

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC11611

Project Name	Baghdad Water and Sewerage Improvement Project (P150409)
Region	MIDDLE EAST AND NORTH AFRICA
Country	Iraq
Sector(s)	Water supply (60%), Wastewater Collection and Transportation (35%), Public administration- Water, sanitation and flood protection (3 %), Sub-national government administration (2%)
Theme(s)	City-wide Infrastructure and Service Delivery (95%), Municipal governance and institution building (5%)
Lending Instrument	Investment Project Financing
Project ID	P150409
Borrower(s)	Government of Iraq
Implementing Agency	Mayoralty of Baghdad
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	03-Dec-2014
Date PID Approved/ Disclosed	14-Apr-2015
Estimated Date of Appraisal Completion	21-Aug-2015
Estimated Date of Board Approval	17-Dec-2015
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

In 2013, the population of the Republic of Iraq was estimated at around 33 million, of which 66 percent lived in urban areas. About 28 percent of the total urban population in Iraq resides in Baghdad, which is by far the largest city in the country with an estimated population of 6-7 million.

Iraq's economy is heavily dependent on oil. This oil dependence makes the country highly susceptible to oil price fluctuations. While Iraq has achieved growth and reduced inflation in recent years, inadequate medium-term budget planning and expenditure, inequality, political disruption, and other vulnerabilities hold back progress. At the same time, Iraq still needs to rebuild its infrastructure and to strengthen its institutions, which were deteriorated and weakened through a history of authoritarian rule and wars. These tasks have been made difficult by on-going political

instability and the resultant security challenges. The development challenge for Iraq is to build its capacity to properly use its own substantial resources for the benefit of current and future generations and to diversify its economy away from an over-reliance on oil.

Iraq's poverty headcount index is relatively high at 20 percent in 2012 (compared to 23 percent in 2007). About 6.7 million Iraqis are classified as poor, half in rural areas and half in urban areas. However, with a poverty gap of only 4.5 percent, Iraq's poverty is considered to be relatively shallow. This means that a small amount of resources— through income growth or transfer mechanisms — could lift many of the poor above the poverty line. In recent years, progress has been made in reducing poverty, but progress in poverty reduction in Baghdad has remained below the country's average.

Sectoral and Institutional Context

The main water resources in Iraq are the Tigris and Euphrates rivers. In the absence of a water sharing agreement with Syria and Turkey, the level of water in the Tigris and the Euphrates has fallen by more than 60 percent over the past 20 years and its water quality has deteriorated significantly.

Access to improved water supply services increased from 84 percent in 2007 to 87 percent in 2012. Progress was made during the past decade in reducing the gaps in service provision between rural and urban areas, as access to piped water in rural areas increased from 51 percent in 2007 to 63 percent in 2012. The service gap between poor and rich, however, has shown very little change. Even though access to municipal water services has increased over the past decade, the quality of water service delivery remains a serious challenge. The poor quality of water supply service is reflected in the perceived low quality of potable water and the subsequent growing dependence on alternative service provision for drinking water. About 30 percent of the households surveyed in 2012 mentioned that they used bottled water to deal with deficient drinking water supplies (up from 10 percent in 2007). The poor service quality is also reflected in the intermittent delivery of water services. The 2012 IHSES study reported that of those with access to a piped network less than 17 percent had uninterrupted supply. Service interruptions in 2012 were very severe with almost 40 percent of those connected to a public network experiencing daily service interruptions. The problems with the poor state of drinking water service delivery has in the past resulted in protests.

The vast majority of the population has access to a water closet for their use. Safe wastewater collection services improved in all regions of the country except Baghdad. About 29 percent of the population had access to a sewer network in 2012 (compared to 19 percent in 2007), whereas another 54 percent (compared to 53 percent in 2007) had their sewage collected in a septic tank.

Government spending for the sector is very significant and has been estimated at an annual USD 4 billion (equivalent to about USD 120 per capita) in the past years. Yet, government's ability to invest and maintain its water and wastewater infrastructure has been seriously curtailed by the absence of basic operation and maintenance cost recovery and the subsequent high dependence on government spending to cover the costs of operation and maintenance. As a large part of the water budget is allocated to pay for operation and maintenance, there is less funding available for urgently needed investments. Recurrent funding made up about 34 percent of the federal funding spent, as most people do not pay for their water and wastewater services. In the ISHES survey, almost 54 percent of the households mentioned that they had not paid for water and wastewater services in the past 12 months.

The water and wastewater sector in Baghdad

The City of Baghdad and its suburbs cover 950 km² and is administered by the Mayorality of Baghdad (MOB). The City is divided into 14 municipalities. Each municipality is responsible for the services under its jurisdiction including water, wastewater, and solid waste collection. The water and wastewater services are administered centrally by the Baghdad Water Authority (BWA) and the Baghdad Sewerage Directorate (BSD), which are responsible for all infrastructure assets. The municipalities' role is limited to installing house connections and maintenance of neighborhood networks. The planning and implementation of investment projects in the municipalities is the responsibility of the MOB.

The BWA operates 11 water treatment plants where an estimated 2.9 Million Cubic Meter (MCM) is produced per day (which translates to 400-500 liter per capita per day based on an estimated population of 6-7 million; significantly higher than what is found in other countries). MOB estimates a daily shortage of an estimated 1 MCM, which shows that service delivery is far from efficient. The sewer system consists of network, pumping stations and sewerage treatment plant which covers about 92 percent of the city area. At least 1.1 MCM per day of wastewater flows untreated into the Tigris River.

In 2012, 95 percent of the households in Baghdad used piped water compared to 99 percent in 2007, showing that the capital area is unable to maintain access to water supply services. Similar to the trends in the rest of the country, service delivery in the capital city is characterized by perceived low quality of drinking water services and frequent supply interruptions. About 20 percent of the population in the capital city uses bottled water for drinking and another 14 percent depends on other forms of drinking water treatment. Service interruptions are common in Baghdad. Only 26 percent of the population of Baghdad does not experience any service interruptions. No less than 18 percent of the population has to deal with daily service interruptions.

The vast majority of the population has access to a water closet for their use. Access to the piped sewer network was 68 percent in 2012 (virtually unchanged from 2007). In 2012, 22 percent of the Baghdad population mentioned problems with sewer outlets. This problem is exacerbated by the illegal discharge of septic sewage collected from houses into rivers or onto land. Leakage from sewer pipes is contaminating potable water networks and groundwater aquifers, which aggravates health and environmental problems.

In Baghdad there are two main wastewater treatment plants, in Al-Rasafah called "Al Rustomiya" and the second wastewater treatment plant is located in Al-Karkh. Due to the recent conflicts, the efficiency with which these wastewater treatment plants are operated has dropped significantly (by an estimated 30 to 50 percent). In addition, frequent power cuts require continuous repairs. The plants, therefore, are not operating effectively allowing the wastewater to flow directly into the Tigris River.

Existing consumer tariffs are extremely low and do not cover the cost of water and wastewater. In a recent pilot, the average costs of water services were estimated at IQD 155 per cubic meter (the equivalent of USD 0.13). The earlier-mentioned ISHES 2012 survey showed that a large part of the population does not pay their water bill despite the low tariffs.

Relationship to CAS

The proposed project will contribute to the achievement of higher level objectives of the Government of Iraq and the World Bank. The Government's National Development Plan 2013-2017 focuses on achieving environmentally sustainable economic and social development, including improved delivery of water and wastewater services. The NDP anticipates almost universal water supply coverage by 2017 with 98 percent of the population served with improved water supplies, and plans for universal piped water coverage in Baghdad. As for sanitation, the NDP lays out its objective that all wastewater is to be treated in Baghdad.

The World Bank's Country Partnership Strategy (CPS) (2013-2016) for Iraq is fully aligned with the Government's National Development Plan and Poverty Strategy. The CPS is organized around three pillars: (i) improving governance, (ii) supporting economic diversification for broadly shared prosperity, and (iii) improving social inclusion and reducing poverty. Support for key infrastructure is a core part to share prosperity, whereas improved access to water and wastewater services will help to improve social inclusion and poverty reduction (Pillar III) as the ISHES survey showed that the poor suffer more from lack of access to improved water and wastewater services. When having access to the services, they tend to suffer more from poor service delivery (as measured by service interruptions) than other water users. By addressing inadequate water and wastewater service delivery in Baghdad, the project supports the Bank's Twin Goals.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The Project Development Objective (PDO) of BWSIP is to improve the quality of water and sewerage services in Baghdad. The Project will support improvements in high-priority and high-impact areas.

Key Results (From PCN)

Key PDO indicators will be:

- Direct project beneficiaries (number) , of which female beneficiaries (percentage) (core indicator)
- Number of households with interrupted water supplies
- Volume of wastewater collected and safely disposed of
- Volume of energy consumption per cubic meter of wastewater pumped
- Number of piped household water connections affected by rehabilitation works undertaken under the project (core indicator - intermediate indicator).
- Number of new piped household water connections that are resulting from the project intervention (core indicator - intermediate indicator).

III. Preliminary Description

Concept Description

The proposed project will support improvements in high-priority water and wastewater services that were identified in a Master Plan for Baghdad. A 2012 JICA funded assessment study of Baghdad's water and sanitation infrastructure in 2012 concluded that these proposed improvements in water and wastewater services are still urgently needed. While the Emergency Baghdad Water and Sanitation Project (closed in 2013) focused on the rehabilitation and reconstruction of the water distribution and sewage collection systems, this project will focus on the rehabilitation and

construction of major water and sewage pumping stations and treatment facilities that will improve the quality of the services. The project will not increase the volume of raw water abstracted (and hence water production) but will construct and rehabilitate works that will help to use the current production capacity more efficiently.

Component 1: Investments in Urban Water Infrastructure (USD 123 million)

Expansion and Upgrading of the Al Dora Water Treatment Plant (estimated cost USD 50 million): Al Dora area is located in Al Karkh side south of Baghdad, with a population of approximately 500,000, expected to increase to 700,000 people by 2030. The existing water treatment plant (WTP) capacity of 5,000 m³/hour was constructed in 1983. The current system provides services to only 225,000 people. The remaining population is served by a neighboring system in Al Rasheed municipality affecting the quality of the service of that system, which is now characterized by low pressure and low flows. To ensure that the water services can be improved in Al Dora and Al Rasheed an expansion of the current treatment capacity to 15,000 m³/hour is needed. The MOB has recently bought the land adjacent to the current WTP. The existing and the recently purchased land is sufficient for the expansion of the water treatment plant. There are no detailed designs available. MOB will hire a consultancy firm to finalize the designs and bidding document during the project preparation process.

Construction of the Baghdad reservoir complex R2 (estimated cost USD73 million): Baghdad city is mostly flat and does not require a sophisticated form of pressure management. The poor zoning of the existing system combined with limited conveyance capacity and lack of storage reservoir capacity and booster stations complicates the operation of the system and has a significant impact on service pressures (high pressure at source supplying remote areas and large pressure variations due to direct pumping from the network). Building the R2 complex will help eliminate direct pumping into the distribution network which currently generates high pressure variations. This investment will also provide sufficient storage capacity in case of power cuts or maintenance time. This is one of the storage reservoirs that were planned to be constructed in Baghdad as part of the water master plan that was prepared in the early eighties. This investment will ensure improved quality and reliability of the water supply services in the area served by the reservoir complex, which will serve more than 550,000 people in the Al Sha'ab Municipality of Baghdad (expected to increase to 750,000 people in 2030). The construction of this reservoir complex will also benefit the larger Baghdad water supply system as it will alleviate pressure on adjacent pressure zones, and hence benefit people living in areas adjacent to the R2 reservoir complex with improvements in the reliability of their services. The Baghdad Water Authority (BWA) has signed a contract with a consultant to update and increase the capacity of the complex to 150,000 cum (compared to the original capacity of 90,000 cum). Land for this complex is available and owned by the MOB and is currently used for parking by a neighboring university. The preliminary designs were completed and being reviewed by the MOB, final designs are to be completed in December 2014.

Component 2: Investments in Urban Wastewater Infrastructure (USD 75 million)

This component includes upgrading sewage pumping stations of different sizes, different ranges and in different locations in Baghdad. The main benefit of this component is that it would complete the original design of safe wastewater disposal and would eliminate dumping untreated sewage into the river or in open areas. A significant amount of untreated sewage is currently discharged to the river or into an open-drainage area close to homes, causing environmental and health hazards.

Upgrading of the Al Dora Sewerage Pumping Station (DPS) (estimated costs of USD 45 million): this is the main pumping station in the northern area of Tigris river, Al Karkh area, the DPS pump the sewage collected to Al Karkh sewerage treatment plant (of the 405,000 m³/day capacity, only 200,000 m³/day is currently operational while 205,000 m³/day is currently under rehabilitation). The pumping station was constructed in 1980s. It consists of 13 vertical sewerage pumps (330 V & 400 V) with a design capacity of about 13.5 m³/sec. An assessment of the current sewer pumping station (funded under the JICA loan) concluded that this pumping station requires replacement of all mechanical and electrical equipment, control system, and civil/structure reinforcement.

Upgrading of the Al Habibiya sewerage pumping station (estimated costs of USD 20 million): constructed in 1984 with a design capacity of 11 m³/sec. The Bills of Quantities have been recently updated by the design department in the Baghdad Sewerage Directorate.. The pumping station transfers the sewage to Al-Rustomiya wastewater treatment plant.

Rehabilitation of sewage pumping stations in Rusafa area (estimated costs of USD 10 million): there are 25 sewerage pumping stations that need full rehabilitation, these pumping stations are of different capacity, and mainly includes lifting and pumping stations.

The population expected to benefit from these improvements in the sewage pumping stations is estimated at 5 million people.

Component 3: Institutional Strengthening and Capacity Building Component (USD 10 million)

This component aims to improve the performance and efficiency of the MOB but more specifically the Baghdad Water Authority and Baghdad Sewerage Directorate to operate and manage their infrastructure systems. This component will include:

- Assistance to MOB in developing infrastructure investment plans supported by the introduction or improvement of information systems;
- Strengthening water and sewerage asset management capacity at both BWA and BSD and the municipalities;
- Strengthening social accountability measures to improve customer-responsiveness and improve other feedback mechanisms on BWA and BSD's performance;
- Technical assistance in utility management (including but not limited to improving billing and collection systems, tariff policy development and financial management);
- Strengthening project preparation/implementation with emphasis on planning, studies, design and contract management's capacity.

Component 4: Project Implementation and Monitoring Component (estimated costs of USD 2 million)

This component will finance the operational costs of the Project Management Team to coordinate, implement, supervise and monitor the project.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
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Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04		x	
Forests OP/BP 4.36		x	
Pest Management OP 4.09			x
Physical Cultural Resources OP/BP 4.11			x
Indigenous Peoples OP/BP 4.10		x	
Involuntary Resettlement OP/BP 4.12			x
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50			x
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	210.00	Total Bank Financing:	210.00
Financing Gap:	0.00		
Financing Source			Amount
Borrower			0.00
International Bank for Reconstruction and Development			210.00
Total			210.00

VI. Contact point

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