

**The Water Security and Resilience Program (WSRP)**

Terms of Reference

**Consultancy Services for Construction Supervision**

**for**

**Bulk Water Transmission and**

**Northeast Jenin Water Supply Distribution System**

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## 1 BACKGROUND

Water is fundamental for life and all aspects of socio-economic development, and one of the most important and critical concerns in Palestine is the water distribution and access. The Palestinian water sector is characterized by a lack of management over the accessible water resources, economic hardship, inadequate infrastructure, and ineffective water resource management. In addition, it is heavily impacted by the deterioration of the – already dire – political and economic situation, which leads to severe water shortages, particularly in the Gaza Strip but also in the West Bank.

The water shortages in West Bank and Gaza that affect the Palestinian's economic potential mainly result from Israel's appropriation of groundwater resources. Israel controls around 85% of water resources in the West Bank, and the access to the remaining sources is very limited to Palestinians, which leads to low availability of water per capita, inadequate water services, and major seasonal shortages. The overall situation forces the authorities to adopt an emergency response approach instead of long-term strategic development, hindering the development much-needed infrastructure.

As a result, the water sector in Palestine suffers from major shortcomings, which include: (i) the quality and quantity of drinking water does not meet World Health Organization (WHO) standards; (ii) there is intermittent supply; (iii) levels of NRW (technical and commercial losses) are high; (iv) there are low connection rates to sewage networks in the West Bank; and (v) the current revenues collected in the sector do not cover the cost of operation and maintenance of the infrastructure.

To address the systemic challenges of the water sector, the PA has adopted policies for a transformational and sustainable shift in the sector. The PA enacted the Water Law in 2014 and approved the Strategic Development Plan (SDP) 2022-2032, which focuses on improving water and wastewater services within a comprehensive framework for developing sector institutions for better governance. The activities envisaged under the SDP will contribute to the climate change adaptation measures included in the Palestinian Authority's Nationally Determined Contributions (NDCs) and the National Adaptation Plan (NAP). The World Bank and the donor community have supported these reforms under different operations and analytical assessments.

The guiding principles embedded in the 2014 Water Law are meant to adjust and reform the current setting of the sector. The Law delineates the responsibilities of each institutional stakeholder, establishes clear and enforceable accountabilities, and fosters financial independence and self-sufficiency of the service providers. The Water Law has defined two main levels of water sector management:

- The national level for policy and regulatory functions and bulk water supply where: (i) The Palestinian Water Authority (PWA) focuses on managing the water resources in an integrated and sustainable manner, prepares general plans, sector policies and development strategies; (ii) the Water Sector Regulatory Council (WSRC), established in August 2014 as an independent legal entity reporting to the Cabinet of Ministers, regulates and monitors all matters related to the operation of water service providers; and (iii) the National Water Company (NWC) (to be established), is expected to be responsible for bulk water supply.
- At the local level, water supply and wastewater services are expected to be delivered by Regional Water Utilities (RWU) which are yet to be established. The Water Law calls for the aggregation of the approximately 300 existing small service providers (water departments at the LGU level) into regional utilities to enhance the sustainability of the service delivery level.

Within this context, the World Bank Group is expected to finance the water security and resilience program (WSRP) of which the PWA, as the main stakeholder in the water sector, is the implementing agency. The aim of the proposed project is to provide essential water services and technical support to improve the sector performance in West Bank and Gaza. The bulk water supply of the for the project comes from of the Red to Dead Sea Agreement, where the Israeli Water Authority (IWA) is allocating additional water quantities to be purchased by the PA and distributed in the West Bank. As part of this additional water allocation, the Jenin area will receive an additional daily quantity of 25,200 m<sup>3</sup>/d from Salem and Al Jalameh connection points,

## 2 PROJECT DESCRIPTION

The WSRP will focus on the (i) Jenin Bulk Water Supply System, that will include construction of bulk main supply and distribution pipelines, regional reservoir tanks, and main and local booster pump stations (packages 1 and 2) (ii) construction of a water supply system in northeast Jenin villages (Deir Abu daief, Arabuna, Northern Beit Qad, and Southern Beit Qad and Jalboun), including distribution pipelines, reservoirs, and booster pumps (package 3). The present section describes the features, concept and objectives of the proposed project related to the infrastructure and construction Works.

- **Package 1:** Construction of Water Transmission Pipeline between Salem, Aljalameh and Main Booster Pump Station.
- **Package 2:** Construction of Water Transmission Pipeline from Main Booster Pump Station to the Regional Tank and the Construction of the Regional Tank.
- **Package 3:** Construction of Water Distribution System- Deir Abu Daief. Beit Qad (North and South), Arabuna and Jalboun. The implementation of this Contract Packages will enable PWA to increase water storage capacity in Jenin Governorate and will enhance the efficiency of the water distribution system to absorb the additional quantities of drinking water by connecting the new bulk water supply system to the existing internal distribution networks. The project will increase the water quantities and provide the vulnerable communities in Jenin district with safe, affordable and available water services.

There is an envisaged potential for additional scope of services (Package 4). The scope of the additional works includes 12 km transmission pipelines from regional tank, construction of water tanks, and BPS to supply the villages/ small towns of Qabatiya and Burqin. The financing might be secured by the German Government financing financed through Kreditanstalt für Wiederaufbau (Reconstruction Credit InstituteKfW Development Bank). (KfW). The envisaged consulting package financed by KfW would include not only construction supervision services, but also additional tender support and a simplified design review of the available detailed design as described in the attached Annex: “Summary of Additional Optional Services through KfW funding.” At this point this is for information purposes only without any rights or obligations for the contracting authority.

### a) Packages 1 and 2 – Bulk Water Supply System in Jenin

The Jenin area will receive an additional daily quantity of 25,200 m<sup>3</sup>/d from Salem, Al Jalameh connections and Janzzur well. The project will provide adequate, reliable, and safe water supply with better storage capabilities to help overcome the deficit in the water supply that the area suffers due to undersized, old, and deteriorated pipes through the construction of the bulk water system components necessary to supply the Jenin area with the additional water allocation that will be provided by Mekorot at the Salem and Al Jalameh connection points..

The project is designed to serve the population of targeted communities up to 2040, thus, the hydraulic modelling and design arrangements including the sizing of water supply pipelines, storage/ balancing tanks, selection of booster pumping sets, and other appurtenances designed taking into account the water demands of years 2020 and 2040. The communities served by Jenin subcomponent 1.1 are summarized in the table below:

**Table 21. WSRP Served Communities<sup>1</sup>**

No.	Communities	Population (Capita)		No.	Communities	Population	
		2020 <sup>2</sup>	2040			2020	2040
2	Jenin	52,632	77,256	9	Arabuna	1,081	1,587
3	Jenin Camp	10,986	16,125	10	Arrana	2,550	3,742

<sup>1</sup> Preliminary Design, Detailed Design, Preparation of Tender Documents, and Construction Supervision Services for Connection Points Ramallah and Jenin Water Supply Project. Financed by AFD

<sup>2</sup> Data are the published estimates of the Palestinian Central Bureau of Statistics (PCBS) for the communities that will be served by this project for Jenin in the middle of 2020

No.	Communities	Population (Capita)		No.	Communities	Population	
		2020 <sup>2</sup>	2040			2020	2040
4	Beit Qad	2,072	3,041	11	Wadi Dabi <sup>1</sup>	945	1,386
5	Deir Abu Deif	7,429	10,905	12	Burqin	7,515	11,030
6	Faqqu'a	4,651	6,827	13	Al Jalameh	2,392	3,510
7	Jalboun	2,967	4,355	14	Qabatiya	25,773	37,831
8	Deir Ghazaleh	1,191	1,747	15	Al Shuhada	2,424	3,559
					<b>Total Population</b>	<b>124,608</b>	<b>182,904</b>

**The Jenin water supply project consists of the following:**

**Bulk Water Transmission Pipeline:** The length of transmission pipelines is around 28.0 km and diameters range from 150mm to 500mm. The bulk supply system is divided in two packages:

- **Package 1:** Construction of Water Transmission Pipeline Between Salem and Aljalameh and Main Booster Pump Station, Alignment No.1 / Length = 12.82 KM Alignment No.2 / Length =0.61KM and Main BPS including Ground reservoir (1500 C.M)
- **Package 2:** Construction of Water Transmission Pipeline from Main Booster Pump Station to the Regional Tank and construction of the Regional Tank, Alignment No.3 / Length = 12.76 KM, Alignment No.14 / Length = 0.06 KM and Regional Tank (6000 C.M.)

All pipelines are located along roads. The pipes are selected/sized for the best hydraulic performance with existing pressures from resources and the transmitted flows. Part of alignment No. 1 is located along an agricultural road and in parallel to a main wadi to avoid elevated parts in the segment near Al Sa'ada Well and as such will have enough pressure along the whole profile of the transmission pipeline. The alignment conveying water from the main booster station to the regional tank (Alignment #3) is located along the bypass road of Al Jalameh cross border (Road No. 6010-located in Area C).

**Water Tanks and Booster Pump Stations:** The new tanks including the balancing tank at the main booster station and the regional tank are sized to provide the buffer volume required for the daily and/or weekly equalization based on the diurnal demand pattern and adopted peak daily factors. The regional tank will equalize the weekly pattern of the demand (+ daily related to inflow at 20hr/day and outflow of 24hrs/day) while the distribution tanks are supposed to perform the diurnal balancing along the day (24 hrs. period). The majority of the served communities have existing tank/s. The volumes of these tanks are appropriate and sufficient for storage and balancing of daily and/or weekly water demand variations as described below.

**Booster stations:** Main BPS, and the regional tank will have all needed facilities, devices, equipment, and appurtenances needed for the optimal operation of the water supply system. The rated hourly flow for the main booster station is assigned at 20 (1.2) Hourly Peak Factor (20 hour/day). The rated flow for other pumps is based on a 1.5 daily peak factor and 24 (1) hourly peak factor (24 hour/day). The duty hourly flow for all booster stations is assigned against the average hourly flow (daily flow divided by 24 hours of operation per day). The pump-rated flow shall be selected within 85% to 110% of the pump's BEP flow. [Error! Reference source not found.](#) **Table 2.3** summarizes the essential information and characteristics of the booster stations:

**Table 2.** Schedule of Booster Stations

BPS Name	Each (m <sup>3</sup> /hr)	Pump	Flow	Pumps Configuration	Rated Head <sup>3</sup>	Motor Rated Power <sup>4</sup>	Nominal Size of Pump Components (mm)

	Min. 2020	Min. 2040	Duty 2020	Duty 2040	Rated <sup>5</sup>	2020	2040	(m)	KW	hp	Column	Can	Can Inlet	Discharge Head
<b>Main Booster Station MBPS</b>	231	229	231	229	278	3+1	3+1	285	335	450	250	600	300	250

Service Connection and Flow Monitoring Chambers SCADA Pressure Monitoring. power supply etc. For Service Connection, the design strategy for operating the system is to install main connection chamber for each served community and for the proposed BPS and Regional Tank. The main service connection chambers along the main transmission pipelines and the control chamber at BPS and Regional Tank primarily include the pressure/flow control valves and flow meters. They have been designed in terms of pressure rating, sizing, and arrangement. The sizing was designed according to the operating pressures and set flows generated from the steady state hydraulic simulation.

**b) Package 3- Northeast Villages Water Distribution System in the Jenin area.**

**The Northeast Jenin Water Supply system** include two service areas the first area is located 8 km east of Jenin city and include Beit Qad, Jalboun, Deir Abu Daief. The Villages population of around 16,400 and an area of approximately 3304 ha.

Currently Water is provided through an existing connection point chambers owned and operated by the WBWD, the main source of water is Araba Well located at the main road of Nablus-Jenin, currently the citizen of the three villages (Beit Qad, Jalboun and Deir Abu Daief) obtained water through a filling point located at the main existing Chamber of the WBWD. The water is pumped from the well to the existing tank located near the boy's school, and from a filling point constructed near the tank, and the water is transferred by tankers.

The proposed water supply systems for the east villages of Jenin city are as follow:

- a) **Beit Quad Village Water Supply and Distribution System:** Beit Quad WSS: main water supply will be the WBWD chamber connection point, balancing water tank capacity of 50m<sup>3</sup>, elevated tank of 500m<sup>3</sup>, supply and installation of two multistage vertical inline booster pumps, booster room and supply and installation of the electrical panel.
- b) **Deir Abu Daeif Village Water Supply and Distribution System:** Deir Abu Daeif WSS: the water system consists of connection to WBWD chamber, balancing water tank capacity 100m<sup>3</sup>, supply and installation of two multistage vertical inline booster pumps, booster room, and supply and installation of electrical panel and distribution network, in addition to 1000m<sup>3</sup> ground water tank.
- c) **Jalboun Village Water Supply and Distribution System:** Jalboun Village WSS: WBWD Chamber connection point will be the main source of water for Jalboun. The existing system consists of a connection to WBWD chamber, balancing water tank 100m<sup>3</sup>, multistage vertical inline booster pumps, booster room with electrical panel.
- d) **Arabuna Village Water Supply and Distribution System:** The main source of water for Arabuna will be WBWD Chamber connection point, supply and installation of transmission and distribution network in addition to the construction of 500m<sup>3</sup> elevated tank.

The works under package 3 is expected to be divided in two lots ( or three, to be confirmed):

- **Lot.1 (Deir Abu Daief):** Construction of Water Distribution System-Deir Abu Daief Transmission and Distribution Network Pipelines 90 KM, Ground Tank (1000 C.M.) Deir Abu Daief BPS, Electromagnetic Water Meter, Supply and installation of Prepaid Water Meter (1600)
- **Lot.2 (Beit Qad+ Arabuna + Jalboun):** Construction of Water Distribution Systems (Beit Qad+ Arabuna+Jalboun) Transmission and Distribution Network Pipelines/ Length= 80 KM, Elevated Water Tank (500 C.M.) BPS, Arabuna Elevated Water Tank (500 C.M.) Electromagnetic Supply and installation of prepaid Water Meter.

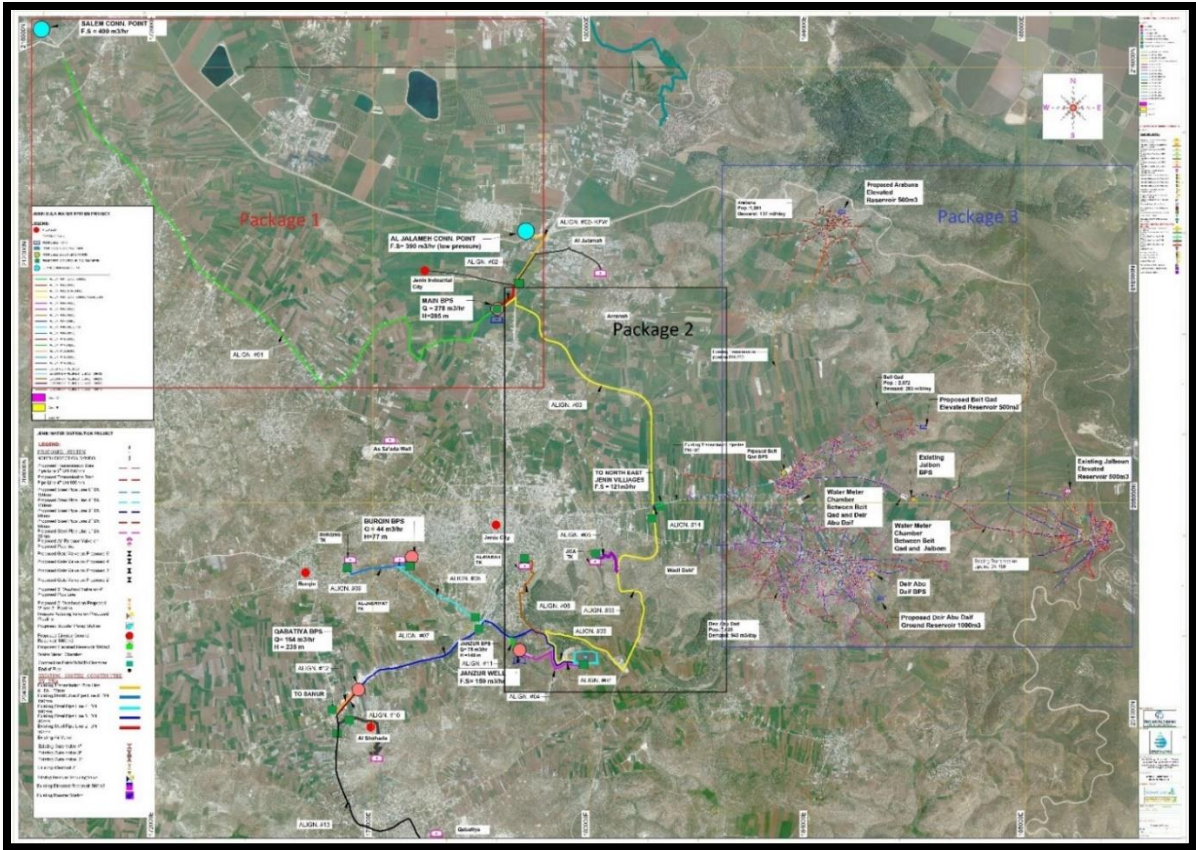


Figure 2: Layout of Jenin Bulk Water System including associated Packages (1,2, and 3)

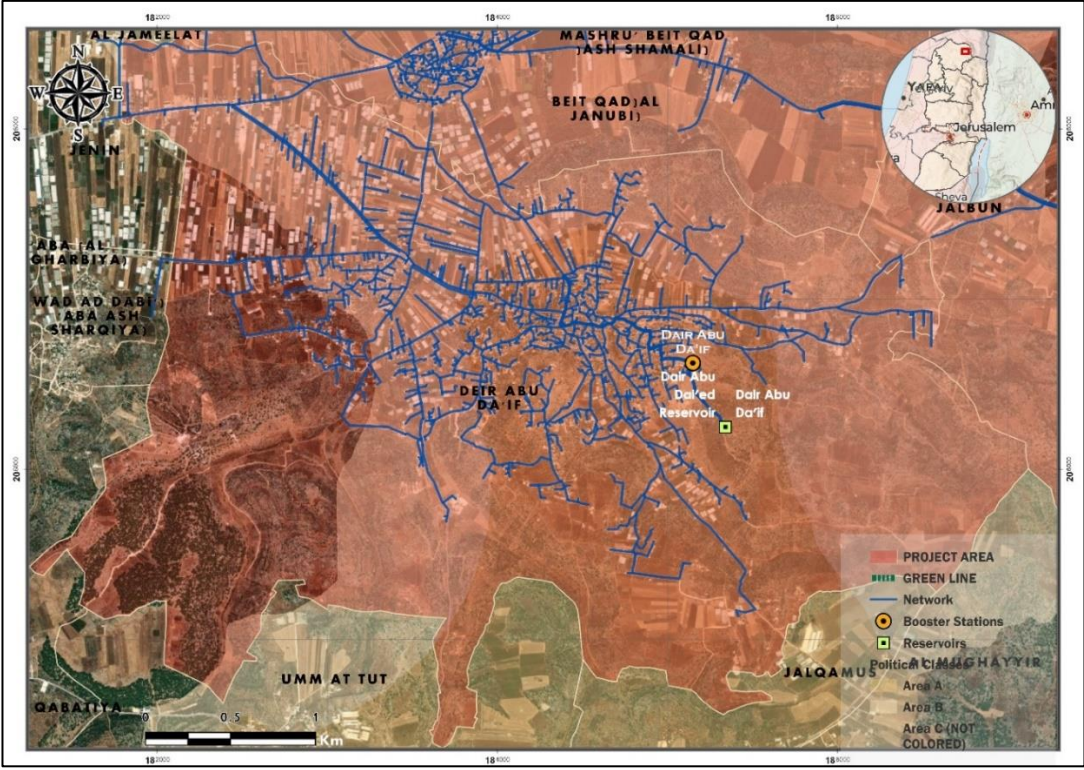


Figure 2: Layout of Deir Abu Daief Water Distribution System

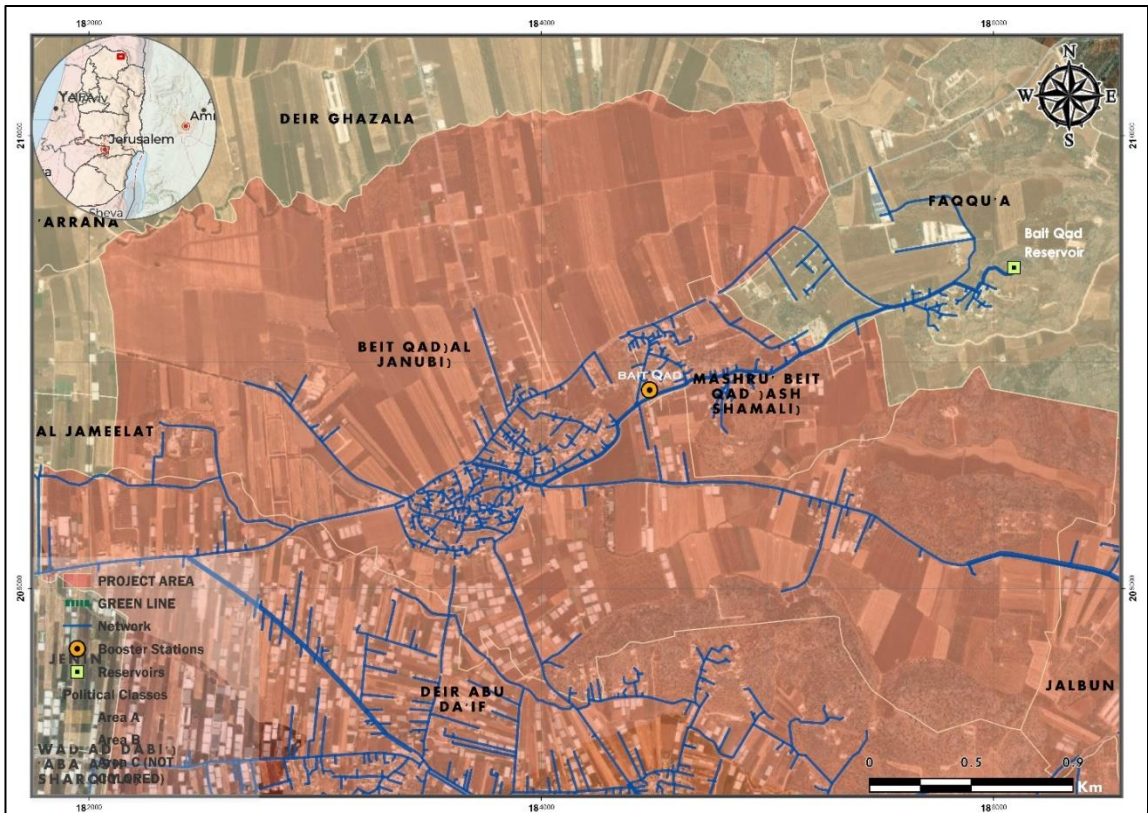


Figure 3: Layout of Beit Qad Water Distribution System

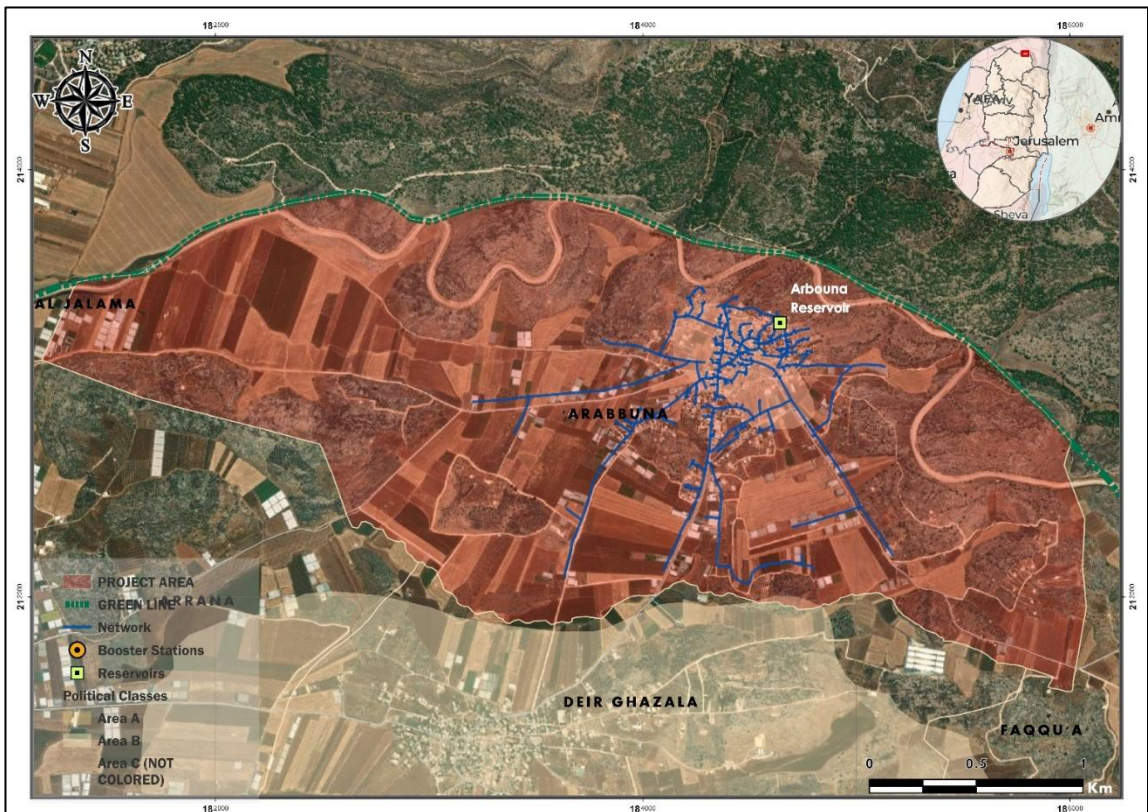
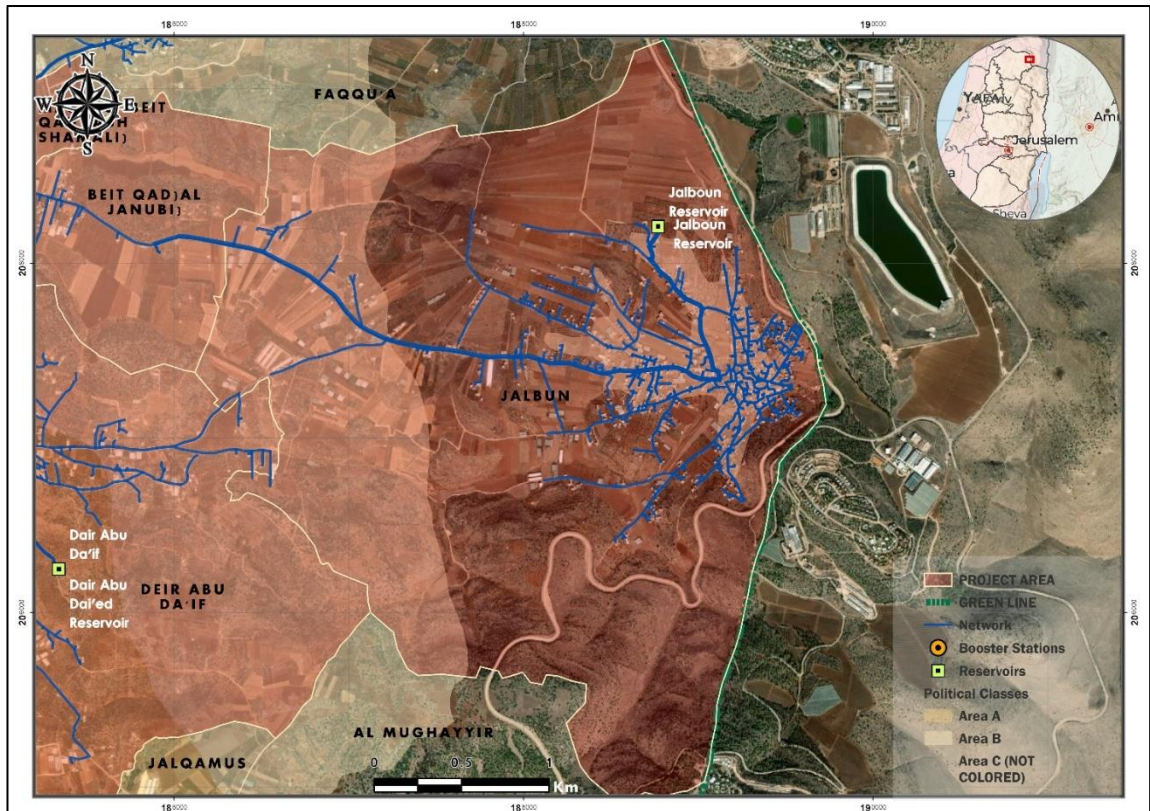


Figure 4: Layout of Arabuna Water Distribution System





**Figure 5:** Layout of Jalboun Water Distribution System

### 3. Objectives of the Assignment

The objective of this consultancy services is to provide technical assistance for construction supervision in order to ensure timely, satisfactory completion of the Works in accordance with the Contract between the Client and Contractor selected for construction of main bulk water system packages necessary to supply the Jenin area with the additional water allocation that will be provided by Mekorot at the Salem and Al Jalameh connection points and construction of distribution water systems in northeast Jenin villages including installation of mechanical and electrical infrastructure and systems.

### 4. Scope of Services of Consultant's

The Consultant shall be responsible for performing services for supervision of the implementation of construction Works – Packages 1,2, and 3 as described below including the provision of qualified experienced personnel, management, co-ordination, and efficient execution of these services.

The Consultant is to provide his expertise to supervise the works carried out by the Contractor(s), including the supervision of equipment delivery and installation and completion of civil construction works; supervise scope and cost of works under the Contract; supervise quality of materials and construction according to the acting construction norms and rules for acceptance of construction; carry out control and acceptance of installation of equipment; review and approve any variation and change orders, acceptance certificates etc; supervise and take part in start-up works; preparation of project delivery in terms stipulated in the Contract; issue of all documents, incl. Interim Certificates, list of defects and production of documents during the Defects Liability Period (i.e. Defects Liability Certificate, the Final Accounts).

This shall be done in close co-operation and consultation with the Client. The Consultant shall have NO authority to relieve the Contractor of any of his duties or obligations under the Contract, neither work entailing delays nor any extra payment by the Client shall be ordered by the Consultant without the authority of the Client.

Wherever appropriate and not in conflict with the Contract, the Consultant shall exercise every reasonable care to protect the interests of the Client.

The Consultant will be responsible for provision of adequate field supervision staff. The field Supervision shall be made in accordance with requirements of International/ National Construction Norms and Rules, in special Technical Regulations in force in Palestine for the Supervision of Works. The Consultant will set up suitable site supervision procedures to ensure that the works under the project are completed in accordance with the national norms and rules, design, and tender documents.

Services should be implemented in size and accordance with technical regulations in force in Palestine for the Supervision of Works. **The responsibilities of the Consultant shall include, but not be limited to, the following tasks:**

**a) Control and monitoring**

- At all stages, ensure compliance of WB Procurement Guidelines for procurement of works, materials, and services by the contractor. Also ensure that the national regulations, specifications, relevant international engineering standards are fully followed as applicable;
- Collect baseline data and information for benefit monitoring during implementation and after project completion as required in the project documents,
- review the Contractors' technical proposals to the extent required by the Contract, advice modifications where necessary and recommend these proposals for consent of the Client;
- review the Contractors' works programs and, where necessary, request revisions of these to account for the current status of the works;
- review, as necessary, designs and shop drawings prepared by the Contractor and equipment manufacturers and suppliers;
- review together with the Contractor to provide the appropriate changes in the design documentation and provide recommendation to the client in accordance with Contract and Palestinian legislation
- agree with the Contractor systems of measurement for interim certificates and carry out the necessary measurements, calculations and certifications for such certificates;
- supervise, inspect, measure and control the quality of the construction of the works and the installation of equipment to ensure compliance with the drawings and specifications;
- supervise the day-to-day operations of the Contractor to ensure compliance with the Contract;
- check and approve the laboratories proposed by the Contractor to perform any tests required during the construction period - control tests of materials and of completed works, and order the removal of improper or substandard work according to the Technical Regulations in force in Palestine for the Supervision of Works;
- verify compliance of materials to be incorporated in the works by the Contractor, verify compliance of completed sections of the works to the provision of the Contract;
- examine, and carry out the measurement of, any work that is about to be covered or put out of view before permanent work is placed thereon;
- Inspect goods, materials, equipment, and machinery upon delivery or if necessary, at the manufacturers' premises and witness tests of materials to ensure compliance with specifications and issue immediate notices of any deficiencies found or non-compliance and certify completeness.
- issue instructions to the Contractor and equipment suppliers in connection with the construction of the works and in accordance with the Contract documents;
- recommend and issue instructions to the Contractor on the extent of special inspections and tests required to be carried out in connection with the construction of the works;
- monitor delivery and storage of plant and equipment;

- monitor the Contractors' topographic and underground surveys and setting out of the works to ensure correct alignments and elevations of the facilities;
- supervise the Contractor in all matters concerning safety and care of works;
- supervise the Contractor in all matters concerning environmental protection.

**b) Recording**

- ensure the records and diaries required by the Client and national regulations are maintained;
- maintain records of progress of the works and the results of inspections and tests of materials and equipment, and all construction related activities;
- the recording of work site daily events and quantities to pay (subject to geometric and quality tests);
- setting up and maintaining correspondence and document storage and retrieval system to record all relevant communications between the parties to the Project, all measurement and quality control details and variations to the works as they occur;
- maintaining daily diary to an approved standard format. This diary shall at least include data on weather over the working day, hours worked, Contractors' equipment on site, Contractors' staff on site, work that day, visitors, problems and other relevant details and circumstances;
- convene and attend monthly management meetings with the Contractor and representatives of the Client to review progress, financial issues, and management issues and prepare minutes of such meetings for general circulation;
- convene and attend weekly site progress meetings with the Contractors' site representative, representatives of the Client to review progress and day-to-day management of the Contract to prepare minutes of such meetings for general circulation;
- record any change or previously unknown conditions that may require variations (modifications to the design and/or specifications of the works), advise the Client of the change, and recommend taking appropriate action;
- establish content and formats of a system of monthly reports by the Contractor to the Client;
- use the photo or video fixation of hidden works;
- set up an effective management and cost accounting systems using a reliable computer-based method.

**c) Schedule updating**

- review the Contractor' works programs and, where necessary, request revisions of these to account for the current status of the works;
- compare actual progress with scheduled progress and advise the Client of any development that could delay completion. Recommend any actions necessary by the Client to facilitate timely completion of the construction;
- in case of slippage in the progress of the Works, with reference to the original or updated and approved work program and, if a postponement of the contractual Completion Date is foreseen, ensuring that the Contractor will take the necessary measures to increase the rate of the works and shall advise the Client accordingly;
- in case of postponement of the Completion Date, the determination of the causes and evaluation of the implications for the contract and the Contractor shall report to the Client on the consequences of such postponement;
- advice and assist the Client in negotiations with the Contractor on rates for any unscheduled items of work, which may arise;
- calculate liquidated damages, if necessary.

#### **d) Claims and disputes**

- in the event of receipt of a notice of claim from the Contractor, immediately thereafter, the Consultant shall notify and provide copy the notice to the Client and assist in resolving any dispute;
- analyze the claim and show to The Client clearly the possible scenarios. The Consultant's report to the Client shall be presented in a special report addressing specifically the claim submitted;
- promptly after the Consultant's inspection, the Consultant shall provide the Client with an assessment of the Contractors' contemporary records, which shall be supported with the Consultant's preliminary conclusions with regard to the potential outcome of the claim. The Consultant shall also consult with the Client any instruction, which have been (or to be issued) to the Contractor with regard to any further contemporary records;
- prior to certification of any payment to the Contractor in relation to the Contractors' claim, the Consultant will have consulted with the Client the grounds on which the Consultant intends to certify the payment. The Consultant shall provide the Client with any particulars to enable the Client to establish his position with regard to the Consultant's certificate;
- recommend to the Client on the Contractor claims for additional payment, extensions of time and other matters, based on the Consultant's interpretation of the Contract Documents, the relevant site conditions and the Contractors' detailed submissions;
- provide independent advice to the Client in the resolution of disputes between the Client on one hand and the Contractor on the other.

#### **e) Reporting**

- provision of reports envisaged in section 5.

#### **f) Finalization**

- supervise final tests of all equipment start-up and commissioning. Inspect and approve all completed works and check Contractors' completed or as-built schedules of quantity;
- advise to the Client on the issuance of certificate of completion;
- supervise development and implementation of the Contractors' training program;
- ensure that on completion of the works, the Contractor provide such records and manufacturer(s)' manuals specified in the Contract for the operation and maintenance of the works;
- organize provisional and temporary and partial taking-over of works and submit all supervision documents to the Taking-over Committee according to the Applicable Law;
- prepare final reports in a form acceptable to the Client and according to the related Palestinian legislative regulations; and
- supervise, verify, correct (if necessary) and approve, the Contractors' "as-built" drawings.

#### **g) Check the Contractors' invoices and certificate of performed works**

- check, verify and authorize Contractors' interim payments in accordance with the Contract;
- check the Contractor' final accounts and certify them for payment by the Client.

### **5. Reports**

The consultant is expected to prepare the following reports through the contract duration as detailed below. All reports to the World Bank may be sent electronically except for the Final Report. The Client shall receive all reports in both electronic and hard copies.

## h) General reports

The following general reports will cover all assignment activities and shall point to all results achieved by the Consultant:

- i. **Consultant's Work Program Report.** Within 28 days of issuance of the Consultant's consent to the Contractors' Work Program, the Consultant shall submit a report to the Client (Consultant's Work Program Report), which shall include:
  - copy of the Contractors' detailed cash flow estimate, in monthly periods, of all payments to which the Contractor will be entitled under the Contract.
  - copy of the Contractors' detailed time program showing the order in which the Contractor intends to carry out the Works, including general description of the methods which the Contractor intends to adopt, and of the major stages, in the execution of the Works and other information as may be deemed necessary and appropriate by the Consultant.
  - a supporting report which shall include a list of critical path items and the related Contractors' estimate of delivery periods, accompanied with the Consultant's estimate of the latest delivery periods for each critical path item to warrant the completion in accordance with the Contract.
  - for the manufacture of each main item of Plant and Materials, the name of the manufacturer, manufacture location and the expected dates of:
    - commencement of manufacture.
    - Contractors' and/or the Consultant's inspections and tests.
    - shipment and arrival at the Site.
  - the materials and plant selected by the Consultant for inspections and tests including an appropriate specification of the tests to be carried out and the associated arrangements;
  - copies of all notices, consents, approvals, certificates or determinations given or issued by the Consultant within the reported period; and
  - sample standard formats for the following future reporting:
    - 1) Diary – daily report;
    - 2) Monthly Construction Progress Report;
    - 3) Monthly Report;
    - 4) Quarterly Construction Progress Report;
    - 5) Monthly Site Meeting Minutes and
    - 6) Weekly Site Meeting Minutes.
  - other information as may be required by the Client.
- ii. **Monthly Report** — to be submitted within 10 days after the end of a calendar month in the form acceptable to the Client, describing the services rendered during the last calendar month and general progress in execution of services. This report shall be the legal foundation for payments to Consultant by the Client.
- iii. **Final Report** — at the end of the services, outlining the overall development of the project, the critical problems encountered the achievement of the specific and overall objectives, as well as the recommendations for the future development. A draft final report shall be submitted one month before completion of the Construction Supervision Agreement. All comments shall be submitted to the Consultant by the Agreement Completion Date and the Consultant shall submit the final version of the report to Client not later than two weeks after the Agreement Completion Date.

## i) Construction Supervision Reports

The following reports, prepared only during construction period, shall be prepared by the Consultant:

- i. **Diary** — a daily report in a standard format. The report's content shall describe the work done that day, problems and events as well as detailing the weather, details of construction Contractors' staff and equipment on site, accidents and other information. The standard format for this report will be agreed with the Client. This report shall be independent of any daily reporting by the Contractor. At the end of the Agreement the Consultant shall submit the originals of the Supervisors daily report spiral bound in hard covers and indexed as part of the Agreement record.
- ii. **Monthly Construction Progress Report** — to be submitted within 10 days after the end of a calendar month in the form acceptable to the Client, detailing the following:
  - brief summary information about any events or circumstances which, in the Consultant's opinion, may create sufficient grounds for any time and/or cost overrun under the Contract and the Consultant's recommendation of the measures being (or to be) adopted to overcome such events or circumstances and the contractual basis, therefore.
  - comparison in the form of a chart showing the Contractors' original cumulative cash flow estimate, in monthly periods, of all payments to which the Contractor will be entitled under the Contract and the actual payments certified by the Consultant up to the end of the reporting period. In the event of the cumulative amount of the actual monthly payment certificates being lower than the Contractors' estimate, the Consultant shall accompany the chart with a supporting report and provide:
    - details of any events or circumstances that have caused the discrepancy.
    - an assessment of the significance of such events or circumstances, including the Consultant's opinion, on whether these may jeopardize the completion in accordance with the Contract.
    - a report on the measures being (or to be) adopted to overcome delays in respect of each event or circumstances and the contractual basis therefore
  - comparison of the actual percentage completion of delivery compared with the planned for each critical path item identified in the Consultant's Work Program Report; where any delivery is behind the program, the Consultant shall give comments on the likely consequences and state the remedial action being (or to be) taken.
  - comparison of the actual percentage completion of delivery compared with the planned for each main item of Plant and Materials, if not included in the list of critical path items;
  - information about the use of provisional sums and an appropriate justification therefore;
  - photographs showing the status of manufacture and of progress on the Site;
  - copies of quality assurance documents, test results and certificates of materials;
  - safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations;
  - copies of all notices, consents, approvals, certificates or determinations given or issued by the Consultant within the reported period; and
  - other information, as may be required by the Client.
- iii. **Quarterly Construction Progress Report** — to be submitted within two weeks after the end of each quarter in the form acceptable to the Client, detailing the following:
  - Physical implementation of the Contract during the reporting period to the date of report;
  - Actual work schedule achieved and reasons for deviation from the Project Implementation Schedule;
  - Expected work schedule for the coming three months;
  - Payments to the Contractor and any other payments during quarter;
  - Matters that may affect the completion date and the contract costs;
  - The way the Client was involved in the supervision activities and the quality/efficiency of its performance.

## j) Other Deliverables

- i. **Accident reports.** A report of the circumstances of any significant accidents occurring on the site shall be forwarded to the Client with all due dispatch, the report shall include list of recommended preventive measures to be conducted aiming at preventing similar accidents in future.
- ii. **Claims Reports.** A report detailing the Consultant's assessment of each claim notified by the Contractor shall be prepared and submitted to the Client
- iii. **Monthly Site Meeting Minutes.** Within five working days after the meeting the Consultant shall issue the meeting minutes to the participants and designated recipients. The standard format for this report will be agreed with the Client.
- iv. **Weekly Site Meeting Minutes.** Within two working days after the meeting the Consultant shall issue the meeting minutes to the participants and designated recipients. The standard format for this report will be agreed with the Client.
- v. **Environment and Safety Report.**

## 6. Consultant requirement

General experience: having been in business for at least the past 10 years in the field of managing and supervising the construction of water and infrastructure.

Specific experience in the field of the assignment. Demonstrate similar services in terms of contracts size; nature of the Services (construction supervision and contract management), technical area and expertise (bulk and water network systems).

### a) Consultants Personnel

The Consultant shall provide adequate, qualified and experienced staff for the good and timely execution of the present assignment. All key staff has to be approved by the Client and it is the right of the Client to withdraw its approval at any time. Removed staff shall be replaced by others approved by the Client.

Each staff member shall be appointed for periods as indicated by the requirements of the works and approval by the Client. The Client reserves the right to require the Consultant at any time to increase the number or quality or change the formation of the staff. Curriculum Vitae (CV) shall be provided for each staff member. **The personnel descriptions given below are for key staff. Any additional staff needed according to the Consultant and logistical support including transportation either for local or international, cost of accommodation and any administrative cost shall be estimated by the Consultant and shall be included in its proposal.**

The Consultant shall employ suitably qualified engineers and other professionals who shall be competent to carry out any/or all of the duties in accordance with responsibilities and/or authorities that may be specified in or necessarily implied from the Contract.

The Consultant shall consider the prospective peaks of the construction activities and ensure the adequacy of staffing levels during such periods. The Consultant shall arrange for an appropriate head office back-stopping support for the Consultant's supervision team. The consultant key positions and requirements are shown in the following table:

Position	Required Qualification
<b><u>Resident engineer /Construction Manager</u></b>	Civil or Mechanical Engineer with at least 15 years professional experience, of which 10 years in water supply projects, with at least two similar projects in size and scope of work. Minimum 5 years' experience as a construction manager. He will be responsible of all packages.

<b>Water Engineer/ site supervision</b>	Civil or Mechanical Engineer with at least 10 years professional experience, of which 5 years in water supply projects, with at least one project similar in size and scope of work. Minimum 5 years' experience.
<b>Site engineer/ design review specialist</b>	Professional Hydraulic/Civil Engineer with engineering degree from a recognized university with a minimum relative design experience of 10 years including at least two similar assignments both in nature, value and under similar conditions. Practice of WaterCAD models, relevant computer skills.
<b>Electro-Mechanical Engineer</b>	Electro-Mechanical Engineer with at least 10 years professional experience, of which 5 years in similar water supply projects.
<b>Structural Engineer</b>	Civil Engineer with at least 10 years professional experience, of which 5 years in water supply projects and experience in structural design of water facilities.
<b><u>Specification/ Contract management Specialist</u></b>	Civil engineer, with at least 10 years professional experience in specifications and contract management, of which 5 years in international contracts including the World Bank (WB). This specialist will assist the Construction manager through administer of the contract.
<p>In addition to the above key and non-key specialists the Consultant will provide a backstopping pool of expatriate and/or local specialists to cover special needs arising under disciplines needed for assignment including but not limited to geotechnical sciences, civil structures, process engineering, pavements, quantity surveying etc. The cost of backstopping must be included in the fee of other experts.</p> <p>Non-key includes but not limited to the following:</p>	
<b>Field Inspectors</b>	College degree with at least 10 years professional experience, of which 5 years in supervision and/ or execution of water supply projects.
<b>ESIA/ESMP Engineer</b>	Health, Safety and Environmental Engineer with at least 10 years professional experience, of which 5 years in similar water supply projects, experienced in social survey, consultation process, resettlement, and livelihood restoration mechanisms, and also with knowledge of social and environmental international safeguards
<b>Geotechnical Engineer</b>	Civil Engineer with at least 8 years professional experience, of which 5 years in similar water supply projects.
<b>Surveyor</b>	The Surveyor shall have a valid license in surveying with at least 10 years professional experience, of which 5 years in survey of water supply projects.
<b>SCADA Engineer</b>	Mechatronic Engineer with at least 10 years professional experience, of which 5 years in similar water supply projects.

The estimated duration of the contract is 36 month including the defect liability period.

The estimated level of effort for the key experts is 130 man-month.

**b) Facilities to be provided by the Consultant**

The consultant shall ensure that experts are adequately supported and equipped. In particular it shall ensure that there is sufficient administrative, secretarial and interpreting provision to enable experts to concentrate on their primary responsibilities.



The consultant shall be responsible for main office running costs including office rent and communication costs, The consultant will be responsible for providing his experts with transportation to construction site as required. No equipment is to be purchased by the consultant on behalf of the client as part of this contract.

**c) Client's Input and Counterpart Personnel**

- The Client will provide the Consultant with relevant project documentation and reports.
- The client will provide support (invitation letters, notification to relevant authorities) in obtaining visas and entry permits to the West Bank
- No services, facilities and property to be made available to the Consultant by the Client.

Annex to: Terms of Reference for Bulk Water Transmission and Northeast Jenin Water Supply Distribution System under the Water Security and Resilience Program (WSRP), Consultancy Services for Construction Supervision

**Summary of Additional Optional Services through KfW funding**

Subject to approval by the German government, KfW intends to finance an additional package (package 4) of the WSRP. In such case, the intention is to extend the Consultant’s tasks to the below described extent through a separate contract. However, this summary of additional optional services through KfW funding shall not be understood as complete terms of references, but a summary of the most important tasks. No separate proposal shall be submitted for these intended services and no evaluation will take place at this time. The consultant may be asked to provide a separate proposal for the additional services by the time financing is secured through KfW, based on the unit rates offered for the WB components. The following table summarizes the package 4 and its components that might be implemented through KfW funds.

**Package 4:** Construction of Water Transmission Pipelines from Regional Tank/Alignment #03 to Jica Tank, Al-Marrah Tank, Burqin BPS, Burqin Tank, Qabatiya BPS, and the Construction of Burqin BPS and Qabatiya BPS.

**Table 1: KfW financed Package components**

Project Package	Funded by	Contracts’ name	Components
Package 4	KfW	Construction of Water Transmission Pipelines from Regional Tank/Alignment #03 to Jica Tank, Al-Marrah Tank, Burqin BPS, Burqin Tank, Qabatiya BPS	Alignment No.4 / Length = 1.585 KM
			Alignment No.7 / Length = 5.255 KM
			Alignment No.8 / Length = 2.317 KM
			Alignment No.9 / Length = 1.516 KM
			Alignment No.10 / Length = 0.655 KM
			Alignment No.11 / Length = 0.321 KM
			Alignment No.12 / Length = 0.625 KM
			Qabatiya BPS Burqin BPS

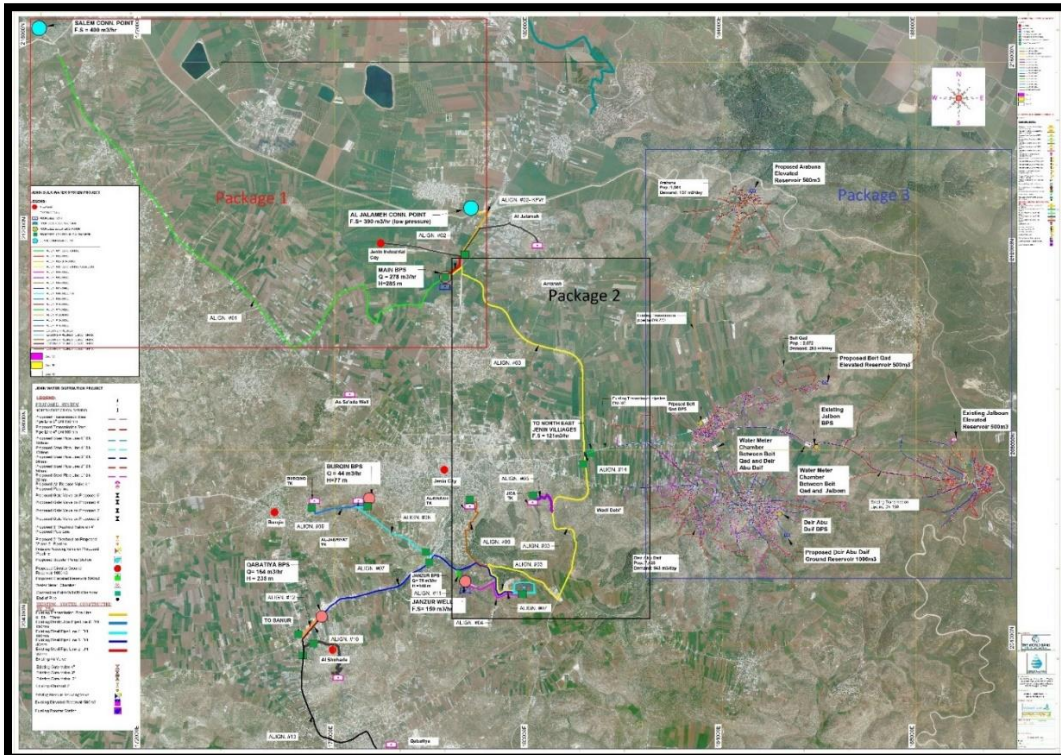


Figure 1: Layout of Package 4

The additional required tasks of the Consultant would be:

- 1. Simplified review of the component's available detailed design**
- 2. Assistance to PWA in tendering and award of works and supply contracts**
- 3. Supervision for infrastructure package 4**

### **1. Simplified review of the components available detailed design**

The commencement of the optional consultancy services shall begin with a short inception phase and include a joint Kick-off Meeting among PWA, the Consultant and other relevant stakeholders. During the inception phase all existing documents and data necessary to tender the package components shall be collected, screened and completed, if necessary (e.g. feasibility studies, baseline reports, design criteria and reports, bill of quantities, environmental and social safeguard documents and management plans, etc.). It shall be verified that the components of package 4 suit the Programs Sub-Component 1.1's need. Furthermore, a procurement plan shall be finalized, which reflects a possible division of the components into works lots, if necessary. The procurement plan shall be supported by an updated implementation and time schedule. The inception phase shall end with a short inception report containing all findings and the stakeholder's approval thereof (PWA and KfW).

### **2. Assistance to PWA in tendering and award of works and supply contracts**

PWA shall be supported in the elaboration of tender documents for each item of the procurement plan. The tender process shall strictly follow KfW's Procurement Guidelines. Methods of procurement shall be selected according to the stipulations of the stated procurement guidelines, which further detail the tasks of the consultant (e.g. documentation of the whole process including publication, clarifications, evaluation, award etc.).

Standard Bidding Documents made available by KfW shall be used, wherever possible. Considering the above, the necessary planning documents, designs, bills of quantities, etc. shall be integrated into the relevant prequalification and bidding document templates.

Prior to tendering of construction works the following conditions shall be complied with:

- All necessary documents, like construction permits, licenses etc. for infrastructure and supplies approved;
- Environmental and social impact assessment and management plans approved;
- Presentation of land use rights/ownership for the relevant sites.

### **3. Supervision for infrastructure package 4**

Supervision shall be carried out as per the terms of reference for packages 1 to 3 but might be slightly extended in scope (e.g. dedicated contract and claim management support to PWA).