial, Highly significant	
		health and income generation.		
	+	Treated wastewater can be used by stone cutting factories, increasing feasibility of the business.	Beneficial, Highly significant	
	+	The collection and treatment system fees will be cheaper than the costs of traditional discharge means of cesspits.	Highly Beneficial	
	+	Providing treated water for agriculture will save on water purchasing; encourage investment in land reclamation in agriculture and job creation.	Highly Beneficial	
	+	5-10 permanent jobs will be created on site of the WWTP when operated.	Low Significance	
	+	The project will significantly reduce an existing and future health hazard created by seepage of raw sewage.	Highly significant	

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	-	Mechanical dangers and use of hazardous chemicals in WWTP imposed on operating workers.	Low significance as mitigated	Operation and Management (O&M) manual contains industry standards for chemical handling. Worker require appropriate training program.
	-	New mosquito habitat created in open basins, danger of vector-transferred diseases.	Highly Significant	Construct large sludge drying. Keep bank slopes free of vegetation.
	-	Health effects may occur to farm workers and their families could include exposure to pathogens that may remain in water after inappropriate treatment and disinfection.	Medium Significance	The proposed reuse demonstration project will include training for farmers, workers and others of the safe use of reuse water.
	-	Miss-use of WWTP facilities and stored water.	Medium Significance	Signage will be provided in Arabic and English to indicate that the stored water is
				not potable or safe for swimming, and all hose bibs with reclaimed water will be similarly tagged to indicate the water is not safe for drinking.
Ecology	+	The open basins may attract and create habitat for birds flying over the region.	Medium significance Need protection measures	The O&M Manual of the WWTP will need to include security measures to protect birds. Hunting is highly restricted and all birds are protected. Therefore the WWTP requires proper fencing.

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Emergencies	-	Illegal connection of connection of stone cutting and other industrial facilities to the network overloads the WWTP, clogging the system and increase the organic load in the system causing environmental damages.	Medium Significance	Legislative measures and continuous controlled monitoring should be enforced.
	-	Discharge raw wastewater towards the nearest valley and agricultural land at times of technical treatment faults or emergency cut of electricity, etc.	Potential High Significance	The provision of a storage basin that would allow the insufficiently treated water to be stored to prevent its escape into the environment. This water could be chlorinated with hypochlorite in the reservoir in emergency circumstances to reduce public health risk.
	-	Spillages of fuel during use of electrical generators in emergencies.	Medium Significance minimized by mitigation	Careful handling and prompt cleaning of spillages. Secondary catchment and impervious surfaces under fuel storage tanks can contain spills and reduce or eliminate potential leakages to soil and groundwater.

Annex II: Environmental Management and Monitoring Plan (EMMP)

The EMMP is designed to monitor the effectiveness of the management actions. A component of the EMMP is to establish monitoring programs to evaluate the performance of the project against the goals of sustainable development: economic growth, and ecological integrity. For this purpose, appropriate, measurable, defined, and valid indicators will be identified, developed, and agreed upon by stakeholders. The EMMP will include regular auditing and reporting, and lead to the refinement of targets and indicators. Monitoring results will be made publicly available.

The Main Objectives of the EMMP are:

1. Implement all recommendations and mitigation measures shown in the ESIA report, and any future needs that might arise.
2. Implement all environmental laws and regulations of the Palestine Authority.
3. Supervise all activities that might affect the environment.
4. Establish a monitoring policy and an inspection program to cover environmental contaminants or those that might adversely affect the environment of the area.
5. Implement immediate mitigation measures wherever appropriate. Emphasis should be on the protection and conserving valued environmental components. Workshops and training sessions should be held regularly on various fields related to project activities.
6. Inspect and supervise environmental conditions at the WWTP.
7. Take corrective steps to mitigate environmental impacts.
8. Attend workshops or seminars on topics related to the wastewater collection and treatment system.
9. Adopt waste minimization and recycling strategies.
10. Prepare emergency plans to protect the public, the workers, and biodiversity.

In addition, the EMMP will:

- Assess effectiveness of the proposed mitigation measures in the ESCHIA. Detect environmental contamination as early as possible, to ensure the implementation of an environmental management plan by the project operators.
- Ensure compliance with this EA and regulatory authorities. Prepare periodic reports on the environmental status of the project, including activities or actions taken during the period and analysis and evaluation of results and present recommendations, to improve or develop better approach.

The implement of the EMMP measures involved in many units, thus the sources of funding are different and most environment protection activities are engineering measures. Therefore, the fund should be included into engineering cost and offered by project contractors and operators. The costs should be nailed down and listed in their tendering documents. The fund of EMMP is mainly used in the environment management during construction period including environment monitoring, environment supervision, personnel training and operation of environment management organizations, as well as some the risk prevention cost.

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<i>During Construction Phase</i>					
Environmental Element	Potential Environmental Impacts	Proposed Mitigation Measures	Monitoring	Institutional Responsibilities	Monitoring Frequency
Air Quality and Odors	Air pollution caused by emissions and exhaust from vehicles and construction machinery. Also, the dust plumes from the excavation and finishing activities. Limited odors maybe generated during construction out of construction vehicles	<ul style="list-style-type: none"> • Vehicles and construction machinery should be required to be properly maintained and to comply with relevant emission standards. • Spoil piles shall be transported daily in covered trucks • The vehicles, in particular, the trucks should not be over loaded to minimize exhausts emissions • Water spray of the construction site and the stockpiles of the excess cut materials to minimize dust • Controlling the speed of the transporting vehicles, selecting transportation routes to minimize dust impact on sensitive receivers, and washing trucks tires before leaving the construction site. • Proper scheduling and monitor of any risky activities such as excavation and backfilling. • Mechanical excavation should be used where possible and best construction practices will be employed. • Cease earth-moving activities on days when wind gusts exceed 40 km per hour • Assure the use of well maintained construction equipment 	<ul style="list-style-type: none"> • Ensure that mitigation measures are incorporated into bid documents. • Contractor shall implement air quality mitigation measures 	Contractor, Hebron Municipality, PWA, MoT, MoPWH, Police.	Weekly

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Soil	Soil will be disturbed during construction of the project facilities and will potentially increased erosion.	<input type="checkbox"/> Soil erosion (and dust) should be minimized at construction sites by covering spoil and fill piles, in addition to applying other mitigation measures. This requirement should be incorporated into project plans and specifications.	<input type="checkbox"/> Review of bid documents to ensure that applicable codes and regulations	Contractor, MoA, Hebron Municipality, PWA.	Once during the construction phase and annually during
		<input type="checkbox"/> Suitable disposal sites should be identified for excess material from excavating pipeline benches for conveyance pipelines, from site grading and from excavation of WWTP.	are incorporated, inspection during construction to ensure that measures are implemented. <input type="checkbox"/> Contractor shall present written description of proposed debris and soil disposal site for review and approval.		operations
Surface Water	Stagnant water bodies may be formed as a result of accumulation of excavation material on storm water courses and surface water drainage areas.	<input type="checkbox"/> Continuous clearance of wadis and storm water courses.	<input type="checkbox"/> Ensure that mitigation measures are incorporated into bid documents.	PWA, MEnA, Hebron Municipality.	<input type="checkbox"/> Monthly

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Ground Water	Spillage of raw sewage and oil from construction equipment to the ground water systems either in the saturated or unsaturated zones	<ul style="list-style-type: none"> • Continuous cleaning of the construction site. • Construction of temporary septic tanks when needed. 	☐ Ensure that mitigation measures are incorporated into bid documents.	PWA, MEnA, Hebron Municipality.	Monthly
Cleanness of the Construction Site and the Generated Wastes	The construction camps could be sources of solid waste, debris, and waste oil from machinery. Wastewater from the	<ul style="list-style-type: none"> • Disposal of the generated solid waste should be timely cleaned up and stored in closed containers. Disposed materials should be properly compacted and stabilized. • Construction spoils and rocky materials could be used by local people on a 'take for free' basis. 	☐ Ensure that mitigation measures are incorporated into bid documents.	Contractor, Hebron Municipality, PWA, MEnA.	☐ Daily Weekly or monthly depending on the
	camps could create new pollution sources. Construction spoils and rocky materials will be generated. Excavated materials generated by construction and demolition activities.	<ul style="list-style-type: none"> • Sewage and other wastewater from construction camps should be collected and treated using septic tanks before being discharged. • Burning of construction waste should be prohibited. • Construction waste should be promptly removed from the construction sites. • The waste transportation vehicles should not be overloaded and should be covered. 			volume of the work

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<p>Ecology</p>	<p>Affecting trees, rare or endangered species living within the construction area.</p>	<ul style="list-style-type: none"> • Implementing the resettlement plan for the flora at site. • Uprooting and replanting the trees. • The O&M Manual will include security measures to protect the birds and potential encounter with wolves and foxes. Bird, wolf, and fox presence should be monitored. Hunting is highly restricted and all migratory birds, wolves and foxes are protected. 	<p>□ Ensure that mitigation measures are incorporated into bid documents.</p>	<p>Contractor, Consultant, Hebron Municipality, PWA, MEnA, MoA.</p>	<p>□ weekly during active flora resettlement and monthly otherwise</p>
<p>Land Use and Planning</p>	<p>Trunk sewers will be buried; land use where sewer will be laid will only be affected temporarily. WWTP is located in bare land owned by PWA.</p>	<ul style="list-style-type: none"> • Application of proper engineering practices during collection system construction • The PWA and Hebron Municipality shall secure land acquisition and obtain change of land use permits or easements from agencies having jurisdiction over the facility locations. • Landscape design inside the WWTP should preserve the general characteristic of the lost green area. 	<ul style="list-style-type: none"> • PWA negotiates easements and acquisitions • Contractor must provide written documentation of permissions from all affected agencies • Contractor must present written documentation of permissions from all affected property owners. 	<p>PWA, Hebron Municipality.</p>	<p>Once during the preparation and once prior to the start of construction phases</p>

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<p>Aesthetic</p>	<p>Change in landscape character from site construction</p>	<ul style="list-style-type: none"> • Leveling and site preparation should be monitored; no old waste should be spilled. • Conduct further survey to include local geology. • Planting trees and improving the landscape. The design should be environmentally friend, by considering green areas. • Maintain structures, observe good housekeeping procedures keep facilities and sites clean and well cared for; incorporate in O&M Manual. 	<p>□ Periodic inspections by MEnA</p>	<p>Consultant, Contractor (in accordance with contractual obligation).</p>	<p>Weekly during the active construction phase and monthly otherwise</p>
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<i>Post Development Phase</i>					
Environmental Element	Environmental Impacts	Proposed Mitigation Measures	Monitoring	Institutional Responsibilities	Monitoring Frequency
Water Resources, Water supply	Increase in water demand. Impact on the water resources.	<ul style="list-style-type: none"> • The design and the implementation should comply with the local and international codes. • Water storage reservoir to meet the demand for several days. • Supply the project with water. • Monitoring of GW quality and the impact of the improved WW treatment 	<ul style="list-style-type: none"> • Ensure that mitigation measures are incorporated into bid documents. • Monitoring program applied 	Hebron Municipality, PWA, Consultant.	semiannually

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<p>Wastewater (effluent) and Reuse</p>	<p>Impact on public health (specifically farmers by direct contact) Impact on soil Impact on water resources</p>	<ul style="list-style-type: none"> • Treatment should comply with the required standards for reuse in agriculture. • Irrigation activities will be conducted in accordance with all applicable standards covering worker safety, public health, environmental health and irrigation methods. Compliance with Palestinian Standard 742 will be assured. An agribusiness investment will be encouraged to help local farmers gain experience with wastewater irrigation. • Reuse in cocked-eaten agriculture and landscaping. • Raise the awareness of the farmers towards reuse. • Reuse sludge during winter time (storage and loading station). • Include an in-line filtration system to remove algae pre-distribution or provide irrigation application system suitable for higher TSS. • Educate the farmers of public health. • Regular health checks. • Regular water and soil testing. 	<ul style="list-style-type: none"> • Annual soil testing • Periodic inspections and laboratory analysis of effluent quality and crops. 	<p>Hebron Municipality, PWA MEnA, MoH.</p>	<p>Bi-monthly</p>
<p>Soil</p>	<p>Effluent reuse will increase the salt and chloride content of agricultural soils and underlying strata. Impact of increased Nitrate level</p>	<ul style="list-style-type: none"> • Reuse system requires change of agricultural patterns in the area to fodder and trees that are tolerant to high nitrate levels. Irrigation by treated effluent must follow the Palestinian standard 742 in order to protect the nutrient levels in soil • Leaching as part of reuse system to maintain soil productivity 	<ul style="list-style-type: none"> • Annual soil testing • Periodic inspections and laboratory analysis of crops 	<p>PWA, MoA, farmers</p>	<p>annually</p>

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Wastewater	Bad odor emissions, groundwater aquifers pollution and several health disease outbreaks may occur.	<ul style="list-style-type: none"> • The design and the implementation of the sewer lines should comply with the local and international codes. • Conduct regular preventive maintenance. • Regular spraying of insects, flies and mosquitoes, especially during summer. 	<input type="checkbox"/> Ensure that mitigation measures are incorporated into bid documents.	Hebron Municipality	Monthly
Solid waste generation and service	Leachate from sludge may impact water quality and the environment. The generated solid waste quantities are a new load to the solid waste management system of Hebron.	<ul style="list-style-type: none"> • Efficient solid waste management system. • Sludge will be transferred to landfill after being dried. Environmental mitigation elements in Al Menya landfill (lining, leachate disposal, and consideration of environmental issues in siting) have been incorporated in design and O&M requirements, project plans and specifications. • Daily disposal of the wet solid waste. • Dumping the solid waste at approved sanitary landfill. • Cover the solid waste containers. 	<input type="checkbox"/> Ensure that mitigation measures are incorporated into bid documents.	Hebron Municipality, JSC H&B, PWA, MEnA.	<ul style="list-style-type: none"> • Bi-monthly • Every time • Every time
Air quality	Exhaust from vehicles movements from and to the WWTP site and gas emissions from the WWTP are the main source of air pollution at post development phase.	<ul style="list-style-type: none"> • Strict enforcement of speed limits, • Use of well-serviced and maintained vehicles, <input type="checkbox"/> • Comply with exhaust limits and gas emissions. • A management plan shall be elaborated by the construction contractor to control odors. • Standardized handling of operations and procedures. Use of liquid sodium hypochlorite and ferric chloride. Using liquids avoids gas release 	<input type="checkbox"/> Establish recording and reporting protocol for chemical handling.	Police, MoT Hebron Municipality, PWA, MEnA	weekly

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		<ul style="list-style-type: none"> • Operations equipment (including pumps and motors) will be selected upon energy efficiency and low-emission factors and • The screening/grit station will be equipped with odor controls; WWTP grit and screenings will be transferred away to Al Menya sanitary landfill 			
Aesthetic	Change in the landscape, degrade the aesthetic of the project area and cause odors attract insects and rodents.	<ul style="list-style-type: none"> • Maintain the green areas • Prohibiting any waste disposal • Effective Solid Waste Management Plan. • Maintain structures, observe good housekeeping procedures, keep facilities and sites clean and well cared for, and incorporate in O&M Manual. 	<input type="checkbox"/> Periodic inspections by MEnA	Hebron Municipality, PWA.	<input type="checkbox"/> Semiannually
Electricity	- The electric shocks may cause health risks. The electricity breaks would affect the project operation and success. - Energy and fuel consumption impact. -Energy needs increase compared to existing conditions for plant operation and pumping reuse water.	<ul style="list-style-type: none"> • Comply with the local and international codes of the electricity supply. • Underground cables should be considered for high voltage. • Closed feeder pillars in safe closet accessible only to authorized personnel, • Post clear warning signs to instruct the workers and to avoid risks and health hazards. • Emergency electricity generators • Use energy efficient technology in treatment and pumping. 		Hebron Municipality, PWA.	<input type="checkbox"/> Consistently as a part of the worker health and safety plan

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Land Use and Planning	Irrigated agriculture will be expanded through reuse. Existing agricultural	<ul style="list-style-type: none"> • Binding to the Palestinian standards of treated wastewater reuse. • Operators used to maintain structures, observe good housekeeping procedures, keep facilities and 		MoA, MEnA, MoLG	As part of design and operations phases
	land is mainly rain fed. Reuse of treated wastewater will increase agricultural rate. Treatment and storage facilities disrupt natural landscape.	sites clean and well cared for. Activities will be described in the O&M manual. Pipelines will be buried.			
Ecology	The WWTP basins may attract and create habitat for migratory birds flying over the region during their semi-annual migrations.	<ul style="list-style-type: none"> • The Operation and Maintenance Manual of the WWTP will need to include security measures to protect the bird. Hunting is highly restricted and all migratory birds are protected. Therefore the WWTP requires proper fencing. • Since the WWTP will be an attraction for educational trips, it may also include birds-watch station if it proved to attract migratory birds. Therefore, a plan for such a station shall be developed in coordination with relevant authorities and expertise and NGOs 	□ Coordinate with Palestine Wildlife Society for bird monitoring and security measures to insert in O&M Manual. Have PWS review the manual	MEnA, PWA	Once, to be considered as part of the design or postconstruction phase

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Annex III: Environmental Monitoring Plan

ESCH	During Construction						
	Proposed Measures	Mitigation	Implementation Responsibility	Means of Monitoring	Monitoring Responsibility	Means of Reporting Monitoring Results	Implementation and budget (US\$)
Air Quality and Dust	Vehicles and construction machinery should be properly maintained and to comply with relevant emission standards.		Contractor; for transportation routes consult Hebron Municipality	Tender documents Site Inspection	Supervision	Construction machinery inspection	These measures are full responsibility of the contractor during construction. He has to allocate budget for the maintenance of his vehicles and bear all the costs as part of the project budget. An inspection and environment officer should be assigned by him to follow up and control these. The salaries and other inspection costs are estimated at US\$ 110,000.
	Spoil piles shall be transported daily in covered trucks.			Tender documents Site Inspection	Supervision Police	Daily submittals	
	The vehicles, in particular, the trucks should not be over loaded to minimize exhausts emissions.			Tender documents Inspection	Supervision Police	Daily submittals	
	Water spray of the construction site and the stockpiles of the excess cut materials to minimize dust.			Tender documents Site Inspection	Supervision	Progress reports	
	Controlling the speed of the transporting vehicles, selecting transportation routes to minimize dust impact on sensitive receivers, and washing trucks tires before leaving the construction site.			Tender documents Inspection	Supervision Hebron Municipality Police	Daily Submittals; Transportation plan	
	Proper scheduling and monitor of any risky activities such as excavation and backfilling.			Tender documents	Supervision	Progress reports	

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	mechanical construction equipment.		documents	Hebron Municipality	Reports	
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	Mechanical excavation should be used where possible and best construction practices will be employed.		Tender documents	Supervision	Progress reports	
	Cease earth-moving activities on days when wind gusts exceed 40 km per hour		Tender documents	Supervision	Progress report	
	Assure the use of well maintained		Tender	Supervision	Progress	

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Noise (construction and traffic noise)	Construction activities should be scheduled carefully to minimize the impact of noise from construction machinery.	Consultant; Contractor	Tender documents Shop drawings	Hebron Municipality	Design report Work plan	The scheduling of the activities should be clear and agreed as to be implemented during construction. The contractor is full responsibility for the control of the works. He has to allocate budget for the maintenance of his vehicles and bear all the costs as part of the project budget.
	Night-time construction using heavy machinery such as pile drivers and concrete vibrators should be prohibited all night hours.	Contractor	Tender documents	Supervision Hebron Municipality MoPWH	Progress report	
	Good maintenance and proper operation of construction machinery to minimize noise generation.	Contractor	Tender documents	Supervision	Daily submittals	
	Selection of transport routes for large vehicles to avoid residential areas.	Contractor; Hebron Municipality	Tender documents	Supervision; Police	Transportation plan	
	Scheduling of the working hours and days.	Contractor	Work plan	Supervision; MoL	work plan; daily submittals	
	Complying with the noise limits during construction activities.	Contractor	Tender documents Inspection	Supervision; MoL; MENA	Inspection Reports	
	Sewage and other wastewater from construction camps should be collected by septic tank or closed container.		Tender documents	Supervision	Waste Management Plan	and environment officer should be responsible for that. Additional US\$ 60,000 is estimated to be allocated for solid waste management.
	Burning of wastes should be prohibited.		Site instructions	Supervision; Hebron Municipality; MEnA	-	
	Construction waste should be promptly removed from the construction sites.		Tender documents	Supervision; Hebron Municipality	Daily submittals	

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	The waste transportation vehicles should not be overloaded and should be covered.		Tender documents Instructions	Hebron Municipality; Police	Waste Management Plan	
Ecology and Natural Resources	Implementing a resettlement plan for the trees.	Contractor; Hebron Municipality	Special Plan	MoA	Resettlement Plan	US\$ 20,000 is estimated as the budget for the trees resettlement plan and compensation.
	Uprooting and replanting the trees.	Contractor	Consultant; Hebron Municipality	MoA	Resettlement Plan	
	Bird, wolf, and fox presence should be monitored. Hunting is highly restricted and all migratory birds, wolves and foxes are protected.	Hebron Municipality	Tender documents Special Plan	MoTA	Special Report	
and Traffic	Traffic plans should be prepared before construction in conjunction with relevant authority.	Contractor	Tender documents	MoT; Police	Traffic Plan	US\$ 20,000 is the estimated budget for the implementation

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Soil	Soil erosion (and dust) should be minimized at construction sites by covering spoil and fill piles, in addition to applying other mitigation measures. This requirement should be incorporated into project plans and specifications.	Contractor; Consultant	Tender documents Site Inspection	Supervision; Hebron Municipality	Project plans; Progress reports; Daily submittals	These measures are full responsibility of the contractor during construction. Costs are part of the project budget.
	Suitable disposal sites should be identified for excess material from excavating water pipelines and site grading of the water reservoirs.	Contractor; Hebron Municipality	Tender documents Excavation plan	Supervision; MoPWH	Excavation plan report; Daily submittals	
Surface Water	Continuous clearance of wadis and storm water courses.	Contractor	Tender documents	Supervision; Hebron Municipality; MoPWH	Progress report	US\$ 12,000 is to cover clearance works in the wadi.
Groundwater	Continuous cleaning of the construction site.	Contractor	Tender documents	Supervision; Hebron Municipality	Progress report	US \$12,000 is for the construction of the septic tank and frequent emptying of the tank.
	Construction of temporary septic tank when needed.		Tender documents	Supervision	Mobilization report	
	Emptying of septic tank when full and dumping it at an official nearby treatment facility.		Tender documents and site instructions	Supervision	Progress report	
Site and wastes	Disposal of the generated solid waste should be timely cleaned up and stored in closed containers.	Contractor	Tender documents and site instructions	Supervision; Hebron Municipality	Daily submittals	These measures are full responsibility of the contractor during

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	Disposed materials should be properly compacted and stabilized.		Tender documents and site instructions	Supervision; Hebron Municipality	Progress report	construction. He has to manage the construction and solid wastes as to maintain the site clean. The inspection
	Construction spoils and rocky materials could be used by local people on a 'take for free' basis.		Announce to the public; Announcements	Hebron Municipality	Progress report	
	Regulating traffic at the road crossings and improve existing roads to accommodate increased heavy traffic.	Contractor	Tender documents Traffic Plan	HEBRON MUNICIPALITY; MoPWH	Traffic Plan	of the traffic plan.
	Select transport routes to reduce disturbance to regular traffic.	Contractor, Hebron Municipality	Traffic Plan	MoPWH, MoT; Police	Traffic Plan	
Land Use and Planning	The PWA and Hebron Municipality shall obtain change of land use permits or easements from agencies having jurisdiction over the facility locations.	PWA, Hebron Municipality	Project documents and land use plan	Higher planning council; MoP; MoPWH	Special Report	This has to be secured by Hebron Municipality prior to construction activities.
Workers Safety and protection	Contractors should be required to take safety measures at the construction sites, and warning signs should be provided to alert of potential safety hazards at and around the construction sites.	Contractor	Tender documents	Supervision; Hebron Municipality; MoPWH; MoL	Progress Report	US\$ 2,000 is to cover the cost of the traffic and warning signs.
	Contractors and construction supervision should be introduced to the environmental protection measures.	Hebron Municipality	ESCHIA report	MEnA; PWA	Environmental Auditing	

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

	Environmental protection measures in connection with construction operations are required as integral parts of the engineering contracts.	Contractor JSCDP	ESCHIA report	MENA; PWA	Environmental Auditing	
	Provide traffic regulation signs.	Contractor	Tender documents	Hebron Municipality	Progress report	
	Complying with seismic loads in design, exit, and emergency.	Consultant; Contractor	Tender documents	PWA; Hebron Municipality	Design report	
Heritage and cultural properties	Construction should be immediately suspended if any archaeological or other cultural properties are found.	Contractor; Consultant	Tender documents	Hebron Municipality; MoTA	Progress report	US\$ 10,000 is estimated as the fees for the archaeological expert to conduct the investigation. The contractor is to take the risk of any damages to cultural properties.
	MoTA and other relevant cultural authority and the project management office should be notified promptly if any archaeological or other cultural properties are found and only after a thorough investigation will construction resume.	Contractor	Tender documents	Hebron Municipality; MoTA	Progress report	
	Reinstate any damages whatsoever that may occur (should be avoided as possible) to the cultural properties.	Contractor	Tender documents	Hebron Municipality; MoTA	Progress report	
Occupational Health	Commitment with the Palestinian Law of Labor.	Contractor	Tender documents	MoPWH; MoL	Progress report	The contractor is responsible for the occupational and workers health at site. These costs are covered by the contractor budget. The salaries of an
	Occupational health and safety measures should be taken at the construction sites.	Contractor		Consultant MoPWH; MoL	Progress report	
	First aid kits and units should be available at the site.	Contractor		Consultant MoPWH;	Progress report	

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

				MoL		environment and safety officer are estimated at US\$60,000 per year.
	Appoint an environmental and safety officer.	Contractor; Hebron Municipality		PWA; MEnA	Project documents	
	Workers should consult the appointed safety officer of the site regularly.	Workers; contractor		Consultant; MoL	Progress report	
Agriculture	Control machinery and vehicle access.	Contractor	Tender documents	Consultant; Hebron Municipality	Progress report	US\$ 36,000 is estimated as the budget for reinstatement and compensation. This is normally covered by the BoQ.
	Reinstate all affected areas.			Consultant; Hebron Municipality; MoA	Progress report	
Socio economic	Efficient sanitation must be maintained and monitored, with provision of health services.	Contractor	Tender documents	Consultant; MoL	Progress report	US\$ 24,000 is to be allocated for efficient sanitation and health services during construction. US\$ 10,000 is the budget for the awareness campaign.
	The contractor should afford safe and healthy environment for the workforce.	Contractor	Tender documents	Consultant; MoL	Progress report	
	Provide recreational and social activities at construction camp during non-working hours.	Contractor	Tender documents	Consultant; MoL; MoPWH	Progress report	
	Conduct Safety awareness campaign, focusing on schools and children.	Hebron Municipality	Project Agreement Announcements	PWA, MoLG	Awareness report	
ism and reation	Effective Solid Waste Management Plan.	Contractor; Hebron Municipality	Tender documents	MEnA; MoTA	Waste Management Plan	The keeping of the site post construction is the responsibility

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

	Commitment to noise, dust and emissions standards.	Consultant; Contractor		Hebron Municipality; MEnA	Design and progress report	of Hebron municipalities and the costs for these should be part of the municipality budget.
	Traffic management and maintain water and electricity supply.	Contractor		Hebron Municipality; MoPWH	Progress report	
Aesthetic	Leveling and site preparation should be monitored; no wastes should be spilled.	Contractor	Tender documents	Hebron Municipality; MoPWH	Progress report	US\$ 10,000 is additional budget for site improvement and landscaping.
	Maintain the green areas.			Hebron Municipality; MEnA		
	Planting trees and improving the landscape.			Hebron Municipality; MoA		
	Maintain structures, observe good housekeeping procedures keep facilities and sites clean and well cared for.			Hebron Municipality; MoPWH		

Annex IV: Social Management Plan

The Social Management Plan is designed to identify the additional measures required to further reduce and/or manage the potential social impacts during project implementation, particularly the social, economic, health, and cultural impacts of the project and the effectiveness of mitigation measures. The plan identifies monitoring objectives and specifies the type of monitoring, and stipulates mitigation measures.

The main objectives of the social management plan are:

1. Describe the approach and procedures that will be used to ensure that the social impact avoidance and mitigation measures are successfully applied during the construction and operation of the project.
2. Prepare periodic reports on the socio-economic status of the project and the community, including activities or actions taken during the period and analysis and evaluation of results and present recommendations, to improve or develop better approach.
3. Implement and enhance all laws and regulations related to labor affairs and benefits.
4. Provide local awareness for the need of the WWTP and the nature of its service. A detailed record of public awareness activities should be properly documented.
5. Inform workers regarding onsite job risks.
6. Enforce equal opportunity employment for equal qualifications.

Operators should be aware of the actual situation, existing standard operating and maintenance procedures, and safety measures for the operators and employees. The operators should be educated not only on operational- related matters but also on potential hazards and environmental, health and safety matters. In general, the operators should be aware of the following:

- Issues related to the environment;
- Reason and purpose for the environmental regulations;
- Handling, storing, and labeling of chemicals and hazardous materials (including separate packing of hazardous waste in secure containers for separate collection);
- Proper collection and intermediate storage of wastes at the WWTP;
- Protection against health hazards;
- Safety programs and prevention of accidents; and
- Procedures for emergency care of injured personnel, and Control and maintenance of facilities.

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<i>During Construction Phase</i>					
Environmental Element	Potential Environmental Impacts	Proposed Mitigation Measures	Monitoring	Institutional Responsibilities	Frequency
Socioeconomic	Construction will create a significant number of new jobs. Purchase of construction material and rent of construction equipment. Workforce might be from outside the immediate neighborhood and thus living in temporary quarters subject to disease, noise and dust.	<ul style="list-style-type: none"> • Efficient sanitation must be maintained and monitored, with provision of health services. • The contractor should afford safe and healthy environment for the workforce. • Provide recreational and social activities at construction camp during non-working hours. • Assure purchase of high quality material; improve local economy by involvement of local contractors. 	<ul style="list-style-type: none"> • Ensure that mitigation measures are incorporated into bid documents. • Periodic visits by PWA, MoH and MoL 	Contractor, PWA, MoH, MoL	<ul style="list-style-type: none"> • All the time • All the time • All the time • All the time

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<p>Noise and traffic noise</p>	<p>Noise due to heavy construction machinery and vehicular movement, potentially affecting the residents. Generally, construction noise exceeding a noise level of 70 dB has significant impacts on surrounding sensitive receptors within 50 meters of the construction sites.</p>	<ul style="list-style-type: none"> • Construction activities should be scheduled carefully to minimize the impact of noise from construction machinery. • Night-time construction using heavy machinery such as pile drivers and concrete vibrators should be prohibited all night hours. • Good maintenance and proper operation of construction machinery to minimize noise generation. • Selection of transport routes for large vehicles to avoid residential areas. • Scheduling of the working hours and days to avoid sensitive seasons, days, or hours (limit to Saturday - Thursday, 07:00 to 18:00 hrs or daylight hours) • Complying with the noise limits during construction activities. 	<ul style="list-style-type: none"> • Review of plans and specifications to ensure incorporation of noise mitigation measures. • Contractor to map locations of sensitive noise receptors in sitting pumping stations(s) and present for approval. 	<p>Contractor, Hebron Municipality, PWA, MoT, MoPWH.</p>	<ul style="list-style-type: none"> • Per activity • Every night • Monthly • All the time • All the time • Every time
		<ul style="list-style-type: none"> • Include noise mitigation requirements in project bid documents. • Inform residents and businesses near alignment of construction duration and schedule. • Provide noise protection wears for construction workers and operators 			<ul style="list-style-type: none"> • Every time • During Construction • During Construction

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<p>Infrastructure and services</p>	<p>Traffic congestion caused by increased construction traffic in the areas, altering public safety. Construction will temporarily disrupt traffic patterns in the vicinity of project facilities. Temporary impacts to services and utilities during construction such as cutting water supply service during installation of sewer pipelines</p>	<ul style="list-style-type: none"> • Traffic plans should be prepared before construction in conjunction with relevant authority. • Regulating traffic at the road crossings and improve existing roads to accommodate increased heavy traffic. • Select transport routes to reduce disturbance to regular traffic. • Divert traffic at peak traffic hours. • Potential access restrictions during construction will be localized and temporary, but the Contractor will notify receptors at least one week in advance of the schedule and duration of construction. The Contractor will also coordinate with providers of fire and police protection and hospitals to ensure continued access during construction • As applicable, conduct underground utility searches prior to construction Citizens, businesses and public facilities will be informed of the water supply cutting schedule. • Emergency service providers shall be provided with contact names, locations. 	<ul style="list-style-type: none"> • Contractor will document neighborhood meeting, notification materials, and other communications. • Contractor will provide contact reports with affected parties. • Ensure that mitigation measures are incorporated into bid documents. • Contractor shall implement required mitigation measures 	<p>Contractor, MoT, Hebron Municipality, PWA, Police.</p>	<ul style="list-style-type: none"> • Once • Annual • Every time • Daily • Monthly • Once • Once
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ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<p>Public Safety and protection (Geology and seismicity included)</p>	<p>Problems related to public and workers safety due to the works in the project Traffic accidents Risks and seismic activities.</p>	<ul style="list-style-type: none"> • Contractors should be required to take safety measures at the construction sites, and warning signs should be provided to alert of potential safety hazards at and around the construction sites. • Contractors and construction supervision should be introduced to the environmental protection measures. • Environmental protection measures in connection with construction operations are required as integral parts of the engineering contracts. • Provide traffic regulation signs. • Facilities have generally been sited far from habitation and will be designed in compliance with seismic loads in design, exit, and emergency. • Contractor will adhere to health and safety regulations. • A detailed geological and foundation analysis has been conducted. No unique geologic or physical features will be altered 	<ul style="list-style-type: none"> • Review of geotechnical analysis and compare to bid documents to ensure recommendations are incorporated • Review of bid documents to ensure that applicable codes and regulations are incorporated. 	<p>Contractor, Consultant, Hebron Municipality, PWA, MEnA.</p>	<ul style="list-style-type: none"> • All the time • Monthly • Once • Monthly • Once • Once • All the time
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ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<p>Heritage and cultural properties</p>	<p>Damaging of heritage and archaeological sites within the construction area</p>	<ul style="list-style-type: none"> • Contractor will have to continuously monitor any archaeological evidence revealed during construction • Construction should be immediately suspended if any archaeological or other cultural properties are found. • MoTA and the project management office should be notified promptly and only after a thorough investigation will construction resume. 	<p>☐ Contractor shall immediately report any material to the Inspector. The Contractor shall document the time and date of the materials discovery and the time and date of his contact with</p>	<p>Contactor, PWA, MoTA</p>	<ul style="list-style-type: none"> • Every time • Every time • Every time
			<p>MoTA</p> <p>☐ MoTA shall visit the site and approve the site boundary designated. The project inspector shall monitor activities near the established boundary</p>		

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<p>Occupational Health</p>	<p>Construction workers might be exposed to or injured by different occupational hazards</p>	<ul style="list-style-type: none"> • Occupational health and safety measures should be taken at the construction sites. • First aid kits and units should be available at the site. • Workers should consult the appointed safety officer of the site in regularly. • Prepare WWTP safety manual and emergency response plan. • Adhere to health and safety regulations on construction site(s). 	<ul style="list-style-type: none"> • Contractor will provide safety training and inspection. • All accidents will be reported. • Unsafe conditions will be corrected. • Agency review of manual and emergency response plan • Develop and implement training program, overseen by owner 	<p>Contractor, PWA, MoL, MoH</p>	<ul style="list-style-type: none"> • All the time • Every time • All the time • Every time • Every time
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ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<i>Post Development Phase</i>					
Environmental Element	Potential Environmental Impacts	Proposed Mitigation Measures	Monitoring	Institutional Responsibility	Frequency
Noise	Noise generated from vehicles movements, noise generated from pumps, WWTP activities	<ul style="list-style-type: none"> • Monitoring and enforcement programs should be applied to the noise generated. The noise should not exceed the local or international limits for WWTP and industrial areas. • The pumps, machines, activities should also comply with the noise limits and installation requirements. 	<input type="checkbox"/> Include in O&M Manual; check WWTP inventory	Hebron Municipality, PWA.	<ul style="list-style-type: none"> • All the time • All the time

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

<p>Public Occupational Health and Safety</p>	<p>Traffic accidents, noise waves, accidents and injuries during work, gas emissions from the vehicles movements from and to the project and the gas emissions from the WWTP. Use of hazardous chemicals in wastewater treatment. The large, deep reservoir may attract swimmers, livestock, and perhaps bird hunters. Damage due to seismic event</p>	<ul style="list-style-type: none"> • Comply with the Palestinian Labor Law • Constructing effective fire fighting system • Comply with the national and international gas emissions standards for both, vehicles and treatment systems • Constricting ventilation systems to maintain the healthy air. • Implementing warning signs, and traffic control devices. • Maintain fire alarm and warning systems • Maintain emergency exists for fire and seismic situations • Adhere to all applicable standards for wastewater reuse in irrigation. Develop agribusiness partnership. • Operation and Management manual contains industry standards tor chemical handling. Worker require appropriate training program. • Construct steep bank slopes as soil stability 	<ul style="list-style-type: none"> • Report damage to MEnA and PWA; MEnA and PWA oversee repairs. • Periodic inspections and laboratory analysis of crops and soil. 	<p>Hebron Municipality, PWA, Civil defense</p>	<ul style="list-style-type: none"> • Every time • Once • All the time • Yearly • All the time • Yearly • All the time • All the time • All the time • All the time • Once
		<p>allows. Post signage in Arabic and Hebrew around the reservoir to warn that the water stored is not potable and dangerous tor swimming. Hunting will be prohibited. The reservoir shall be included In the WWTP security rounds. A fence shall be constructed around the reservoir to restrict access</p> <p><input type="checkbox"/> Repair damage as soon as possible after a seismic event.</p>			<p><input type="checkbox"/> Every Time</p>

ENVIRONMENTAL, SOCIAL, AND CULTURAL HERITAGE IMPACT ASSESSMENT (ESCHIA) FOR THE HEBRON GOVERNORATE WASTEWATER MANAGEMENT PROJECT

Institutional	The project will affect several entities such as municipalities, authorities and ministries. It will also affect farmers who are to reuse wastewater and sludge.	<ul style="list-style-type: none"> • Coordinate training and public awareness for new workers • Implement regular environmental checks; public awareness campaigns; regular checks of vehicles; reuse and recycling options; maintenance activities; etc. • Coordinate with PWA for the implementation and operation of the WWTP. • Support farmers cooperative and farmers' family businesses. 		Hebron Municipality, PWA, MoLG, MEnA.	<ul style="list-style-type: none"> • Once • Bi-monthly • All the time • All the time
Neighborhood residential area	The Neighbourhood area may be affected by noise and dust from to the WWTP.	<ul style="list-style-type: none"> • Commitment in the exhaust, emissions and noise limits. • Control and management to avoid congestions 		Hebron Municipality, PWA.	<ul style="list-style-type: none"> • All the time • Monthly
Tourism and Recreation	Loss of tourism and recreational value if the aesthetic, noise, air pollution and services not well maintained.	<ul style="list-style-type: none"> • Effective Solid Waste Management Plan. • Commitment in noise, dust and emissions standards • Traffic management and maintain water and electricity supply • Maintain the green areas 		Hebron Municipality	<ul style="list-style-type: none"> • All the time • All the time • Every time • All the time

Annex VI PWA and HM confirmation letter related to OP 4.12:



Date: April 23, 2014
Ref: PWA/14/5803/2014

**Attention: Dr. Iyad Rammal, HRWWTP Task Team Leader
The World Bank
West Bank Gaza Office, Jerusalem**

**SUBJECT: HEBRON REGIONAL WASTE WATER TREATMENT PLANT
PWA & HM confirmation related to Access Road**

Dear Dr. Iyad,

Upon the request of the World Bank regarding clarification on the potential social impacts in reference to the entire associated facility financed by USAID for the Hebron Waste Water Treatment Plant, we, together with Hebron Municipality would like to confirm the following facts:

- All land requirements for the USAID financed component are met through landowners providing these lands voluntarily
- In total, there are nine (9) landowners who will be impacted since a portion of their lands are needed for widening of the access road (width of six (6) meters). These land owners have agreed to donate their lands subject to ensure the following benefits to the them as follow:
 - a) The Access Road shall be asphalted in six (6) meters width.
 - b) The Landowners shall benefit from the road access, the electricity, the water, the effluent, all in accordance based on their actual needs and in accordance with procedures and conditions set out by HM for receiving such services.

Additional information is as follows:

1. All the project facilities (water line, sewer line, and electrical OHTL) will be implemented within the 6 meters width of the access road itself.
2. All debris, excess excavation and excess construction materials shall be removed from the shoulders of the access road and after the completion of the access road construction no damages shall exist in the landowners remaining land.
3. None of the nine landowners requested any financial or land for land compensation as a result of their voluntarily offered lands for the access road

In summary, any land acquisition impact for the access road to the HWWTP and related impacts will not incur the involuntary taking of land resulting in relocation or loss of shelter, loss of assets or access to assets, loss of income sources or means of livelihood and the land related impact will be met through voluntary donations by the community and

that the communities concerned have been fully consulted with though HM and are in favor of the project given the benefits it will accrue to them.

In consistency with above and the letter from the HM (see attached), we pleased to confirm to the Bank that there are no impacts as per the Bank's Operational Policy 4.12 under the entire associated facility financed by USAID.

Sincerely,



Eng. Sadi Ali
HRWWTP PIU Director
PWA



CC: HM General Director, Mr. Maher Owaiwi



الرقم: ١٥٦٤٩٠/٤٤

التاريخ: 2014/4/22

السادة سلطة المياه الفلسطينية المحترمين
السيد سعدي علي المحترم
مدير مشروع محطة معالجة المياه العادمة

الموضوع: طريق الخدمة لمشروع محطة معالجة المياه العادمة لمدينة الخليل

تمة طيبة ويسر،،،،

من خلال الاجراءات المطلوبة لتنفيذ شبكة كهرباء لتغذية محطة معالجة المياه العادمة من خلال المسار المقترح في الوادي على امتداد مسار المجرى المكشوف للمياه العادمة وبعد التواصل مع المواطنين من اهل المنطقة تم التوصل الى التفاهات التالية:

- 1- تم التعرف على المالكين على امتداد مسار الخط المقترح وهم تسعة مواطنين حسب الكشوفات التي تم رفعها في السابق للجهات ذات العلاقة ومنها PWA+B&V+WB+AFD.
- 2- كان هناك اتفاق مبدئي مع المالكين التسعة حيث تمت الموافقة الطوعية وبارادة المالكين دون اكراه على انشاء شارع خدمة بعرض ستة امتار وان يتم تعبيد الشارع وذلك من خلال اراضيهم على امتداد مسار سيل المياه العادمة. كانت لديهم الشروط التالية:
 - 1- انشاء شارع خدمة في الوادي بعرض 6 امتار على ان يتم تعبيد الشارع من خلال اراضي المالكين.
 - 2- ان يتم وضع الخدمات ضمن الشارع المقترح من الواد وتشمل خدمة خط التغذية الكهربائية، وخط المياه وخط الصرف الصحي الناقل.
 - 3- يطلب المواطنون الاستفادة من خط التغذية الكهربائية حسب حاجتهم وحسب الشروط والاجراءات المتبعة لبلدية الخليل.
 - 4- يطلب المواطنون الاستفادة من المياه المعالجة حسب حاجتهم وحسب الشروط والاجراءات المتبعة لبلدية الخليل.
 - 5- المالكون الـ 9 لا يطلبون أي تعويضات مالية او اثمان ممتلكات او تعويض عن الضرر.
 - 6- يطلبون ان يتم اعادة الامور الى طبيعتها وذلك بعد تنفيذ شارع الخدمة والخدمات الاخرى وعدم ترك مخلفات عمل وعدم الحاق اضرار جانبية باراضيهم

وتفضلوا بقبول الالتماس،،،،،

أ. ماهر العويوي

مدير عام البلدية

2014-04-22

Admin. /Ghadour.2014

موقع بلدية الخليل الالكتروني: www.hebron-city.ps