

Millennium Challenge Account – Jordan

Monitoring and Evaluation Plan

December 2016

Version 2

Table of Contents

| | |
|---|----|
| Preamble..... | 3 |
| List of Acronyms..... | 4 |
| Compact and Objective overview | 5 |
| Introduction | 5 |
| Program Logic | 5 |
| Compact Logic | 6 |
| 1. Projects and Activities | 8 |
| 1.1. Water Network Project..... | 8 |
| 1.2 Wastewater Network Project..... | 9 |
| 1.3. As-Samra Expansion Project..... | 10 |
| 1.4 Assumptions and Risks..... | 10 |
| 2. Projected Economic Benefits..... | 14 |
| 2.1. ERR Water Network Project | 14 |
| 2.2. ERR Wastewater Network | 15 |
| 2.3. ERR As-Samra Expansion Project | 16 |
| 3. Program Beneficiaries..... | 17 |
| 4. Monitoring Component..... | 19 |
| 4.1. Summary of Monitoring Strategy..... | 19 |
| 4.2. Data Quality Reviews..... | 20 |
| 4.3. Standard Reporting Requirements..... | 20 |
| 5. Evaluation Component..... | 21 |
| Specific Evaluation Plans | 23 |
| 6. Implementation and Management of M&E | 28 |
| 6.1. Responsibilities | 28 |
| 7. Review and Revision of the M&E Plan | 30 |
| 8. M&E Budget..... | 30 |
| 9. ANNEXES..... | 31 |
| ANNEX I..... | 31 |
| ANNEX II | 31 |
| ANNEX III..... | 31 |

Preamble

This Monitoring and Evaluation (M&E) Plan:

- is part of the action plan set out in the MILLENNIUM CHALLENGE COMPACT (Compact) signed on 25 October 2010 between the United States of America, acting through the Millennium Challenge Corporation, a United States Government corporation (MCC), and the Government of JORDAN, acting through its government;
- to support provisions described in the Compact;
- is being governed and following principles stipulated in the Policy for Monitoring and Evaluation of Compacts and Threshold Programs (MCC M&E Policy).

This M&E Plan is considered a binding document, and failure to comply with its stipulations could result in suspension of disbursements. It may be modified or amended as necessary following the MCC M&E Policy, and if it is consistent with the requirements of the Compact and any other relevant supplemental legal documents.

List of Acronyms

| | |
|-------|---|
| AE | Authority Engineer |
| CCR | Compact Completion Report |
| DMA | District Meter Area |
| DOS | Department of Statistics |
| DQR | Data Quality Review |
| ERR | Economic Rate of Return |
| FIDIC | Federation Internationale des Ingenieurs-Conseils |
| GoJ | Government of Jordan |
| HH | Households |
| IE | Implementing Entity |
| ITT | Indicator Tracking Table |
| JVA | Jordan Valley Authority |
| L/C/D | Liters per Capita per Day |
| MCA-J | Millennium Challenge Account- Jordan |
| MCC | Millennium Challenge Corporation |
| MCM | Million Cubic Meters |
| M&E | Monitoring and Evaluation |
| MIS | Management Information System |
| MWI | Ministry of Water and Irrigation |
| NRW | Non Revenue Water |
| PMC | Project Management Consultant |
| QDRP | Quarterly Disbursement Request Package |
| SPC | Samra Project Company |
| TBD | To be determined |
| TOR | Terms of Reference |
| US\$ | United States Dollar |
| WAJ | Water Authority of Jordan |
| WSA | Water Supply Area |
| WSH | Water Smart Homes |

Compact and Objective overview

Introduction

This Monitoring and Evaluation Plan serves as a guide for program implementation and management, so that MCA-Jordan (MCA-J) management staff, Steering Committee members, Executive Committee, Consultative Group members, program implementers, beneficiaries, and other stakeholders understand the progress being made toward the achievement of objectives and results, and are aware of variances between targets and actual achievements during implementation.

The Monitoring and Evaluation Plan is a management tool that provides the following functions:

- Describes the program logic and expected results. Gives details about what impacts the Compact and each of its components are expected to produce in economic, social, and gender areas and how these effects will be achieved.
- Sets out data and reporting requirements and quality control procedures. Defines indicators and identifies data sources, and reporting frequency in order to define how performance and results will be measured. Outlines the flow of data and information from the project sites to the various stakeholders both for public consumption and to inform decision-making. It describes the mechanisms that seek to assure the quality, reliability and accuracy of program performance information and data.
- Establishes a monitoring framework. Establishes a process to alert implementers, MCA- Jordan management, stakeholders, and MCC to whether or not the program is achieving its major milestones during program implementation and provides a basis for making program adjustments.
- Describes the evaluation plan. Explains in detail how MCC and MCA-Jordan will evaluate whether or not the interventions achieve their intended results and expected impacts over time.
- Establishes M&E requirements for disbursements and general roles and responsibilities.¹

Program Logic

Compact Background

The Government of the United States of America acting through the Millennium Challenge Corporation (MCC) and the Government of Jordan (GoJ) have entered into a Millennium Challenge Compact in the amount of two hundred seventy-five million one hundred thousand dollars (\$275,100,000) to be implemented over five years by the Millennium Challenge Account-Jordan (MCA-J). The agreement was signed on 25 October 2010 and entered into force on 13 December 2011.

¹ Substantial compliance with the M&E Plan is a condition for approval of each quarterly disbursement request by the country.

Compact Logic

The Compact Goal is to reduce poverty through encouraging the economic growth and development in Zarqa Governorate. The Compact consists of three interlinked projects: the Water Network Project, the Wastewater Network and the As Samra Expansion Plant Project.

The project aims at increasing the supply of water to households and businesses through improvements in the efficiency of water delivery system, the extension of wastewater collection and the expansion of wastewater treatment. Program logic is developed for the Compact in order to:

- a) Trace the relationships between projects, intermediate outputs, and final outcomes,
- b) Illustrate the overlapping relationships between project activities and desired outcomes, and
- c) Draw attention to the underlying assumptions.

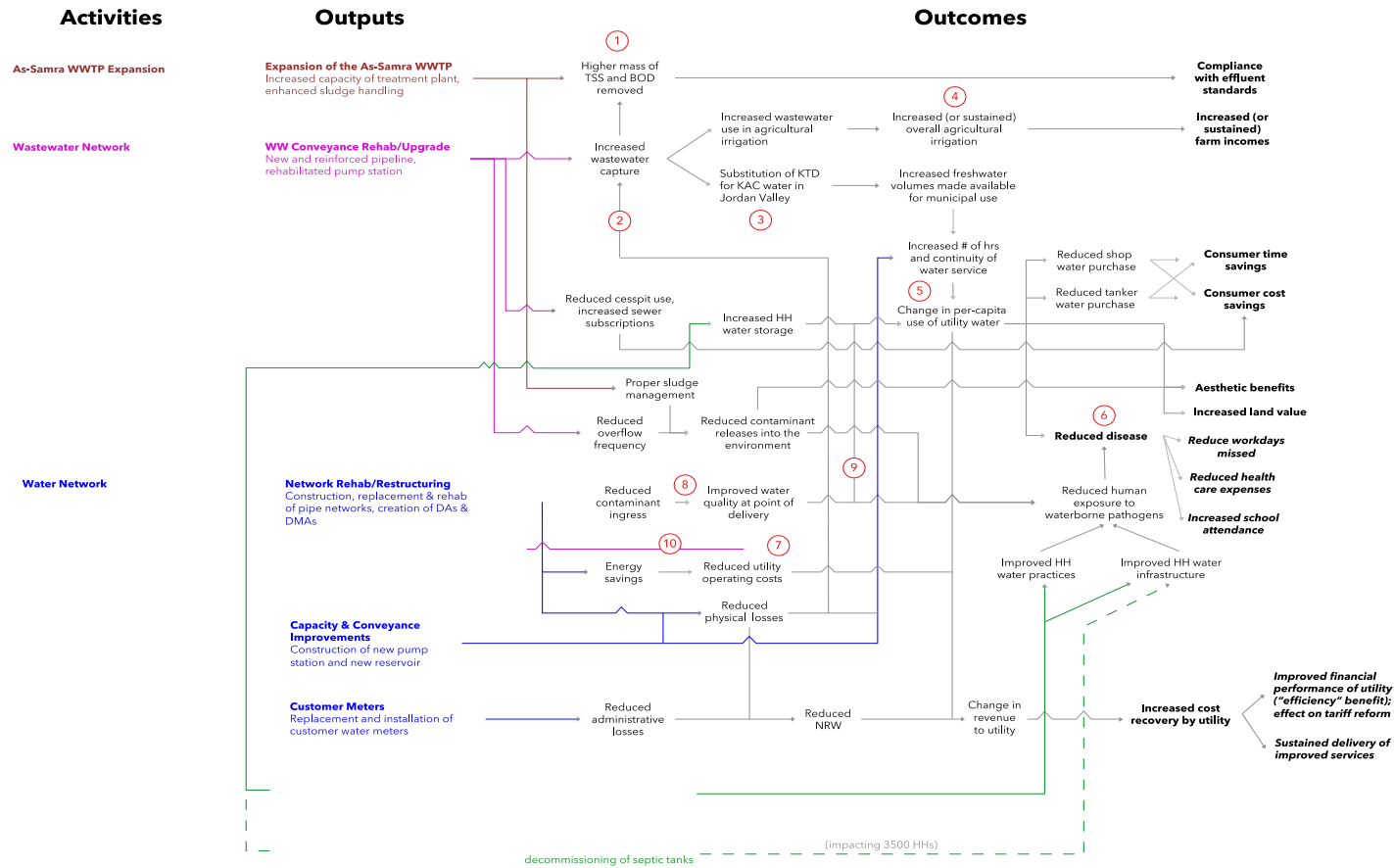
Figure (1) illustrates the Compact Logic; in specific, it describes the causal relationships among the program components and synthesizes expected outcomes intended to achieve the project objectives and the program goal. The increase in the effective supply of water through the projects comes from two main sources: First, reductions in water losses or non-revenue water (NRW)² will directly increase the amount of water and its duration (or reliability of service) that reaches end users of the water network. As more water becomes available through the network on a more continuous basis, the expectation is that households and businesses will reduce their consumption of more expensive alternatives, namely tanker water and treatment shop water.

Second, increased collection and treatment of wastewater will generate additional supplies of high quality treated water that can be used for irrigated agriculture. When that treated wastewater is substituted for surface water commonly used for irrigation in the Jordan Valley, equivalent supplies of freshwater can be diverted to higher value uses in the urban areas of Amman and Zarqa governorates where fresh water has the greatest economic benefit. Fresh water supplied through the network is then collected as wastewater from urban areas and sent for treatment to the As-Samra Wastewater Treatment Plant where it can then be reused in the Jordan Valley. Finally, the investments also contribute to reducing the need to develop increasingly expensive sources of water, for example Disi³, and provide alternatives to unsustainable extraction of water from Jordan's aquifers.

² NRW is comprised of Unaccounted for Water that is not billed as a consequence of physical losses (leaks) and administrative losses plus any unbilled but authorized consumption, including, for instance, water used for system flushing.

³ Disi Aquifer lies beneath the desert in southern Jordan and northwestern Saudi Arabia. The water is piped to the capital, Amman, and other cities to meet increased demand.

Figure1. Compact Logic Diagram



1. Projects and Activities

A preliminary analysis of constraints in consultation with different local parties and citizens concluded the importance of selecting the water sector in Zarqa Governorate out of the 12 Governorates in Jordan. Furthermore, the preliminary analysis was followed by a submission of concept paper by the GoJ and an assessment of the concept paper carried out by MCC. Finally, feasibility studies that included rigorous analysis of economic rates of return of the projects were completed.

1.1. Water Network Project

The Water Network Project, through the infrastructure investment activity, aims to reduce water losses and improve continuity of water service thereby improving the overall efficiency of water network delivery. In order to improve the distributional effects of the Projects, the Water Smart Homes Activity Project aims to improve the quality of home water systems and decrease costs that households, particularly poor households, in Zarqa Governorate incur to satisfy their subsistence water needs.

1.1.1. Infrastructure Investment Activity

The Infrastructure Investment Activity will restructure and rehabilitate transmission and distribution water supply systems in key areas of Zarqa Governorate. In addition to reducing physical leaks, this activity is designed to facilitate the transition of the water supply systems from periodic distribution under high pressure to more frequent, gravity-fed distribution. This Activity consists of the following sub-activities:

- i. Water Supply Area (WSA) Works –rehabilitate, restructure and upgrade works in the primary, secondary and tertiary water supply systems in Russeifa High and Low, Zarqa High and Batrawi Distribution Areas.
- ii. Strategic Infrastructure Works –replacement of defective customer meters and restructure and construct District Meter Areas.
- iii. Construct Reservoir and pumping station at Al-Basateen Area-Ruseifa.

1.1.2. Water Smart Homes Activity ⁴

The Water Smart Homes (WSH) Activity is designed to improve the conditions of home water systems and enhance the benefits that households, particularly poor households, gain from increases in the effective supply of water in Zarqa Governorate. This activity consists of two sub-activities:

⁴ In Sept 2009, the GoJ and MCA-Jordan contracted ECO Consult to carry out “the Study of the Benefits to the Poor of MCC financed water sector projects in Zarqa Governorate”. The study focus themes were: analysis of key factors affecting under-consumption for the poor and non-poor consumers, estimating the economic benefits of addressing the under-consumption key factors, prioritizing investment areas for water and wastewater services, and identifying and examining a set of policy, institutional, and household interventions and recommend an intervention for project preparation. Accordingly, a set of policy, management and operation, infrastructure investments, and household infrastructure interventions were examined throughout the study. These interventions were analyzed to evaluate the benefits to the poor and cost effectiveness of implementation, examine the overlap and complementarities of other programs, and assess the overall impacts to the consumers and the utility. As a result, the household Infrastructure and Knowledge Improvement (now the ‘Water Smart Homes Activity’) intervention was selected to be implemented throughout the compact.

- Water Smart Homes-Social, Outreach and Engineering Services (WSHs-SOES).

The outreach campaign will achieve the desired outcomes through education of the general public in Zarqa Governorate to encourage behavioral change. The outreach campaign will promote adoption of residential water best management practices to maintain water quality and quantity within households.

- Water Smart Homes-Infrastructure Works (WSHs-ISW).

The WSHs-ISW will achieve the desired outcomes through physical replacement and repair of in-home water and wastewater infrastructure. The Works consist of in-house repairs/repositions/renewal of the plumbing systems including (i) water storage systems, (ii) water pipes, (iii) sewage systems, (iv) kitchen and bathroom appliances, and (v) connection to WAJ sewage system. As part of the infrastructure works, female plumbers will be trained.

1.2 Wastewater Network Project

The Wastewater Network Project aims to increase access to the wastewater network, increase the volume of wastewater collected and reduce the incidents of sewage overflow. The increased wastewater collected is linked to the benefits derived from the As-Samra Expansion Project.

The main activities of the Wastewater Project will expand, rehabilitate and reinforce the network in East Zarqa Zone, West Zarqa Zone and west Russeifa. During the implementation of the wastewater project, costs savings as a result of transparent and competent tendering procedures as well as the efficient financial management allowed to expand the scope of services to include the Princess Haya – West Zarqa Zone.

A new WAJ Administrative Building will enhance the utility's operation and maintenance activities by placing them in the same location and creating more space for customer service. This upgrade of the current WAJ-Zarqa rented offices comes in time to support Miyahuna's contract management activities for Zarqa Governorate. The building will also serve to memorialize the MCC-Jordan Compact's less visible investments, namely the water and wastewater pipes now underground. WAJ Administrative Building was funded by the MCA-Jordan program, through savings achieved during the implementation of the Compact.

Ten High Pressure Jetting Sewage Cleaners also funded through savings achieved during the implementation of the Compact will be deployed by WAJ-Zarqa (6) and WAJ-Amman (4) to maintain the design capacity of the MCC-funded wastewater network so that volumes are maximized. This is particularly important as water volumes are expected to increase in Zarqa as a result of a currently Government of Jordan funded program designed to bring aquifer water from the Disi district to Zarqa. The High Pressure Jetting Sewage Cleaners will also be used to expand the capacity of Amman's wastewater networks which service design flows into As Samra WWTP. The combined effect will ensure the targeted capacity is sustained.

1.3. As-Samra Expansion Project

The As-Samra Expansion Project aims to increase the volume of treated wastewater that is available as a substitute for freshwater in agricultural use and protect existing agriculture from untreated wastewater⁵.

The main activity of the As-Samra Treatment Plant Expansion Project is its expansion. The expansion is designed to increase the hydraulic capacity of the existing treatment plant and its ability to handle suspended solids and biological materials, among other critical treatment requirements.

1.4 Assumptions and Risks

The program logic and expected outcomes and impact are based on specific assumptions about the linkages between individual project activities and the long-term goal of poverty reduction. These assumptions inform the economic return analysis while risks are external to program implementation but are likely to affect program success.

The assumptions and risks for each of the projects are presented below in Table 1: Assumptions and Risks. Note that as the analysis for the Wastewater Network Project and the As-Samra Expansion Project is done in tandem, so too are the assumptions and risk.

| Assumptions | Risks |
|-----------------------|-------|
| Water Network Project | |

⁵ The Ministry of Water and Irrigation under the national water strategy is compelled to optimize the use of fresh water as well as treated water. On October 13, 2009, as a condition precedent to disbursement of MCC 609 (g) funds, the Ministry of Water and Irrigation submitted to MCC a Memorandum of Understanding (MOU) between the Jordan Valley Authority and the Jordan Water Authority for the substitution of treated wastewater by fresh water. MCC and MCA-J will work with MWI to ensure the implementation of this MOU.

| | |
|--|---|
| <ul style="list-style-type: none"> • Of NRW, physical losses are assumed to be a much greater share than administrative losses. During Compact development, total NRW was estimated at roughly 57% with 50% physical and 7% administrative losses (all figures as a percent of total system input) in the MCC funded feasibility study. • It is assumed that none of the 38% (57-19%) of NRW that would be eliminated in Compact project areas (and would thus consist of extra water delivered to beneficiaries) is actually currently consumed by households (i.e. all of this reduction is physical loss). Since some physical losses (perhaps 10%) are probably inevitable, the implication is that only about 9% of the 57% (of the NRW consists of administrative losses (consistent with the estimate of 7% in consultant reports). • It is assumed that the extra water that is produced for consumption in Zarqa by reducing NRW would have been sourced from the relatively more expensive Disi project in the absence of the investment. In reality, it is quite possible that this alternative cost is irrelevant. For example, if water would not have been supplied to Zarqa from Disi, then there would be no “efficiency” gain. | <ul style="list-style-type: none"> • If the share of administrative losses is actually much higher than the estimate, the overall NRW figure may not improve as predicted since the intervention addresses primarily physical, not administrative, losses. Some administrative losses may be reduced with the introduction of improved meters. • Another method that was applied to data from the Zarqa water system, also indicates a level of NRW of 57%. However, it estimates that this is composed of 33% physical losses and 24% administrative losses, not the feasibility estimate of 50% physical losses, and 7% administrative losses. Meaning that residents in Zarqa are actually using more water than previously measured, and that the potential gains from reducing physical leakage could be smaller than anticipated. • If this did not represent additional water made available to households, it would be inappropriate to consider that the cost of the water would be saved relative to the next best alternative (Disi water). |
| <ul style="list-style-type: none"> • Households consume tanker water to cope with the poor quality of network water. The intervention will improve network water quality by limiting the time the network is under no pressure and contaminated water can seep into the pipes. Quality will also improve when less air is present in the system (due to continuous supply) which will prevent the formation of rust. With improvements of quality, households will shift their source of drinking water from high cost treatment shop water to low cost network water, and therefore generate a net savings. | <p>Consumption of treatment shop water may not decrease with improvements in network water.</p> <ul style="list-style-type: none"> • First, treatment shop water may be consumed for reasons poorly correlated to quality of network water such as status. • Second, perceptions of poor quality of network water may persist due to customers having incomplete information. If there are important differences in quality between source (e.g. shop v. network water), and these have not been considered in the demand analysis, the substitution may be much less than expected. |

| | |
|---|--|
| <ul style="list-style-type: none"> Households consume tanker water to cope with the limited quantity and frequency of network water delivered. As the availability of network water improves, households will shift their source of water from high cost tanker water to low cost network water, and therefore generate a net savings. Additional water that would be supplied to households due to reduced physical losses, now at lower cost to households, would be partially used to offset tanker and shop water purchases. This additional water might also provide other benefits as well, in terms of productivity due to greater quantity, reduced time costs associated with acquiring water, or other lifestyle benefits, etc. | Limited external risk |
| <ul style="list-style-type: none"> Consuming 50 liters per capita per day or less of water experience minor health costs (lost days of productivity and incurred medical expenses). Since hygiene requirements are not 100% met, when these households are able to consume 60 liters of water or more, the health costs are eliminated. | Limited external risk |
| Waste Water Network and As-Samra Expansion Projects | |
| <ul style="list-style-type: none"> Incremental freshwater substitution begins shortly after project completion and increases over a few years to reach 10 MCM per year. Fresh water transfers from irrigated agriculture to urban consumers. | <ul style="list-style-type: none"> Operational decisions may be taken to not increase or even reduce the amount of freshwater pumped out of the Jordan Valley. The Disi project will supply large quantities of freshwater to the municipal areas as scheduled in a fix priced contract. In response, water authorities may reduce the pumping out of the valley as municipal supplies could be met for several years based on the Disi increase (in the long term, substitution is very likely to resume). |
| <ul style="list-style-type: none"> Additional treated wastewater leads to incremental value-added as current supplies of water are notably short of optimum levels. Similarly, additional treated wastewater preserves the existing agriculture, which would otherwise be lost with diminishing supplies of water. | <ul style="list-style-type: none"> Any negative external shocks to the agriculture sector would diminish the magnitude of the assumed benefits (e.g. a fall in output prices, unfavorable weather conditions, etc.) |

| | |
|--|--|
| <ul style="list-style-type: none">• The ERR assumes a significant number of people connect to the wastewater network in response to the project activities, thus increasing the volume of water collected and treated. | <ul style="list-style-type: none">• Actual connection rates may be short of the projected connection rates. If so, the substitution and incremental agriculture production would be reduced. |
|--|--|

2. Projected Economic Benefits

ERR Categorization of Benefits from the Compact

The ERR calculations were conducted separately for a) the water network investments and b) the wastewater network + As-Samra expansion investments as shown in table 2 below.

Water network investments

Benefits were grouped as:

1. Water “efficiency” benefits, resulting from steep declines in non-revenue water (NRW), from 57% to 19% overall, following the network rehabilitation, which would decrease the cost of water supply relative to the alternative source for this extra water, i.e. the Disi project;
2. Consumer savings, from substitution of network water for tanker and shop water;
3. Health benefits for households, due to increased consumption of water.

Table 2: Summary of Economic Rates of Return

| Project | Original Economic Rate of Return (ERR) | Date Original Economic Rate of Return (ERR) Established |
|---|--|---|
| Water Network Project | 19% | 10 th of Jan 2011 |
| Waste Water Network & As-Samra Expansion Projects | 14% | 10 th of Jan 2011 |
| Compact ERR | 16% | 10 th of Jan 2011 |

Note: Time horizon of ERR estimated based on 20 years.

2.1. ERR Water Network Project

The economic analysis of **the Water Network Project** focuses on improvements in the efficiency of water supplied to the populations of Zarqa and Ruseifa 6. In 2010, most households received water through the water supply network only once or twice per week, making water availability a key

⁶ Water quality is not an issue that is being addressed through the chosen Projects as ‘the water quality data for the supply network for the year 2008 indicates a high level of compliance with key parameters such as presence of coliforms and chlorine residual. For the samples taken at the pumping station/reservoir sites and at various locations in the supply network, the level of compliance with the coliform standard of less than 1.1 MPN/1000ml was over 98%. In addition a chlorine residual was detected at 99% of sampling locations’, per ‘Zarqa Governorate Water System Restructuring and Rehabilitation’ Investment Master Plan, page 75.

challenge. At the same time, roughly half of the water supplied to the network was non-revenue water (NRW)—which includes a combination of physical water loss and administrative lapses. Evidence from the feasibility study suggests that a high portion of NRW losses are due to physical losses.

From the utilities perspective, reducing the physical loss component of NRW reduces both the average cost to deliver a cubic meter of water and the total quantity of water that must be produced for a given level of per capita consumption.

From the household's perspective, the problem of limited water availability is exacerbated in the summer months. In 2010, about 35 percent of households received network water deliveries no more than once per week, while another 30 percent received water deliveries no more than two times per week.⁷ To supplement these limited supplies, many households purchased additional supplies of water from “treatment shops” and private tanker trucks. According to a detailed socio-economic survey conducted by Jordan's Department of Statistics, nearly 30 percent of poor households in Zarqa consume shop water, at an average additional cost of JOD 10-15 (\$14.40-21.60) per month.⁸

Improvements in the water network that reduce water losses, enable more water to reach end consumers and extend supply hours would make higher quantities of water available for use in households. Because network water is substantially less expensive than other sources of supply, these changes would favorably impact household incomes or allow consumption of higher quantities of water at a given cost. Enhanced efficiency also shifts the water “supply curve” upward, reducing quantities that must be extracted from groundwater aquifers in order to meet the consumption needs of the region's growing population.

These efficiency gains, including shifts in household consumption patterns, represent an overall economic return (ERR) to the project of 19 percent. This return includes benefits to households where per capita consumption is low enough to cause health risks related to sanitation and hygiene, although these overall impacts were found to be modest. However, it does not include potentially higher value-added in commerce and industry, the benefits of which are difficult to model because data was not readily available. In Zarqa, commercial and industrial users account for roughly 15 percent of total water consumption, and it appears that much of the industry that has developed in the region does not rely on large water supplies.⁹

2.2. ERR Wastewater Network

The economic analysis of the **Wastewater Network Project** focuses on the increased efficiency of substituting treated wastewater for freshwater, when properly collected and treated. This is particularly true in the case of irrigated agriculture, which already uses large volumes of treated wastewater in

⁷ Cowi, “World Bank GPOBA Jordan Water and Wastewater Output Based Aid (OBA) Study: Task 1 Report - Feasibility,” Washington, DC, presentation, April 15, 2010.

⁸ 2009 Water Survey Report, Department of Statistics

⁹ Possible explanations that account for commercial and industrial users comprising only 15% of total water consumption includes type of industry, low agriculture and high use of personal wells and tanks.

Jordan. Given the relation between collection and treatment, the benefits of the Wastewater Network Project and the As Samra Expansion Project have been analyzed together.

Given the large share of water resources consumed in agriculture, expansion in the capacity to collect and treat wastewater increases the supply of high quality treated wastewater potentially available for substitution. Much of the infrastructure needed for this substitution currently exists. The existing As-Samra Wastewater Treatment Plant is a key part of the system, and wastewater treated at As-Samra is currently used in agricultural irrigation throughout the middle and lower portions of the Jordan Valley. In exchange for the treated wastewater, supplies of fresh surface water are pumped from the Jordan Valley to Amman and Zarqa Governorates, where they meet residential and commercial needs before flowing through the urban wastewater collection system. Eventually, much of the wastewater from Amman and Zarqa Governorates is treated at the As-Samra Wastewater Treatment Plant, from which it is conveyed to the Jordan Valley and used in irrigation. At present, the As-Samra Wastewater Treatment Plant cannot handle additional flows of wastewater, and the limitations on its capacity have prevented opportunities to expand the wastewater collection system in Amman and Zarqa Governorates. Thus, the decision to expand treatment capacity through the As-Samra Expansion Project enables the expansion of wastewater collection through the Wastewater Network Project. These two projects together may generate up to 10 million cubic meters of additional freshwater to Zarqa Governorate that will be available for substitution on an average annual basis.

The analysis values fresh water made available for domestic consumption at the marginal cost of water supply. Given the high costs associated with other options for supplying water, including the Disi aquifer project¹⁰ pumping from the Jordan Valley offers a lower cost alternative for expanding effective urban supplies¹¹. The analysis also includes a measure of added value in agriculture associated with improved reliability and availability of treated wastewater for agricultural cropping. Finally, the analysis also measures the negative impact on existing agricultural production if facilities for treating the rapidly growing volumes of wastewater from Amman and Zarqa were not realized, resulting in a deterioration of the quality of water making its way into the irrigation supply. The effects could include food safety risks and the loss of markets for agricultural goods. **Based on these assumptions, the estimated ERR for the two projects together is 14 percent.**

2.3. ERR As-Samra Expansion Project

The analysis of the economic returns to **the As-Samra Expansion Project** is identical to that already described for the Wastewater Network Project. Benefits derive from two principle sources: (i) the value of fresh irrigation water “freed up” for use in Amman and Zarqa through substitution with increased volumes of high-quality treated wastewater flowing through the As-Samra Expansion Project; and (ii) the prevention of a collapse in agricultural production values that would occur without appropriate treatment of wastewater.

¹⁰ Disi is expected to come online in 2014.

¹¹ Costs associated with Disi water were considered when ERRs were calculated for the As-Samra Expansion Project and the Wastewater Network Project.

3. Program Beneficiaries¹²

According to the MCC “Guidelines for Economic and Beneficiary Analysis”, beneficiaries of projects are considered individuals that are expected to experience better standards of living due to Compact activities aimed to increase their real incomes. The economic rate of return analysis for the projects gives details on benefit streams through which beneficiaries should experience increased income.

A general overview of the span of program benefits across the population of Jordan, used for Compact justification to MCC’s Investment Committee, is presented in the Table 3. The estimated total number of beneficiaries for the Jordan Compact is estimated as per the outlined methodology to reach up to 3 million citizens, which consists of beneficiaries of each project, it is worth mentioning that the net of beneficiaries who are expected to incur benefits from two or more of the projects, to avoid possible double-counting.

Table 3: Projected program participants and beneficiaries

| Projects | Program Participant Definition | Est. Benefits | Program Beneficiary Definition | Beneficiaries | Present Value (PV) of Benefits |
|---|--------------------------------|---------------|---|---------------|--------------------------------|
| Water Network Project | | \$197,800,000 | The projected total population of Zarqa Governorate who will benefit from the efficiency gains anticipated in the water supply network; over twenty years. | 1,634,000 | \$101,879,917 |
| Wastewater Network Project and As-Samra Expansion Project | | \$602,500,000 | Population of Amman and Zarqa Governorates that will benefit from additional supplies of freshwater that can be transferred to these areas as larger volumes of treated wastewater will be available for substitution in the Jordan Valley, in addition to individuals in the Jordan Valley who are expected to benefit from consistent supplies of high quality treated wastewater that can be used in irrigation; over twenty years | 2,023,000 | \$296,984,948 |
| Compact Total | | | | 3,000,000 | \$398,864,865 |

The **Water Network Project** is expected to benefit approximately 302,000 households, for a total of 1,634,000 individuals, over twenty years. This figure represents the projected total population of Zarqa

¹² MCC’s definition of a beneficiary is those individuals who realize improved standards of living, primarily through higher incomes, as a result of economic gains generated by the MCC-funded project...counting as beneficiaries all members of households that have at least one individual who realizes an income gain. <http://www.mcc.gov/documents/guidance/guidance-economicandbeneficiaryanalysis.pdf>. The beneficiary estimates include population growth and exclude accounts for double counting.

Governorate who may benefit from the efficiency gains anticipated in the water supply network. This figure includes an estimated 110,000 households, for a total of 600,000 individuals who will benefit directly from changes in domestic expenditure or higher consumption of water provided through the water supply network. The figure also includes an estimated 3,500 poor households, for a total of almost 19,000 individuals, who will benefit from direct assistance to rehabilitate their household water and sanitation systems under the Water Smart Homes Activity.

Within the Water Network Project an estimated four percent of beneficiaries will be among those living on less than US\$2.00 per day on a purchasing power parity basis, with those living on US\$2.00 – US\$4.00 per day representing another quarter of the total beneficiaries.

The **Wastewater Network Project** will provide direct benefits to the residents of East Zarqa, West Zarqa Princess Haya and adjacent neighborhoods, where up to 23,004 households, for a total of 126,522 individuals, will have opportunities to connect to new lateral sewer lines over the next twenty years and forego the installation, maintenance and potential health risks associated with the use of cesspits in an urban environment.

Together with the Wastewater Network Project, the As-Samra Expansion Project will benefit approximately 375,000 households, for a total of 2,023,000 individuals, in Amman and Zarqa Governorates. These households will benefit from additional supplies of freshwater that can be transferred to these areas as these Projects make larger volumes of treated wastewater available for substitution in agricultural applications in the Jordan Valley. This includes approximately 8,500 households in the Jordan Valley, for a total of 46,000 people that are expected to benefit from consistent supplies of high-quality treated wastewater that can be used for irrigation.

4. Monitoring Component

4.1. Summary of Monitoring Strategy

The Compact will be monitored systematically and progress reported regularly through the indicator tracking table (ITT). There are four levels of indicators that flow from the program logic framework: (i) process, (ii) output, (iii) outcome and (iv) goal. The various indicator levels map to the program logic and thus allow project developers and managers to understand to what extent planned activities are likely to achieve their intended objectives. Often most outcome and goal indicators are not monitored during the life of the Compact, but rather are reported through evaluations after the Compact is complete. Those levels of results typically take longer to be achieved.

Monitoring data will be analyzed regularly to allow managers of MCA-J and MCC to make programmatic adjustments as necessary with a view towards improving the overall implementation and results of the Compact.

Goal indicators measure the economic growth and poverty reduction that occur during, or, most likely, after implementation of the program. For MCC Compacts, goal indicators will typically be a direct measure of local income and are typically measured through post compact evaluations. Outcome indicators measure the intermediate effects of an activity or set of activities and are directly related through the Program Logic to the output indicators. Output indicators directly measure Project Activities. They describe and quantify the goods and services produced directly by the implementation of an activity. Process indicators measure progress toward the completion of Project Activities. They are a precondition for the achievement of Output Indicators and a means to ascertain that the work plan is proceeding on time.¹³

MCC has introduced common indicators for external reporting across all MCC Compacts. The common indicators relevant to the MCA-J Compact are included in this M&E Plan.

The Compact outlines the initial indicators for the Program. The M&E Plan builds on this information with additional indicators developed by MCC, MCA-J project managers and implementers in the early stage of project implementation.

Annex I includes the Indicator Definition Table that provides relevant details for each indicator by Project. It provides descriptions for the indicator structure by specifying each indicator's: (i) name; (ii) definition; (iii) unit of measurement; (iv) level of disaggregation; (v) data source; (vi) responsible party; and (vii) frequency of reporting.

To ensure that the Program is on track to meet its overall goals and objectives, the monitoring indicators will be measured against established baselines and targets, derived from ex-ante economic rate of return analysis, other types of analysis, and project planning documents. The targets reflect the underlying assumptions made in program design about what each activity will likely achieve. Baselines and target levels for each indicator are defined in Annex II.

¹³ The indicator levels are formally defined in MCC's Policy for Monitoring and Evaluation of Compacts and Threshold Programs.

During the review of the M&E Plan, indicators may need to be modified, thus modification and revisions to the indicators may only be made according to the MCC M&E Policy. Any significant modifications to the indicators or other content will be summarized in Annex III of the M&E Plan.

The MCA-J M&E Unit shall consult and assist implementing entities in setting up their data collection plan and reporting templates.

Gender considerations and gender-disaggregated indicators are incorporated into the Jordan M&E Plan; the ITT specifies which indicators will be disaggregated by gender at the household level. i.e., households headed by females. In Jordan, targets are not required for the number of women or men being served by a Project or Activity as the project designs are not directly linked to performance to gender-specific outcomes.

4.2. Data Quality Reviews

The Data Quality Review aims to review and analyze the utility, objectivity, and integrity of performance information. DQRs cover a) quality of data, b) data collection instruments, c) survey sampling methodology, d) data collection procedures, e) data entry, storage and retrieval processes, f) data manipulation and analyses and g) data dissemination.

M&E Unit conducted the first round of Data Quality Review (DQR) through the consultancy services of IDEA Int. (The Institute for Development and Administration); this review was conducted during the period of November 2013 to May 2014. In specific, the DQR assessed the on-going data collection procedures and reporting systems along with recommending and promoting future data gathering approaches and methodologies that will ensure enhancing the data quality.

In this context, preliminary findings was discussed and verified in a workshop conducted in February 2014, in which key stakeholders were involved, a follow up validation workshop was held to discuss the agreed-upon findings and the suggested recommendations by the concerned entities. Accordingly, the final report was submitted in May 2014. As a result of the DQR, the final report identified a set of findings and recommendations to support the M&E function of the Compact and enhance the quality of data delivered for this function.

Recommendations were discussed with IEs and put into action plan work in order to: (1) improve the on-going data collection and reporting mechanism among IEs, and (2) improve future data gathering approaches to improve delivered data quality. A second DQR was contracted in the final year of the Compact with the report expected by the end of the Compact.

4.3. Standard Reporting Requirements

Reporting to MCC: Quarterly Disbursement Request Package

Performance reports serve as a vehicle by which the MCA Management informs MCC of implementation progress and on-going revisions to Project work plans. Currently, MCC requires that MCA submit a Quarterly Disbursement Request Package (QDRP) each quarter. The QDRP must contain an updated Indicator Tracking Table (ITT) and a narrative report. A complete ITT presents the preceding quarters' indicator actuals and current quarter indicator progress against targets set forth in this M&E Plan. The ITT is the source for MCC's internal and external reporting on indicator progress.

Reporting to MCA and Local Stakeholders

Even though the QDRP is required to be sent to MCC, MCA-J should also use these reports and the data included in them to assess progress and performance internally. The M&E teams attempt to align MCC and MCA reporting so that data is used to inform decision-making at both levels.

5. Evaluation Component

While good program monitoring is necessary for program management, it is not sufficient for assessing ultimate results. Therefore, MCC and MCA-J will use different types of evaluations as complementary tools to better understand the effectiveness of its programs. As defined in the MCC M&E Policy, evaluation is the objective, systematic assessment of a program's design, implementation and results. MCC and MCA-J are committed to making the evaluations as rigorous as warranted in order to understand the causal impacts of the program on the expected outcomes and to assess cost effectiveness. The Evaluation Component contains three types of evaluation activities: (i) independent evaluations (impact and/or performance evaluations); (ii) self-evaluation, and (iii) special studies, each of which is further described below. The results of all evaluations will be made publicly available in accordance with the MCC M&E Policy.

Independent Evaluations

According to the MCC M&E Policy, every Project in a Compact must undergo a comprehensive, independent evaluation (impact and/or performance). The next section on Specific Evaluation Plans describes the purpose of each evaluation, methodology, timeline, required MCC approvals, and the process for collection and analysis of data for each evaluation. All independent evaluations must be designed and implemented by independent, third-party evaluators, which are hired by MCC. If the MCA-J wishes to engage an evaluator, the engagement will be subject to the prior written approval of MCC. Contract terms must ensure non-biased results and the publication of results.

For each independent evaluation, MCA-J and relevant stakeholders are expected to review and provide feedback to independent evaluators on the evaluation design reports¹⁴, evaluation materials (including questionnaires), baseline report (if applicable), and any interim/final reports in order to ensure proposed evaluation activities are feasible, and final evaluation products are technically and factually accurate.

Mid-Course Evaluations

The term "Mid-Course Evaluations" is meant to include a wide range of possible evaluations and assessments, including interim activity reviews, mid-term reviews, mid-term evaluations, ad-hoc evaluations, special studies, qualitative studies, and process evaluations.

Mid-Course Evaluations are not required for all Projects. However, MCC may decide to conduct such evaluations as necessary. MCA-J may also consider conducting Mid-Course Evaluations to review progress during implementation, compile lessons learned, and provide a qualitative context for

¹⁴ Evaluation Design Report http://www.mca-jordan.gov.jo/SystemFiles/Pages/file_635477671270618242.pdf

interpreting monitoring data. Mid-Course Evaluations can be used to improve the effectiveness and efficiency of implementation during the life of the Compact.

Depending on the type of Mid-Course Evaluation, it may be performed by a third party procured by either MCC or MCA-J or carried out directly by MCC or MCA-J staff.

Self-Evaluation

Upon completion of each Compact program, both MCC and MCA-J will comprehensively assess three fundamental questions: (i) Did the program of the MCA-J meet Compact objectives; (ii) Why did the Compact program meet or not meet these objectives; and (iii) What lessons can be learned from the implementation experience (both procedural and substantive). The MCA-J staff will draft the Compact Completion Report (CCR) in the last year of compact implementation to evaluate these fundamental questions and other aspects of Compact program performance. It should be noted that each department will be responsible for drafting its own section to the report for its own activities, subject to cross-departmental review. After MCA-J staff drafts the CCR, MCC staff, specifically the Country Team, will draft the Post Completion Assessment Report (PCAR) within 6 months after the compact ends to evaluate these same fundamental questions and other aspects of Compact program performance. Similar to the CCR, each division will be responsible for drafting its own section of the report, subject to cross-department review.

Final Independent Evaluations

The main objective of the Impact Evaluation (IE) is to determine whether or not the interventions of the Jordan Compact lead to changes in well-being (e.g., income, productivity, and possibly health), among beneficiaries living in the Zarqa governorate, as well as farmers in the Jordan Valley. In particular, the IE aims to establish a causal relationship between Compact interventions and social and economic outcomes by comparing the changes experienced over time by beneficiaries (the treatment group) to those experienced by non-beneficiaries (the control group). By carefully developing an IE design that applies state-of-the-art program evaluation methods for identifying comparable treatment and control groups, the IE will minimize the potential for bias in its estimates of Compact impacts.

For this purpose, three different types of surveys were deployed in the field. The first is a household-level survey, used to gather information on household demographics; water sourcing, storage, and use behaviors; preferences and satisfaction with water supply and sewer service; water quality measurement; coping and health costs; and expenditures, income, and other socio-economic characteristics. This survey is to be repeated twice a year at baseline, midline, and endline to capture the seasonal variation in water use within Zarqa. The second is an enterprise survey, which focuses on enterprise characteristics, production inputs and outputs, costs and revenues, and constraints with regards to use of water as an input to production. The third is an agricultural survey with farmers in the Jordan Valley to capture the crop cycles and their use of treated wastewater. The baseline household, agricultural, and enterprise surveys were conducted in the spring and winter of 2014, respectively, in conjunction with the Jordanian Department of Statistics (DoS).

All independent evaluation reports are publicly available and posted to the MCC and MCA-J website to ensure transparency and accountability.

Specific Evaluation Plans

Table 5: Evaluation of the Jordan Compact

| Evaluation Name | Evaluation Type | Evaluator | Data Source | Primary/ Secondary Methodology | Sample size | Survey name & Timing |
|---|---|---------------|--|--|---|--|
| Impacts of infrastructure improvements on urban households and enterprises in Zarqa (WNP and WWNP). | (Impact) Propensity score matching (PSM) in combination with difference-in-differences (DiD) and regression analysis. | Social Impact | Department Of Statistics (DOS) | Element A: 1-Household/enterprise surveys. 2- Utility monitoring. Element B: 1- Water vendor industry analysis. 2-land values survey | 3440 households; 345 enterprises. N/A | Baseline Survey Household: April 2014 – May 2014 Enterprise: November 2014 - January 2015 End line Survey: TBD |
| Impacts on irrigators downstream of As Samra treatment plant (WNP; WWNP; and AEP) | (Impact) Difference-in-Difference (DiD) and (Performance) | Social Impact | Department Of Statistics (DOS) | Element A: water balance modeling Element B: Agriculture survey | N/A 550 farmers | Agriculture survey: June 2015 –2015 |
| Impacts on WAJ-Zarqa Performance | Performance | Social Impact | Water Authority Of Jordan (WAJ-Z) Miyahuna Zarqa | Element A: Augmented tracking of utility performance Element B: Small number of basic engineering tests. Element C: Impact/Performance Evaluation. Other geo-coded data collection over areas included in Component 1 (and across Zarqa). | N/A | January 2015 – December 2016 |

Component 1: Evaluation of Water and Wastewater Network Project Impacts in Zarqa Governorate

Objective

The primary evaluation objective for the first IE component, which focuses on measurement of outcomes conducted in Zarqa, is to determine how outcomes experienced by individual and commercial/industrial sector enterprise units affected by the Compact's investments compare to what those individuals would have experienced had the investments not been made.

- Household surveys. Household-level surveys were developed to collect information on household demographics; water sourcing, pumping, storage, and use behaviors; preferences and satisfaction with water supply and sewer service; water quality measurement; coping and health costs related to intermittent water supply and poor water quality; and expenditures, income, and other socio-economic characteristics.
- Enterprise surveys. The enterprise surveys focused on enterprise characteristics, production inputs and outputs, costs and revenues, and assess constraints with regards to using water as an input to production. In addition, for assessing impacts on Zarqa's important informal sector.

Data Collection methodology

The baseline data collection event is necessary so that the Independent Evaluator can assess the impacts of the Jordan Compact on areas of interest (households, Enterprise and Agriculture) in Zarqa, Amman Governorate and Jordan Valley; specifically for Component 1: Impacts of infrastructure improvements on urban households and enterprises in Zarqa (Water Network Project and Waste Water Network Project).

DoS was responsible for developing and implementing work plans, revising and finalizing questionnaires (drafts provided by the Independent Evaluator), testing data collection instruments, recruiting, hiring and training field staff, implementing data collection and adhering to the deliverable schedule, managing documentation of the dataset, data cleaning, and delivering a cleaned data set and a final Data Collection Completion Report. However, it is also important to acknowledge that the timing of the arrival of Disi water in Zarqa (even if indirect, via effects on water allocation across urban areas in central Jordan) complicates this picture somewhat. To the extent that the baseline occurs prior to the arrival of any or most of the water volumes added by Disi, a naïve evaluation strategy that failed to account for Disi would misattribute this additional water (which may swamp the savings obtained from the reduction of physical losses and the primary substitution effect) to the Compact. Still, the plan is going to explicitly account for these added volumes by requesting data on water flows from Disi to Zarqa from the WAJ, and integrating this information into the overall integrating water balance analysis.

Evaluation questions

1. **Impacts on water consumption:** Does the Water Network Project (WNP) change the quantity of water consumed at the household (HH) and enterprise (E) levels (reduced leaks, increased reliability)?
2. **Impacts on environmental quality:** Does the Water Network Project alter the quality of water consumed at the HH / E levels? Does the Waste Water Network Project (WWNP) reduce the risk of disease from exposure to untreated wastewater?

3. **Impacts on expenditure:** Does the Water Network Project affect time and money expenditure on water ('secondary' substitution effect)? Does the WWNP change consumer expenditure on wastewater management and disease prevention and treatment?
4. **Impacts on income:** Does the Water Network Project change HH / E income?
5. **Impacts on asset value:** Does the WNP / WWNP affect property/asset values?
6. **Overall impacts on welfare in Zarqa:** What is the net economic value of changes in quantity and quality of water consumed?

Component 2: Evaluation of impacts on agriculture downstream of As Samra and in the Jordan Valley

Objective

As human populations push against the constraints posed by limited conventional freshwater resources, there is hope that wastewater reclamation will become an increasingly valuable means of maintaining human welfare and enabling future growth. In few places is the necessity for viewing wastewater as a resource rather than a nuisance more pronounced than in the water-scarce countries of the Middle East, of which Jordan is a prime example. Indeed, much of the economic rationale for the MCC investment program in Zarqa does not rest in the benefits of these activities to households residing specifically within the zones of Zarqa receiving infrastructure improvements, but rather in its indirect effects on increased water availability in Jordan. These effects would occur via the substitution of reclaimed wastewater (i.e., the product of wastewater treatment that meets water quality requirements for a specific end use) for more expensive water sources (specifically, conventionally sourced freshwater from the Jordan-Yarmuk surface water system), as well as the preservation of high value agricultural activities in the Jordan Valley.

Data collection methodology

For the purposes of baseline data collection, 550 farmers were roughly planned to survey (110 farmers in each of five differentially affected areas to determine crop production and returns for the previous year, along with measures of water supply from different sources. Using the data from these 550 farms, the independent evaluator will conduct more detailed power calculations to determine the appropriate sample size for annual tracking of the balance of water sources, production, and net profits at regular and more frequent (e.g. quarterly) intervals. It is understood that metering is very limited in the Jordan Valley, so the independent evaluator will rely on self-reports of water consumption and third-party ground-truthing from the JVA and other sources. The annual surveys will include questions on farmer characteristics (education, training, knowledge, relative influence, risk preferences, etc.), farm attributes (soils, canal location, etc.), farm equipment and use of advanced technology, inputs and production, animal husbandry, prices of agricultural products, and farm and non-farm sources of income.

Evaluation questions

4. **Impacts on water sourcing:** Does the combined WNP/WWNP/AEP result in increased irrigation with recycled wastewater? Does the volume of irrigation using conventional freshwater correspondingly decrease?
5. **Impacts on farming costs:** Does the combined WNP / WWNP / AEP lead to changes in farm input costs?
6. **Impacts on farm output:** Does the combined WNP / WWNP / AEP lead to changes in the value of farm output in affected areas?
7. **Impacts on asset value:** Are farm values affected by the WNP / WWNP / AEP investments?
8. **Overall impacts on farm welfare:** What is the net economic value of changes in irrigation?
9. **Impacts on compliance:** Does the AEP result in increases in the quantity of wastewater that meets effluent standards prior to discharge into the environment?

Component 3: Evaluation of impacts on the performance of Miyahuna-Zarqa

Objective

The impact design aims to measure the welfare changes among direct beneficiaries of the water and wastewater sector interventions included in the Jordan Compact. Yet one of the very important challenges facing the IE of this program stems from the very real possibility that most of the benefits may not be directly reflected in welfare changes among households and enterprises in Zarqa, nor among the farmers who may receive additional flows of treated wastewater for their irrigation activities. Indeed, many of the benefits of the investments may be captured by the local water utility, Miyahuna-Zarqa, or by other larger government institutions responsible for water delivery in Jordan the MWI. Benefits captured by these institutions could in turn lead to reductions in public debt in Jordan and free up capital for other productive economic activities.

Data collection methodology

Comparative utility-scale performance. The Monitoring & Evaluation Unit of MCA-Jordan is already collecting a variety of utility performance indicators at the level of the WAJ-Zarqa utility, and these are useful for the evaluation, to generate a more complete picture of the performance of the water and sewer networks under utility management, as well as operational efficiency, the degree of utility cost recovery, and overall financial sustainability, it was important to augment these measure with additional indicators. These proposed measurements are consistent with typical norms for utility management / monitoring best practice, as well as with the current reporting and analysis conducted by the Jordanian water utilities (Aqaba, Yarmouk and Miyahuna) currently reporting to the Project Management Unit (PMU) of the WAJ, responsible for privatization of water utilities.

Evaluation method

Element A: Augmented tracking of utility performance

Element B: Small number of basic engineering tests

Element C: Other data collection

Evaluation questions

1. **Impacts on utility cost recovery:** Does the net cost recovery of the utility improve due to the Compact, and is this related to service improvements?
2. **Service improvements:** At the utility level, are there measurable changes in service delivery quality trends in Zarqa relative to those of other municipal utilities in Jordan?

M&E Post-Compact Evaluation

In conjunction with the Program Closure Plan, MCC and MCA will develop a post-Compact monitoring and evaluation plan designed to observe the persistence of benefits created under the Compact. This plan should describe future monitoring and evaluation activities, identify the individuals and organizations that would undertake these activities, and provide a budget framework for future monitoring and evaluation which would draw upon both MCC and country resources.

In order to prepare for post-compact monitoring by the Government, the MCA-J M&E Unit should identify a post-compact point of contact (POC) for MCC early on in the program and work with that POC to build understanding of the MCC program and monitoring process. This POC should be part of the Government entity that will commit to continuing M&E of Compact investments after the Compact End Date. The M&E Unit should also identify the team that will be responsible for reviewing evaluation reports that are delivered post-Compact (e.g. project leads), to ensure that the relevant project stakeholders review and provide feedback prior to the publication of final reports.

Special Studies

Either MCC or the Government may request special studies or ad hoc evaluations of Projects, Activities, or the Program as a whole prior to the expiration of the Compact Term.

6. Implementation and Management of M&E

6.1. Responsibilities

M&E Unit of MCA-Jordan composed of three positions; M&E Director who is involved in managing and leading the work responsibilities, and two M&E officers who are responsible on implementing the activities and tasks described in the job description and support the M&E Director. The job description of the M&E Director include the duties that are assigned, the M&E Director is responsible for overall monitoring and evaluation of the program, specifically:

- Responsible for the overall M&E strategy and implementation, to periodically measure and report on the performance, results and impacts of the Compact, which will inform implementation decisions and help the Compact achieve its objectives.
- Responsible for ensuring MCA-Jordan compliance with MCC's Policy for Monitoring and Evaluation.
- Draft the Compact M&E Plan.
- Report to the MCA-Jordan Deputy CEO - Administration, with guidance from MCC M&E counterparts and the MCC Resident Country Director.
- Supervise a team of specialists to collect, analyze, and report on data and other M&E activities.
- Monitor M&E budgets in terms of estimated contract values, expenditure, and disbursements against deliverables and reported results.
- On a monthly basis, review M&E data with MCA-Jordan Directors and MCC representatives to ensure that the Program is accomplishing its objectives and corrective actions are taken if changes are warranted
- Coordinate and help set up the Management Information System (MIS) for the Compact, including all related activities such as data collection, data analysis, and reporting.
- Manage data collection for M&E, including selecting key metrics, designing survey instruments and interview questionnaires for implementing entities, and developing data collection tools such as forms, check lists, and reporting templates. Ensure that the M&E Plan and Economic Rate of Return (ERR) analysis are modified and updated as improved information becomes available (updating indicators, baselines, and targets upon the receipt of new or higher quality data).
- Oversee data quality control of Program M&E components through site visits, review of Program reports, and review of secondary data to compare program results to the overall context.
- Work with MCC and stakeholders to implement the planned impact evaluation, and potentially develop additional qualitative and quantitative impact evaluations.
- Work with implementing entities to build their M&E capacity. This includes developing M&E training sessions, guidelines, reporting templates, and data collection tools with implementing agencies to assist them in their M&E responsibilities.
- Provide M&E guidance to counterparts (e.g. MCA-Jordan project directors, M&E focal points, project contractors and implementing entities) throughout the Compact implementation process

- Collaborate with the procurement team to prepare and conduct procurement of external M&E contracts.
- Manage M&E related contracts for services such as data collection, data quality reviews, and evaluations.
- Identify and coordinate with other donors and agencies involved in statistical capacity building and data collection to help the MCA-Jordan and MCC learn and seek the feedback of stakeholders.
- Ensure that the implementing entities comply with M&E reporting requirements. Manage consultants or contractors and work with implementing entities to ensure that M&E deliverables are of high quality and submitted in a timely manner.
- Coordinate the preparation of periodic reports for MCA-Jordan Board of Directors, and MCC (including the Quarterly and Annual Performance Reports).
- Coordinate the conduct of special studies and ad hoc evaluation, as needed, to assess impact of Compact activities.
- Provide M&E-related comments on all other MCA-Jordan technical documents (e.g. work plans, Terms of Reference, and Implementing Entity Agreements).
- Respond to MCC requests for information on data sources, data measurement methods, frequency of data collection, and disaggregation.
- Disseminate timely and relevant information to the Government of the Kingdom of Jordan, civil society, the private sector and the donor community. Ensure the periodic reports are made publicly available on the MCA-Jordan's web page.

Furthermore, the job description of the M&E officer include their responsibilities, in specific, the two M&E Officers will support the M&E Director in performing the M&E activities, specifically:

- Manage the information-gathering process to report performance quarterly and annually.
- Institutionalize monitoring activities including, data collection, reports preparation, and documentation. This includes also exchanging and communicating information, results and lessons learned, with MCA-J and stakeholders.
- Document good practices, analysis trends, and cross-cutting implementation issues.
- Provide support in the oversight of data quality control and review.
- Ensure the periodic reports are made publicly available on the MCA's web page.
- Provide any other required assistance and guidance to the M&E unit; this includes working with external evaluators in the implementation of impact evaluation missions, responding to MCC requests for information on: data sources, data measurement methods, frequency of data collection, disaggregation, etc.

All MCAs must use the MCC MIS for reporting the QDRP (including the ITT) to MCC. In addition, an MCA may decide to develop its own MIS for M&E to collect data from implementers. However, any MIS development must be coordinated closely with both the MCC MIS and the MCA MIS initiatives.

7. Review and Revision of the M&E Plan

The M&E Plan is designed to evolve over time, adjusting to changes in program activities and improvements in performance monitoring and measurement. In the fourth quarter of every year of the compact, or as necessary, the M&E Director of MCA-J and representatives of MCC M&E staff will review how well the M&E Plan has met its objectives. The review is intended to ensure that the M&E Plan measures program performance accurately and provides crucial information on the need for changes in project design. The review is intended to ensure that the M&E Plan:

- Shows whether the logical sequence of intervention outputs and outcomes are occurring;
- Checks whether indicator definitions are precise and timely;
- Checks whether M&E indicators accurately reflect program performance;
- Updates indicator targets, as allowed by the MCC M&E Policy; and
- Adds indicators, as needed, to track hitherto unmeasured results.

The M&E Plan will be revised by MCA, in agreement with MCC M&E, when the need for change has been identified in the review. The revised M&E Plan will be submitted to the MCA-J and the Board of Directors for approval if changes are substantial and to MCC for acceptance.

8. M&E Budget

The budget for the implementation of the proposed M&E activities for the five-year term of the Compact is US\$2.8 million. The M&E budget does not include the M&E staff in the MCA management unit whose salaries and field trips are included in the administrative budget of the Compact. The budget should not exceed the total amount over the five years, but the distribution of funding between line items and years may be adjusted according to the results of the M&E Plan's reviews or quarterly if needed.

While the resources for the carrying-out of surveys are allocated by MCA-J from the Compact funds, the evaluation design and analysis is to be funded directly by MCC. The final allocations as per the tasks as follows:

| Activity | Budget (in USD Thousands) | | |
|--|---------------------------|----------------|----------------|
| | Original | Mar-12 | Dec-14 |
| Development and implementation of an M&E information system (including equipment, ongoing support, and training) | \$300 | \$300 | \$200 |
| M&E Training | \$30 | \$60 | \$80 |
| Performance Indicator Monitoring: Compiling & Analysis, Data Quality Review | \$199 | \$199 | \$300 |
| Collecting Data and Surveys: Household surveys, special studies/consultancies | \$1,842 | \$1,812 | \$1,786 |
| Midterm and Final Evaluations | \$350 | \$350 | \$350 |
| Communication | \$89 | \$89 | \$93 |
| Total | \$2,810 | \$2,810 | \$2,809 |

9. ANNEXES

ANNEX I

See Excel template

ANNEX II

See Excel template

ANNEX III

See template

[Guidance: This will be automatically generated when M&E Plan revisions are approved in MCC MIS.]

Jordan: Compact Program Goal and Outcome Indicators
Annex I: Indicator Documentation Table

| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
|--|-----------------|--------------------------------------|--|---------------------------|--|-----------------------------------|--|------------------------|--|
| Compact Wide Indicators: Goal, Outcome, and Process Level | | | | | | | | | |
| | Goal | Poverty rate in Zarqa Governate | Official poverty rate in Zarqa Governorate | Percentage | | DoS Surveys | DoS | Other | It was found out that the amount of sampling error is 11% in Zarqa. This indicates that there is a high level of inaccuracy in the Zarqa-level poverty rate. |
| | Outcome | Network water consumption per capita | For Zarqa Governorate: [Annual billed residential and non-residential (in m3)] / [population of governorate] * 1000 / 365 (l/c/d). | Liters per capita per day | Water Customers (Residential, non-residential) | Miyahuna IT Unit Quarterly report | Miyahuna-Zarqa | Quarterly | <p>This indicator focuses on effective supply of water increased through improvement in water delivery, extension of waste-water collection, and expansion in waste-water treatment.</p> <p>As of the M&E Plan revision approved in October 2016, the targets for this indicator are not expected to be achieved. This is because the original targets were set based on the assumption that population growth through the life of the compact would remain consistent with previous level of growth. However, the dramatic increase in population due to the refugee crisis has proven this assumption to no longer hold.</p> |
| WS-14 | Outcome | Residential water consumption | The average water consumption in liters per person per day. | Liters per capita per day | | DOS Surveys | Independent Evaluator and Department of Statistics | Other | <p>Calculation based on annual water consumption where non-residential constitutes around 5% of the total water. Billed residential network water consumption + tankers, treatment shops, and bottled water (l/c/d). (Baseline Report)</p> |
| WS-10 | Outcome | Operating cost coverage | Total annual operational revenues divided by total annual operating costs. | Percentage | | Miyahuna-Z financial reports | PMU | Annual | <p>This indicator focuses on financial performance of the utility to make a determination if the utility is financially viable and can cover its costs. Calculation: $OPC = R/C$ where:</p> <p>OPC = Operational Cost Coverage R = Total Operational Revenue C = Total Operational Cost (including maintenance)</p> |

Jordan: Compact Program Goal and Outcome Indicators
Annex I: Indicator Documentation Table

| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
|--|-----------------|--|--|-----------------|----------------|-----------------------------------|--------------------------------|------------------------|---|
| Compact Wide Indicators: Goal, Outcome, and Process Level | | | | | | | | | |
| | Outcome | Operations and maintenance costs | Total annual Miyahuna operational costs including maintenance. | US Dollars | | Miyahuna-Z financial reports | PMU | Annual | Please note, this indicator is the same as denominator for Operating cost coverage; however, it has been included as a separate indicator to easily track the amount spent by Miyahuna on operations (including maintenance). |
| WS-4 | Process | Percent disbursed of water and sanitation construction contracts | The total amount of all signed construction contracts for construction, reconstruction, or upgrading of water and sanitation works disbursed divided by the total value of all signed contracts. | Percentage | | Contracts; MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |
| WS-3 | Process | Value of signed water and sanitation construction contracts | The value of all signed construction contracts for upgrading of water and sanitation works using compact funds. | US dollars | | Contracts | MCA-J Financial Accountability | Quarterly | |
| WS-4.1 | Process | Value disbursed of water and sanitation construction contracts | The value disbursed of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of water works. | US dollars | | MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |

| Jordan: Water Network Project Indicators Annex I: Indicator Documentation Table | | | | | | | | | |
|--|-----------------|--|---|---------------------------|--|---------------------------|--|------------------------|---|
| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
| Water Network Project Outcome, Output, and Process Indicators | | | | | | | | | |
| | Outcome | Use of tanker water | Annual average quantity of tanker water consumed per person (l/c/d) in Water Network Project areas. | Liters per capita per day | | DOS Surveys | Independent Evaluator and Department of Statistics | Other | Baseline value for this indicator is taken from the DOS 2009 survey. Future values are taken from the Social Impact Evaluation. While the samples for the two surveys are similar, they are different. |
| | Outcome | Use of treatment shop water | Annual average quantity of treatment shop water consumed per person (l/c/d) in Water Network Project areas. | Liters per capita per day | | DOS Surveys | Independent Evaluator and Department of Statistics | Other | Baseline value for this indicator is taken from the DOS 2009 survey. Future values are taken from the Social Impact Evaluation. While the samples for the two surveys are similar, they are different. |
| WS-16 | Outcome | Incidence of diarrhea | The percentage of individuals reported as having diarrhea in the two weeks preceding the survey. | Percentage | Age (Under age 5, 5 years and older) | DOS Surveys | Independent Evaluator and Department of Statistics | Other | Baseline value and future values for this indicator is taken from Social Impact Evaluation. |
| | Outcome | Customer dissatisfaction with supply service | Percent of water utility customers "very dissatisfied" or "quite dissatisfied" with frequency, duration, and pressure of supply (average of the three dimensions) in Water Network Project areas. | Percentage | | DOS Surveys | Independent Evaluator and Department of Statistics | Other | Value for this indicator was updated based on the baseline final report where in Arabic "not very good" and "quite dissatisfied" is the same as "bad" and "very dissatisfied." |
| | Outcome | Customer dissatisfaction with water quality | Percent of water utility customers "very dissatisfied" or "quite dissatisfied" with potability of network water in Water Network Project areas. | Percentage | | DOS Surveys | Independent Evaluator and Department of Statistics | Other | Value for this indicator was updated based on the baseline final report. |
| WS-8 | Outcome | Non revenue water | The difference between water supplied and water sold (i.e. volume of water "lost") expressed as a percentage of water supplied. | Percentage | Geographic (Network-wide, Non-Compact Areas, Compact DMAs) | Miyahuna Quarterly report | Miyahuna-Zarqa | Quarterly | <p>The measurement of Non-Revenue Water in Zarqa is highly variable and prone to measurement error. NRW is composed of two key data sources: the amount of water entering the network and the amount of water leaving the network. In Q3 of 2014, Miyahuna-Zarqa installed inflow meters on their network and began measuring the amount of water supplied to the network in Zarqa. All the measured amounts of water supplied to Zarqa prior to the installation of those meters were estimates. These meters represent significant improvements in the quality of measurement of the inflow of water to Zarqa.</p> <p>Similar strides have not yet been made in measuring the amount of water leaving the network in Zarqa. Miyahuna-Zarqa measures an estimate of 80 percent of the customer meters in their network every quarter, which does not align with the monthly inflow measures. As a result, they use a combination of data, forecasting, and estimation to calculate how much water has left the network. In addition, there are often an unknown number of outflow points in any part of the network, making it extremely challenging to hydraulically isolate portions of the network to accurately capture NRW. This introduces significant measurement error and helps explain the sizeable variance in the NRW figure from quarter to quarter.</p> <p>Due to these well-known challenges in data quality, a baseline that is simply a measurement of NRW in one quarter will likely be inaccurate and could vary by as much as ten points the next quarter. To account for the variation and insure that the assessment of Compact results is not disproportionately impacted by measurement error, the MCC and MCA-J team believe that the best approach is to take an average of the quarters after the new inflow meters came online and the first portion of the MCC investment as operationalized.</p> <p>The baseline will be set to an average of the NRW numbers from a period after the 3rd quarter of year 3 and a year before Miyahuna started operating their first connection point (Q3 of Y4 is MCC's best estimate based on conversations with Miyauna-Zarqa). If we average NRW from Q4 of Y3 to Q3 of Y4, we get a baseline of 61.56.</p> <p>While measuring network wide NRW remains challenging, it is possible to accurately capture the NRW in the MCC DMA's. As the MCC investment was designed to be hydraulically isolated, we can control the inflow, measure it, and then measure all the outflow points on the network within a defined period of time. In addition, this will enable us to directly measure the impact of the MCC investment in the portions of the network that we rehabbed. While many factors may affect NRW network-wide, this will provide an accurate assessment of the benefits of network rehabilitation by MCC in terms of commercial and physical losses. This exercise will require additional resources from Miyahuna-Zarqa and discussions are currently ongoing to determine the way to measure this indicator.</p> |
| WS-9 | Outcome | Continuity of Supply | Hours of supply/week (during the summer). | Hours per week | Geographic (Network-wide, Non-Compact Areas, Compact DMAs) | Miyahuna Quarterly report | Miyahuna-Zarqa | Quarterly | <p>The original target of 70 hours of supply was a policy objective of the Government of Jordan and the basis for this target. With the influx of refugees into Jordan, we do not think it is likely that this target will be achieved with the Compact investments. This target was set when the population increase was projected to be 963,911 by 2020 in Zarqa. Zarqa currently houses 1.3 million people due to the rapid and unanticipated influx of displaced people due to the conflict in the region.</p> <p>In addition, the government struggles to accurately measure this indicator in Zarqa due to the same challenges that hinder accurately capturing NRW. The figure reported in the ITT is the planned hours of what supplied to Zarqa, not the actual number of hours supply. While capturing hours of supply network wide is highly challenging, MCC and MCA-J believe that we can capture hours of supply in the Compact DMA's during the same data collection exercise that is used to measure NRW in the Compact DMA's.</p> |

| Jordan: Water Network Project Indicators Annex I: Indicator Documentation Table | | | | | | | | | |
|--|-----------------|---|---|-----------------|-------------------------------|---------------------------|--------------------------------|------------------------|--|
| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
| Water Network Activity 1: Water Smart Homes | | | | | | | | | |
| | Output | Number of people who attended the awareness sessions | This includes the individuals that received awareness sessions and education on residential best management practices as a result of the Water Smart Homes - infrastructure activity. | Number | Sex (Female, Male) | Consultant Monthly Report | WSH Consultant | Quarterly | Target has been identified based on the WSHs Project Manager |
| | Output | Number of National Aid Fund households with improved water and wastewater network as a result of the Water Smart Homes Activity | National Aid Fund households that have new water and wastewater connections as a result of the Water Smart Homes Project. | Number | Household head (Female, Male) | Consultant Monthly Report | WSH Consultant | Quarterly | Target has been identified based on the WSHs Project Manager |
| | Process | Percent disbursed of water construction contracts | The total amount of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of water works disbursed divided by the total value of all signed contracts. | Percentage | | Contracts | MCA-J Financial Accountability | Quarterly | |
| WS-3 | Process | Value of signed water construction contracts | The value of all signed contracts for the works under scope in the Water Smart Homes Activity using compact funds. | US Dollars | | Contracts | MCA-J Financial Accountability | Quarterly | |
| WS-4 | Process | Value disbursed of water construction contracts | The value disbursed contracts for the consultancy and works under scope in the Water Smart Homes Activity using compact funds. | US Dollars | | MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |
| WS-5 | Process | Temporary employment generated in water and sanitation | The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of water or sanitation systems. | Number | Sex (Female, Male) | Consultant monthly report | WSH Consultant | Quarterly | The values of this indicator provided based on the WSH Consultant monthly report |

| Jordan: Water Network Project Indicators Annex I: Indicator Documentation Table | | | | | | | | | |
|--|-----------------|--|--|-----------------|--|-----------------------------------|-------------------|------------------------|--|
| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
| Water Network Activity 2: Infrastructure Investment | | | | | | | | | |
| | Output | Replacement of customer meters | Number of defective domestic customer water meters that are replaced by the Compact. | Number | Geographic (Ruseifa, Batrawi, Zarqa) and Project Based (non-Compact Areas, Compact DMAs) | PMC monthly report | PMC | Quarterly | |
| | Output | Progress of construction of Basateen Pump Station and Reservoir | A measure of the extent of work that has been completed in the Basateen area, expressed in percentage terms. Work consists of construction of new pump stations and a reservoir. | Percentage | | PMC Monthly report | PMC | Quarterly | |
| | Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated | Total length of the kilometers of the water network pipelines that are expanded, reinforced, or rehabilitated | Kilometers | Geographic (Ruseifa, Batrawi, Zarqa) | PMC Monthly report | PMC | Quarterly | |
| | Outcome | Average number of daily leak complaints received | Average number of daily leaks complaints received | Number | Geographic (Ruseifah, Zarqa) | Miyahuna Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Outcome | Average daily number of pending complaints | Daily average of pending complaints received | Number | Geographic (Ruseifah, Zarqa) | Miyahuna Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Outcome | Average daily response time in hrs for water complaints | Average daily response time, in hours, that it took the first maintenance team to respond to the complaint | Hours | Geographic (Ruseifah, Zarqa) | Miyahuna Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Outcome | Average daily number of "No Water Complaints" | Average daily number of "No Water Complaints" | Number | Geographic (Ruseifah, Zarqa) | Miyahuna Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Outcome | Average daily number of "No Water Quality Complaints" | Average daily number of "No Water Quality Complaints" | Number | Geographic (Ruseifah, Zarqa) | Miyahuna Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Process | Percent disbursed of water construction contracts | The total amount of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of water and sanitation works disbursed divided by the total value of all signed contracts. | Percentage | | Contracts; MCA-J Financial Report | MCA-J | Quarterly | |
| WS-3 | Process | Value of signed water construction contracts | The value of all signed construction contracts for reconstruction, rehabilitation, or upgrading of water works using compact funds. | US Dollars | | Contracts | MCA-J | Quarterly | This was a common indicator with name of value of signed water and sanitation construction contracts and now its disaggregated per project activity |
| WS-4 | Process | Value disbursed of water construction contracts | The value disbursed of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of water works. | US Dollars | | MCA-J Financial Report | MCA-J | Quarterly | This was a common indicator with name of value of signed water and sanitation construction contracts and now its disaggregated per project activity |
| | Process | Value of supervision contract | The value of the supervision contract for water project. | US Dollars | | Contracts | MCA-J | Quarterly | The target for this indicator does not include \$880,000 of CIF funding, as it could not be confirmed whether this sum was used for supervision of construction, and because it was not known if and how it would have been disaggregated by WNP and WWNP works. |
| | Process | Value disbursed of supervision contract | The value disbursed of the supervision contract for water project. | US Dollars | | MCA-J Financial Report | MCA-J | Quarterly | |
| WS-5 | Process | Temporary employment generated in water and sanitation | The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of water or sanitation systems. | Number | Sex (Female, Male) | PMC monthly report | PMC | Quarterly | |

| Jordan: Wastewater Network Project Indicators Annex I: Indicator Documentation Table | | | | | | | | | |
|---|-----------------|--|---|-----------------|--|---|-----------------------|------------------------|---|
| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
| Wastewater Network Project Outcome, Output, and Process Indicators | | | | | | | | | |
| | Outcome | Number of Complaints Received About Sewer Blockage | The annual number of complaints received by the Miyahuna maintenance department about sewer blockage. | Number | | Administrative Reports | WAJ-Zarqa Directorate | Quarterly | |
| | Output | Total Number of Jet Cleaning Vehicles Purchased | Total Number of Jet Cleaning Vehicles Purchased | Number | | MCA-J PMC Reports | Miyahuna-Zarqa | Once | |
| | Outcome | Volume of wastewater collected | Total volume of wastewater collected through the sewer system and pumped via West Zarqa, East Zarqa and West Ruseifa pumping stations. | Cubic meters | | Wastewater Dept. Quarterly Report | Miyahuna-Zarqa | Quarterly | This indicator focuses on quantity of wastewater collected from Zarqa Governorate |
| | Outcome | Percentage of water network subscribers with a wastewater connection | Zarqa Governorate wastewater subscribers as a percent of water subscribers. The assumption by Miyahuna-Zarqa is that each wastewater connection serves three water subscribers. | Percentage | | Miyahuna IT Unit Quarterly report | Miyahuna-Zarqa | Quarterly | In Miyahuna's revised billing system, they are able to report on number complaints but not on number of leaks. This has been revised to more accurately reflect the data that is provided. |
| WS-13 | Outcome | Percentage of population connected to the wastewater network | Percentage of the population of Zarqa with a wastewater connection | Percentage | Population Growth (Forecasted) | Miyahuna IT Unit Quarterly report | Miyahuna-Zarqa | Quarterly | Indicator was added to more accurately capture the benefit stream forecasted in the ERR. Targets will be set using the ERR model. The new indicator will be disaggregated by forecasted population growth and actual population growth. The targets for this indicator were originally set based on forecasted population growth in 2009. This did not foresee the population explosion caused by the inflow of Syrian refugees into Jordan. The Compact's ability to meet this target is highly sensitive to this unforeseen population change and a disaggregation was added to provide the additional context required to measure the efficacy of the program in the face of this unforeseen population influx. |
| | Outcome | Total number of wastewater network subscribers | The total number of wastewater subscriptions in Zarqa and Ruseifa in the Miyahuna-Zarqa financial system | Number | Project type (MCC DMAs and non MCC DMAs) and population based (population per connection) | Miyahuna IT Unit Quarterly report | Miyahuna-Zarqa | Quarterly | |
| | Output | Total number of wastewater connection points constructed by MCC | Number of connection points in the wastewater network | Number | | PMC monthly report | PMC | Quarterly | |
| | Output | Kilometers of pipelines that are expanded or rehabilitated | Total length of construction, including expansion and rehabilitation of pipelines | Kilometers | Construction Type(Expansion, Rehabilitation) and Geographic Area (West Zarqa, East Zarqa, West Ruseifa, Princess Haya) | PMC monthly report | PMC | Quarterly | |
| | Output | Average daily number of "Preventive Cleaning" activities | Average daily number of preventative cleaning actions taken by Miyahuna-Zarqa on the wastewater network | Number | Geographic (Ruseifah, Zarqa) | Miyahuna-Zarqa Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Output | Average daily number of "Corrective Maintenance" activities | Average daily number of maintenance actions taken by Miyahuna-Zarqa to fix problems in the network | Number | Geographic (Ruseifah, Zarqa) | Miyahuna-Zarqa Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |

| Jordan: Wastewater Network Project Indicators Annex I: Indicator Documentation Table | | | | | | | | | |
|---|-----------------|--|--|-----------------|------------------------------|---|--------------------------------|------------------------|--|
| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
| Wastewater Network Project Outcome, Output, and Process Indicators | | | | | | | | | |
| | Output | Average daily response time for sewage complaints | Average daily response time, in hours, that passers between when Miyahuna-Zarqa receives a claim and when the maintenance team responds | Hours | Geographic (Ruseifah, Zarqa) | Miyahuna-Zarqa Daily Maintenance Report | Miyahuna-Zarqa | Quarterly | |
| | Process | Percent disbursed of sanitation construction contracts | The total amount of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of sanitation works disbursed divided by the total value of all signed contracts. | Percentage | | Contracts; MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |
| WS-3 | Process | Value of signed sanitation construction contracts | The value of all signed construction contracts for reconstruction, rehabilitation, or upgrading of sanitation works using compact funds. | US Dollars | | Contracts | MCA-J Financial Accountability | Quarterly | This was a common indicator with name of value of signed water and sanitation construction contracts and now its disaggregated per project activity |
| WS-4 | Process | Value disbursed of sanitation construction contracts | The value disbursed of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of sanitation works. | US Dollars | | MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | This was a common indicator with name of value of signed water and sanitation construction contracts and now its disaggregated per project activity |
| | Process | Value of supervision contract | The value of the supervision contract for wastewater project. | US Dollars | | Contracts | MCA-J Financial Accountability | Quarterly | The target for this indicator does not include \$880,000 of CIF funding, as it could not be confirmed whether this sum was used for supervision of construction, and because it was not known if and how it would have been disaggregated by WNP and WWNP works. |
| | Process | Value disbursed of supervision contract | The value disbursed of the supervision contract for wastewater project | US Dollars | | MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |
| WS-5 | Process | Temporary employment generated in water and sanitation | The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of water or sanitation systems. | Number | Sex (Female, Male) | PMC monthly report | PMC | Quarterly | |

| Jordan: As-Samra Expansion Project Indicators Annex I: Indicator Documentation Table | | | | | | | | | |
|---|-----------------|--|--|-----------------|--------------------|------------------------------------|--------------------------------|------------------------|--|
| CI Code | Indicator Level | Indicator Name | Definition | Unit of Measure | Disaggregation | Primary Data Source | Responsible Party | Frequency of Reporting | Additional Information |
| As-Samra Expansion Project Outcome, Output, and Process Indicators | | | | | | | | | |
| | Outcome | Treated wastewater used in agriculture | Treated wastewater used for irrigation in Northern and Middle Jordan Valley as a percent of all water used for irrigation in Northern and Middle Jordan Valley. | Percentage | | Information Dept. Quarterly report | MWI/JVA | Quarterly | Timeframe of reporting for this indicator is adopted to be aligned with JVA system (Q1: Nov-Jan, Q2: Feb-April, Q3: May-July, Q4: Aug-Nov) to be consistent with JV seasonal use of fresh water (summer and winter). The data will be reported in the Compact quarter which covers the last quarter of the JVA system. For example, Q1 of the JVA system will be included in the first quarter of each Compact year. |
| | Outcome | Quality of As-Samra effluent meets standard | Number of days during the past quarter when effluent does not meet the applicable standard set out in the As-Samra Project Agreement. | Days | | PMU monthly report | PMU | Quarterly | |
| | Outcome | Volume of waste water effluent discharged from the As-Samra plant per year | Annual volume of wastewater treated to at least secondary level (measured as annual volume of wastewater effluent discharged from the As-Samra plant, million cubic meters per year). | Cubic meters | | PMU monthly report | PMU | Quarterly | Volume of wastewater effluent discharged from the As-Samra plant equals to the Total inflow minus 2% as a sludge. |
| | Outcome | Agriculture use of treated wastewater | Agriculture land in the Middle and Northern Jordan Valley using treated wastewater for at least part of their irrigation water. | Hectares | | Information Dept. Quarterly report | MWI/JVA | Quarterly | Baseline number was revised using JVA historical figures and definition. |
| | Output | Expansion of As-Samra Treatment Plant | Percent of the construction works in As-Samra treatment plant expansion | Percentage | | Project lead report | MCA-J | Quarterly | |
| | Process | Percent disbursed of sanitation construction contracts | The total amount of all signed construction contracts for construction, reconstruction, rehabilitation, or upgrading of sanitation works disbursed divided by the total value of all signed contracts. | Percentage | | Contracts; MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |
| WS-3 | Process | Value of signed construction contracts | The value of all signed construction contracts for the expansion of As-Samra Treatment Plant using compact funds. | US Dollars | | Contracts | MCA-J Financial Accountability | Quarterly | |
| WS-4 | Process | Value disbursed of signed construction contract | The value disbursed of all signed construction contracts for expansion of As-Samra Treatment Plant using compact funds. | US Dollars | | MCA-J Financial Report | MCA-J Financial Accountability | Quarterly | |
| | Process | Cost of As-Samra expansion; EPC contract | Total cost of expansion of As-Samra Treatment Plant, this includes both the MCC contribution and outside financing. | US Dollars | | Contracts | MCA-J Financial Accountability | Quarterly | |
| WS-5 | Process | Temporary employment generated in water and sanitation | The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of As-samra treatment plant expansion. | Number | Sex (Female, Male) | PMC monthly report | PMC | Quarterly | |

Jordan: Compact Program Goal and Outcome Indicators

Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|--|---------------------------|--------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Compact Wide Indicators: Goal, Outcome, and Process Level | | | | | | | | | | |
| Goal | Poverty rate in Zarqa Governorate | Percentage | Level | 11.2 (2005) | | | | | | |
| Outcome | Network water consumption per capita | Liters per capita per day | Level (Average) | 65 | 65 | 67 | 70 | 83 | 96 | 96 |
| Outcome | Network water consumption per capita (Residential) | Liters per capita per day | Level (Average) | 57 | 57 | 59 | 62 | 73 | 88 | 88 |
| Outcome | Network water consumption per capita (Non-residential) | Liters per capita per day | Level (Average) | | | | | | | |
| Outcome | Residential water consumption | Liters per capita per day | Level | 62.3 (2009) | | 64 | 67 | 79 | 89 | 89 |
| Outcome | Operating cost coverage | Percentage | Level | 87 | 81 | 83 | 98 | 100 | 100 | 100 |
| Outcome | Operations and maintenance costs | US dollars | Level | \$ 24,818,472 | \$ 25,946,585 | \$ 26,651,655 | \$ 32,433,231 | \$ 35,253,512 | \$ 38,073,793 | \$ 38,073,793 |
| Process | Percent disbursed of water and sanitation construction contracts | Percentage | Level | 0 | 19 | 52 | 81 | 94 | 100 | 100 |
| Process | Value of signed water and sanitation construction contracts | US dollars | Cumulative | 0 | \$ 235,094,452 | \$ 235,094,452 | \$ 235,094,452 | \$ 235,094,452 | \$ 235,094,452 | \$ 235,094,452 |
| Process | Value disbursed of water and sanitation construction contracts | US dollars | Cumulative | 0 | \$ 44,437,418 | \$ 120,768,334 | \$ 191,624,089 | \$ 221,842,979 | \$ 235,094,452 | \$ 235,094,452 |

Jordan: Water Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|--|---------------------------|--------------------------|-----------------|--------|--------|-----------------|-----------------|-----------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Water Network Project Outcome, Output, and Process Indicators | | | | | | | | | | |
| Outcome | Use of tanker water | Liters per capita per day | Level | 4.7 (2009) | | | Monitoring Only | Monitoring Only | 1.2 | 1.2 |
| Outcome | Use of treatment shop water | Liters per capita per day | Level | 0.4 (2009) | | | Monitoring Only | Monitoring Only | 0.2 | 0.2 |
| Outcome | Incidence of diarrhea | Percentage | Level | 3.1 (2014) | | | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Incidence of diarrhea (Under age five) | Percentage | Level | 9 (2014) | | | | 8 | 7 | 7 |
| Outcome | Incidence of diarrhea (5 years and older) | Percentage | Level | 0.87 (2014) | | | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Customer dissatisfaction with supply service | Percentage | Level | 34 (2009) | | | | 30 | 26 | 26 |
| Outcome | Customer dissatisfaction with water quality | Percentage | Level | 60 (2009) | | | | 48 | 40 | 40 |
| Outcome | Non revenue water | Percentage | Level | 61.6 | | | | | 46.56 | 46.56 |
| Outcome | Non revenue water (MCC DMAs only) | Percentage | Level | 61.6 | | | | | 19.3 | 19.3 |
| Outcome | Non revenue water (non MCC DMAs) | Percentage | Level | 61.6 | | | | | Monitoring Only | Monitoring Only |
| Outcome | Continuity of Supply - network wide | Hours per week | Level | 36 | 36 | 36 | 48 | 57 | 70 | 70 |
| Outcome | Continuity of Supply - in MCC DMAs | Hours per week | Level | 36 | | | | | | |
| Outcome | Continuity of Supply - in non-MCC Areas | Hours per week | Level | 36 | | | | | | |

Jordan: Water Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|--|-----------------|--------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Water Network Activity 1: Water Smart Homes | | | | | | | | | | |
| Output | Number of people who attended the awareness sessions | Number | Cumulative | 0 | | | | 39,000 | 52,200 | 52,200 |
| Output | Number of people who attended the awareness sessions (Female) | Number | Cumulative | 0 | | | | | | |
| Output | Number of people who attended the awareness sessions (Male) | Number | Cumulative | 0 | | | | | | |
| Output | Number of National Aid Fund households with improved water and wastewater network as a result of the Water Smart Homes Activity | Number | Cumulative | 0 | | | | 3,000 | 4,494 | 4,494 |
| Output | Number of National Aid Fund households with improved water and wastewater network as a result of the Water Smart Homes Activity (Female headed households) | Number | Cumulative | 0 | | | | | | |
| Output | Number of National Aid Fund households with improved water and wastewater network as a result of the Water Smart Homes Activity (Male headed households) | Number | Cumulative | 0 | | | | | | |
| Process | Percent disbursed of water construction contracts | Percentage | Level | 0 | 0 | 0 | 0 | 0 | 100 | 100 |
| Process | Value of signed water construction contracts | US Dollars | Cumulative | 0 | \$6,490,000 | \$6,490,000 | \$6,490,000 | \$6,490,000 | \$6,490,000 | \$6,490,000 |

Jordan: Water Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|--|-----------------|--------------------------|-----------------|--------|--------|--------|--------|-------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Water Network Activity 1: Water Smart Homes | | | | | | | | | | |
| Process | Value disbursed of water construction contracts | US Dollars | Cumulative | 0 | 0 | 0 | 0 | 0 | \$6,490,000 | \$6,490,000 |
| Process | Temporary employment generated in water and sanitation construction | Number | Cumulative | 0 | | | | | 15 | 15 |
| Process | Temporary employment generated in water and sanitation construction (Female) | Number | Cumulative | 0 | | | | | 3 | 3 |
| Process | Temporary employment generated in water and sanitation construction (Male) | Number | Cumulative | 0 | | | | | 12 | 12 |
| Water Network Activity 2: Infrastructure Investment | | | | | | | | | | |
| Output | Replacement of customer meters | Number | Cumulative | 0 | | 36,168 | 36,168 | 36,168 | 36,168 | 36,168 |
| Output | Replacement of customer meters - Ruseifa | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Ruseifa - MCC DMA's | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Ruseifa - non MCC DMA's | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Batrawi | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Batrawi MCC DMA's | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Batrawi non-MCC DMA's | Number | Cumulative | 0 | | | | | | |

Jordan: Water Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|--|-----------------|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Water Network Activity 2: Infrastructure Investment | | | | | | | | | | |
| Output | Replacement of customer meters - Zarqa | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Zarqa MCC DMA's | Number | Cumulative | 0 | | | | | | |
| Output | Replacement of customer meters - Zarqa non-MCC DMA's | Number | Cumulative | 0 | | | | | | |
| Output | Progress of construction of Basateen Pump Station and Reservoir | Percentage | Cumulative | 0 | | | 50 | 100 | 100 | 100 |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated | Kilometers | Cumulative | 0 | | 0 | 0 | 0 | 741 | 741 |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated - Ruseifa | Kilometers | Cumulative | 0 | | | | | | 348.0 |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated - Batrawi | Kilometers | Cumulative | 0 | | | | | | 185.0 |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated - Zarqa | Kilometers | Cumulative | 0 | | | | | | 208.0 |
| Outcome | Average number of daily leak complaints received | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average number of daily leak complaints received - Ruseifah | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average number of leak complaints received - Zarqa | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |

Jordan: Water Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|---|-----------------|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Water Network Activity 2: Infrastructure Investment | | | | | | | | | | |
| Outcome | Average daily number of pending complaints | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of pending complaints - Ruseifah | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of pending complaints - Zarqa | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily response time in hrs for water complaints | Hours | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily response time in hrs for water complaints - Ruseifa | Hours | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily response time in hrs for water complaints - Zarqa | Hours | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of "No Water Complaints" | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of "No Water Complaints" - Ruseifah | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of "No Water Complaints" - Zarqa | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of "No Water Quality Complaints" | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Outcome | Average daily number of "No Water Quality Complaints" - Ruseifah | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |

Jordan: Water Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|---|--|-----------------|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Water Network Activity 2: Infrastructure Investment | | | | | | | | | | |
| Outcome | Average daily number of "No Water Quality Complaints" - Zarqa | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Process | Percent disbursed of water construction contracts | Percentage | Level | 0 | 15 | 40 | 75 | 95 | 100 | 100 |
| Process | Value of signed water construction contracts | US Dollars | Cumulative | 0 | \$69,720,514 | \$69,720,514 | \$69,720,514 | \$69,720,514 | \$69,720,514 | \$69,720,514 |
| Process | Value disbursed of water construction contracts | US Dollars | Cumulative | 0 | \$10,458,077 | \$27,888,206 | \$52,290,386 | \$66,234,489 | \$69,720,514 | \$69,720,514 |
| Process | Value of supervision contract | US Dollars | Cumulative | 0 | \$10,675,215 | \$10,675,215 | \$10,675,215 | \$10,675,215 | \$10,675,215 | \$10,675,215 |
| Process | Value disbursed of supervision contract | US Dollars | Cumulative | 0 | \$2,100,000 | \$5,600,000 | \$9,800,000 | \$10,675,215 | \$10,675,215 | \$10,675,215 |
| Process | Temporary employment generated in water and sanitation construction | Number | Cumulative | 0 | | | | | 1,462 | 1,462 |
| Process | Temporary employment generated in water and sanitation construction (Female) | Number | Cumulative | 0 | | | | | 49 | 49 |
| Process | Temporary employment generated in water and sanitation construction (Male) | Number | Cumulative | 0 | | | | | 1,413 | 1,413 |

Jordan: Wastewater Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|--|--|-----------------|--------------------------|-----------------|--------|---------|---------|---------|---------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Wastewater Network Project Outcome, Output, and Process Indicators | | | | | | | | | | |
| Outcome | Number of Complaints Received About Sewer Blockage | Number | Level | 8,500 | 8,500 | 8,500 | 7,000 | 6,000 | 2,000 | 2,000 |
| Output | Total Number of Jet Cleaning Vehicles Purchased | Number | Cumulative | 0 | | | | | 10 | 10 |
| Outcome | Volume of wastewater collected | Cubic meters | Level (Cumulative) | 24 (2009) | 24 | 24 | 25 | 27 | 31 | 31 |
| Outcome | Percentage of water network subscribers with a wastewater connection | Percentage | Level | 72 (2009) | 72 | 72 | 73 | 74 | 82 | 82 |
| Outcome | Percentage of population connected to the sewer system | Percentage | Level | 72 | 72 | 72 | 72 | 79 | 85 | 85 |
| Outcome | Percentage of population connected to the sewer system - forecasted population | Percentage | Level | | | | | | | |
| Outcome | Total number of wastewater network subscribers | Number | Level (Cumulative) | 94,778 | 97,621 | 100,550 | 103,566 | 106,673 | 119,793 | 119,793 |
| Outcome | Total number of wastewater network subscribers - connections in MCC DMAs | Number | Level (Cumulative) | 0 | 0 | 0 | 0 | 2,480 | 2,629 | 2,629 |
| Outcome | Total number of wastewater network subscribers - population per connection in MCC DMAs | Number | Level (Cumulative) | | | | | 17,360 | 18,403 | 18,403 |
| Outcome | Total number of wastewater network subscribers - connections in non MCC DMAs | Number | Level (Cumulative) | | | | | | | |
| Outcome | Total number of wastewater network subscribers - population per connection in non MCC DMAs | Number | Level (Cumulative) | | | | | | | |
| Output | Total number of wastewater connection points constructed by MCC | Number | Cumulative | | | 1,413 | 2,827 | 4,240 | 5,653 | 5,653 |

Jordan: Wastewater Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|--|--|-----------------|--------------------------|-----------------|--------|--------|--------|--------|--------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Wastewater Network Project Outcome, Output, and Process Indicators | | | | | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated | Kilometers | Cumulative | 0 | 10 | 65 | 120 | 163 | 287 | 287 |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Expansion) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Expansion - West Zarqa) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Expansion - East Zarqa) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Expansion - West Ruseifa) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Expansion - Princess Haya) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Rehabilitation) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Rehabilitation - West Zarqa) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Rehabilitation - East Zarqa) | Kilometers | Cumulative | 0 | | | | | | |

Jordan: Wastewater Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|--|---|-----------------|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Wastewater Network Project Outcome, Output, and Process Indicators | | | | | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Rehabilitation - West Ruseifa) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Kilometers of pipelines that are expanded, reinforced or rehabilitated (Rehabilitation - Princess Haya) | Kilometers | Cumulative | 0 | | | | | | |
| Output | Average daily number of "Preventive Cleaning" activities | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily number of "Preventive Cleaning" activities - Ruseifah | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily number of "Preventive Cleaning" activities - Zarqa | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily number of "Corrective Maintenance" activities | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily number of "Corrective Maintenance" activities - Ruseifah | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily number of "Corrective Maintenance" activities - Zarqa | Number | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily response time for sewage complaints | Hours | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily response time for sewage complaints - Ruseifah | Hours | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |
| Output | Average daily response time for sewage complaints - Zarqa | Hours | Level (Average) | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only | Monitoring Only |

Jordan: Wastewater Network Project Indicators
Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|--|--|-----------------|--------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| Wastewater Network Project Outcome, Output, and Process Indicators | | | | | | | | | | |
| Process | Percent disbursed of sanitation construction contracts | Percentage | Level | 0 | 15 | 35 | 75 | 95 | 100 | 100 |
| Process | Value of signed sanitation construction contracts | US Dollars | Cumulative | 0 | \$65,508,938 | \$65,508,938 | \$65,508,938 | \$65,508,938 | \$65,508,938 | \$65,508,938 |
| Process | Value disbursed of sanitation construction contracts | US Dollars | Cumulative | 0 | \$9,826,341 | \$22,928,128 | \$49,131,703 | \$62,233,491 | \$65,508,938 | \$65,508,938 |
| Process | Value of supervision contract | US Dollars | Cumulative | 0 | \$8,176,833 | \$8,176,833 | \$8,176,833 | \$8,176,833 | \$8,176,833 | \$8,176,833 |
| Process | Value disbursed of supervision contract | US Dollars | Cumulative | 0 | \$2,100,000 | \$5,600,000 | \$8,176,833 | \$8,176,833 | \$8,176,833 | \$8,176,833 |
| Process | Temporary employment generated in water and sanitation construction | Number | Cumulative | 0 | | | | | 603 | 603 |
| Process | Temporary employment generated in water and sanitation construction (Female) | Number | Cumulative | 0 | | | | | 19 | 19 |
| Process | Temporary employment generated in water and sanitation construction (Male) | Number | Cumulative | 0 | | | | | 587 | 587 |

Jordan: As-Samra Expansion Project Indicators

Annex II: Table of Indicator Baselines and Targets

| Indicator Level | Indicator Name | Unit of Measure | Indicator Classification | Baseline (2011) | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact Target |
|--|--|-----------------|--------------------------|-------------------|---------------|---------------|---------------|---------------|---------------|-----------------------|
| | | | | | 2012 | 2013 | 2014 | 2015 | 2016 | |
| As-Samra Expansion Project Outcome, Output, and Process Indicators | | | | | | | | | | |
| Outcome | Treated wastewater used in agriculture | Percentage | Level | 61 | 62.5 | 64 | 65.5 | 67.5 | 70 | 70 |
| Outcome | Quality of As-Samra effluent meets standard | Days | Level | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Outcome | Volume of waste water effluent discharged from the As-Samra plant per year | Cubic meters | Level (Cumulative) | 65,000,000 (2009) | 65,000,000 | 65,000,000 | 70,000,000 | 85,000,000 | 99,000,000 | 99,000,000 |
| Outcome | Agriculture use of treated wastewater | Hectares | Level | 13,700 | 14,000 | 14,400 | 14,800 | 15,200 | 15,900 | 15,900 |
| Output | Expansion of As-Samra Treatment Plant | Percentage | Cumulative | 0 | 30 | 55 | 94 | 100 | 100 | 100 |
| Process | Percent disbursed of water and sanitation construction contracts | Percentage | Level | 0 | 26 | 75 | 97 | 100 | 100 | 100 |
| Process | Value of signed construction contracts | US Dollars | Cumulative | 0 | \$93,375,000 | \$93,375,000 | \$93,375,000 | \$93,375,000 | \$93,375,000 | \$93,375,000 |
| Process | Value disbursed of signed construction contract | US Dollars | Cumulative | 0 | \$24,153,000 | \$69,952,000 | \$90,202,000 | \$93,375,000 | \$93,375,000 | \$93,375,000 |
| Process | Cost of As-Samra expansion; EPC contract | US Dollars | Cumulative | 0 | \$184,350,000 | \$184,350,000 | \$184,350,000 | \$184,350,000 | \$184,350,000 | \$184,350,000 |
| Process | Temporary employment generated in water and sanitation construction | Number | Cumulative | 0 | | | | | 620 | 620 |
| Process | Temporary employment generated in water and sanitation construction (Female) | Number | Cumulative | 0 | | | | | 27 | 27 |
| Process | Temporary employment generated in water and sanitation construction (Male) | Number | Cumulative | 0 | | | | | 594 | 594 |

Annex 3: Modifications to the M&E Plan

| <i>Network water consumption per capita</i> | | |
|---|-----------------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Disaggregation |
| | Justification: | Work plan update |
| | Justification Description: | Disaggregation (residential and non-residential) was added per MCC guidance. |
| 3-Oct-16 | Change Description: | Change in Classification |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Change in classification from Cumulative to Level (Average) to represent type of actual reported figures in the ITT. |

| <i>Network water consumption per capita - residential</i> | | |
|---|-----------------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Work plan update |
| | Justification Description: | Disaggregation (residential and non-residential) was added per MCC guidance. |

| <i>Network water consumption per capita – non-residential</i> | | |
|---|-----------------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Work plan update |
| | Justification Description: | Disaggregation (residential and non-residential) was added per MCC guidance. |

| Billed network residential water consumption | | |
|--|----------------------------|---|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | This indicator is now as a disaggregation to Network Water Consumption per capita. Two indicators that measure the same outcome was deemed to be redundant. |

| Residential water consumption | | |
|-------------------------------|----------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Indicator Name and Definition |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator name was changed from "Total residential water consumption" to "Residential water consumption" and indicator definition was changed from "Billed residential network water consumption + tankers, treatment shops, and bottled water" to "The average water consumption in liters per person per day." These changes were made to comply with the Common Indicator Guidance (version 2). |
| | | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Data source was changed from "WAJ-Zarqa; Department of Statistics" to "DoS Surveys." This calculation not only includes water from the network but also from other water sources. The DoS surveys better capture water consumption from all these sources. |
| | | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Frequency of reporting was changed from "Year 4 TBD & Y5" to "Other." Frequency of reporting was changed to |

| | | |
|--|--|--|
| | | match available frequency of reporting options in MIS. Indicator is reported in years 3, 4, and 5. |
|--|--|--|

| Operating cost coverage | | | |
|-------------------------|----------------------------|--|---------|
| Project: | Compact-wide | | |
| Activity: | N/A | | |
| Sub-Activity: | N/A | | |
| | | | |
| 3-Oct-16 | Change Description: | Change in Definition | |
| | Justification: | Corrections to erroneous data | |
| | Justification Description: | Indicator definition was changed from "Total quarterly operational revenues divided by total quarterly operating costs. Calculation: OPC = R/C where: OPC = Operational Cost Coverage R = Total Quarterly Operational Revenue C = Total Quarterly Operational Cost (including maintenance)" to "Total annual operational revenues divided by total annual operating costs." This change was made to comply with the Common Indicator Guidance (version 2). | |
| | | | |
| 3-Oct-16 | Change Description: | Change in Data Source | |
| | Justification: | Work plan update | |
| | Justification Description: | Indicator data source was changed from "WAJ Amman Financial Reports" to "Miyahuna-Z financial reports." Miyahuna-Zarqa signed a management contract for Zarqa during the Compact. They now collect all the financial and operational data on the Zarqa water network. | |
| | | | |
| 3-Oct-16 | Change Description: | Baseline Modification | |
| | Change: | Previous | Revised |
| | | TBD | 87 |
| | Justification Description: | Baseline change | |
| | Change Description: | Baseline was included due to available data. | |

| <i>Operations and maintenance costs</i> | | |
|---|-----------------------------------|---|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>This indicator was added to track the amount of spending on operations (including maintenance) separate from the operating cost coverage indicator. This data is critical during and after the Compact to understand how well Miyahuna is maintaining the investment and what the operational life of the investment is.</p> <p>Miyahuna-Zarqa signed a management contract for Zarqa during the Compact. They now collect all the financial and operational data on the Zarqa water network. Reporting will be using the “Miyahuna-Z financial reports” as a data source.</p> <p>Baseline and targets were set using the 2014 Cost Recovery Plan by the Ministry of Water (“Total Expenses”). The exchange rate of 1 JOD = 1.41 USD was used. The targets for 2013 through 2016 include a forecasted electricity tariff increase.</p> |
| | | |

| <i>Outstanding debt</i> | | |
|-------------------------|-----------------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Irrelevant due to change in Program, Activity or Activity scope |
| | Justification Description: | <p>This indicator was retired because the maintenance and operational data are a better indicator of how well Miyahuna is maintaining the Compact investments. As Outstanding Debt captures capital investments, maintenance of MCC’s capital investment does not fall in this category. In addition, operating cost coverage will provide MCC with a better sense of the financial health</p> |
| | | |

| | | |
|--|--|--|
| | | of Miyahuna-Zarqa and their ability to maintain the network. |
|--|--|--|

| Percent disbursed of water and sanitation construction contracts | | |
|--|----------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | Indicator was added to match CI guidance. This indicator was added everywhere that "Value of signed water and sanitation construction contracts" and "Value disbursed of water and sanitation construction contracts" is listed. The purpose of this indicator is to aggregate the contract figures from across the Compact and provide a comprehensive financial picture of what was spent during the Compact. |

| Value of signed water and sanitation construction contracts | | |
|---|----------------------------|--|
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | This indicator was added at the compact level of the hierarchy. This indicator already existed in the ITT as a common indicator for each project and for the Water Smart Homes activity. Now an aggregated indicator has been added under the compact, which includes the sum of the values entered under each project/activity. |

| | | |
|--|---------------------|---------------|
| Value disbursed of water and sanitation construction contracts | | |
| Project: | Compact-wide | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |

| | | |
|--|-----------------------------------|--|
| | Justification: | MCC requires new common indicator |
| | Justification Description: | This indicator was added at the compact level of the hierarchy. This indicator already existed in the ITT as a common indicator for each project and for the Water Smart Homes activity. Now an aggregated indicator has been added under the compact, which includes the sum of the values entered under each project/activity. |

| | | |
|----------------------------|-----------------------------------|--|
| <i>Use of tanker water</i> | | |
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Frequency of reporting was changed from "Year 4 TBD & Y5" to "Other." Frequency of reporting was changed to match available frequency of reporting options in MIS. Indicator is reported in years 3, 4, and 5. |

| | | |
|------------------------------------|-----------------------------------|--|
| <i>Use of treatment shop water</i> | | |
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Frequency of reporting was changed from "Year 4 TBD & Y5" to "Other." Frequency of reporting was changed to match available frequency of reporting options in MIS. Indicator is reported in years 3, 4, and 5. |

| | | |
|------------------------------|----------------------------|----------------------------------|
| <i>Incidence of diarrhea</i> | | |
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Corrections to erroneous data |

| | | | | | | | |
|----------|-----------------------------------|--|--------|-----------|-----------|-----------|----------------|
| | Justification Description: | Frequency of reporting was changed from "Year 4 TBD & Y5" to "Other." Frequency of reporting was changed to match available frequency of reporting options in MIS. Indicator is reported in years 3, 4, and 5. | | | | | |
| | | | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets | - | - | Mon. Only | Mon. Only | Mon. Only | Mon. Only |
| | Previous Targets | - | - | - | TBD | TBD | TBD |
| | Justification: | Program, Project or Activity scope change | | | | | |
| | Justification Description: | All TBD targets were changed to "Monitoring Only." | | | | | |
| | | | | | | | |
| 3-Oct-16 | Change Description: | Baseline Modification | | | | | |
| | Change: | Previous | | | Revised | | |
| | | TBD | | | 3.1 | | |
| | Justification Description: | Baseline change | | | | | |
| | Change Description: | Baselines were included due to available data from the baseline survey. | | | | | |
| | | | | | | | |
| 3-Oct-16 | Change Description: | Disaggregation Added | | | | | |
| | Justification: | Work plan update | | | | | |
| | Justification Description: | This indicator is already disaggregated by Incidence of Diarrhea (under age 5). MCC is adding a disaggregation of Incidence of Diarrhea (5 years and older) for clarity. | | | | | |

| | | |
|---|----------------------------|--|
| Incidence of diarrhea – age 5 and older | | |
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Work plan update |
| | Justification Description: | This indicator is already disaggregated by Incidence of Diarrhea (under age 5). MCC is adding a disaggregation of Incidence of Diarrhea (5 years and older) for clarity. |

| | | |
|--|--|--|
| | | |
|--|--|--|

| Customer dissatisfaction with supply service | | |
|--|----------------------------|--|
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Frequency of reporting was changed from "Year 4 TBD & Y5" to "Other." Frequency of reporting was changed to match available frequency of reporting options in MIS. Indicator is reported in years 3, 4, and 5. |

| Customer dissatisfaction with water quality | | |
|---|----------------------------|--|
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Frequency of reporting was changed from "Year 4 TBD & Y5" to "Other." Frequency of reporting was changed to match available frequency of reporting options in MIS. Indicator is reported in years 3, 4, and 5. |

| Non-revenue water | | | | | | | |
|-------------------|--------------------------------------|------------------------------|----------|----------|----------|--------|----------------|
| Project: | Water Network Project (network-wide) | | | | | | |
| Activity: | N/A | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| | | | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets | Mon-only | Mon-only | Mon-only | Mon-only | 46.56 | 46.56 |
| | Previous Targets | 48 | 46 | 44 | 36 | 35 | 35 |
| | Justification: | Correction to erroneous data | | | | | |

| | | | |
|----------|-----------------------------------|--|---------|
| | Justification Description: | <p>All targets before Y5 will be changed to “Monitoring Only”. Previous targets were set using erroneous data and no longer reflect the timeline along which the project is expected to affect the system.</p> <p>In 2014, Miyahuna Zarqa installed inflow meters to their network. These meters measure the amount of water entering the Miyahuna-Zarqa network from Amman. Prior to their installation, this volume was estimated but never measured. This would be the first time that such data is made available in Zarqa. This is a key component of the non-revenue water calculation.</p> <p>The target has been reset based on the revised baseline. The magnitude of the change between baseline and endline has remained consistent. That is previously we expected a 15 point drop in NRW, which is the magnitude of the change between the revised baseline and target in this M&E plan revision.</p> | |
| | | | |
| 3-Oct-16 | Change Description: | Baseline Modification | |
| | Change: | Previous | Revised |
| | | 50 | 61.56 |
| | Justification Description: | Baseline change | |
| | Change Description: | <p>The measurement of Non-Revenue Water in Zarqa is highly variable and prone to measurement error. NRW is composed of two key data sources: the amount of water entering the network and the amount of water leaving the network. In Q3 of 2014, Miyahuna-Zarqa installed inflow meters on their network and began measuring the amount of water supplied to the network in Zarqa. All the measured amounts of water supplied to Zarqa prior to the installation of those meters were estimates. These meters represent significant improvements in the quality of measurement of the inflow of water to Zarqa.</p> <p>Similar strides have not yet been made in measuring the amount of water leaving the network in Zarqa. Miyahuna-Zarqa measures an estimate of 80 percent of the customer meters in their network every quarter, which does not align with the monthly inflow measures. As a result, they use a combination of data,</p> | |

| | | |
|----------|-----------------------------------|--|
| | | <p>forecasting, and estimation to calculate how much water has left the network. In addition, there are often an unknown number of outflow points in any part of the network, making it extremely challenging to hydraulically isolate portions of the network to accurately capture NRW. This introduces significant measurement error and helps explain the sizeable variance in the NRW figure from quarter to quarter.</p> <p>Due to these well-known challenges in data quality, a baseline that is simply a measurement of NRW in one quarter will likely be inaccurate and could vary by as much as ten points the next quarter. To account for the variation and insure that the assessment of Compact results is not disproportionately impacted by measurement error, the MCC and MCA-J team believe that the best approach to calculating the baseline is to take an average of the four quarters after the new inflow meters came online and the first portion of the MCC investment as operationalized.</p> <p>The baseline will be set to an average of the NRW numbers from a period after the 3rd quarter of year 3 and a year before Miyahuna started operating their first connection point (Q3 of Y4 is MCC's best estimate based on conversations with Miyauna-Zarqa). If we average NRW from Q4 of Y3 to Q3 of Y4, we get a baseline of 61.56.</p> |
| | | |
| 3-Oct-16 | Change Description: | Disaggregation Added |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | While measuring network wide NRW remains challenging, it is possible to accurately capture the NRW in the MCC DMA's. As the MCC investment was designed to be hydraulically isolated, we can control the inflow, measure it, and then measure all the outflow points (i.e. customers' meters) on the network within a defined period of time. In addition, this will enable us to directly measure the impact of the MCC investment in the portions of the network that we rehabbed. While many factors may affect NRW network-wide, this will provide an accurate assessment of the benefits of network rehabilitation by MCC in terms of reducing total losses (i.e. commercial and physical losses) within MCC |

| | | |
|----------|-----------------------------------|--|
| | | <p>rehabilitated areas. This exercise will require additional resources from Miyahuna-Zarqa and discussions are currently ongoing to determine how to measure this indicator.</p> <p>In addition to measuring NRW in MCC DMA's, we will capture the NRW figure for an area outside of MCC DMA's that we think acts as an appropriate proxy for NRW figure in all non MCC DMA's. In order to provide a fair comparison between NRW in MCC DMAs versus NRW in non MCC DMAs, it is crucial that the two figures represent hydraulically isolated areas of the network. MCC, MCA-J, and Miyahuna-Zarqa are discussing which non-MCC DMA's will be selected.</p> |
| | | |
| 3-Oct-16 | Change Description: | Note Added |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | <p>The measurement of Non-Revenue Water in Zarqa is highly variable and challenging to capture accurately. NRW is composed of two key data sources: the amount of water entering the network and the amount of water leaving the network. In Q3 of 2014, Miyahuna-Zarqa installed inflow meters on their network and began measuring the amount of water supplied to the network in Zarqa. All the measured amounts of water supplied to Zarqa prior to the installation of those meters were estimates. These meters represent significant improvements in the quality of measurement of the inflow of water to Zarqa.</p> <p>Similar strides have not yet been made in measuring the amount of water leaving the network in Zarqa. Miyahuna-Zarqa measures an estimate of 80 percent of the customer meters in their network every quarter, which does not align with the monthly inflow measures. As a result, they use a combination of data, forecasting, and estimation to calculate how much water has left the network. In addition, there are often an unknown number of outflow points in any part of the network, making it extremely challenging to hydraulically isolate portions of the network to accurately capture NRW. This introduces significant</p> |

| | |
|--|--|
| | <p>measurement error and helps explain the sizeable variance in the NRW figure from quarter to quarter.</p> <p>Due to these well-known challenges in data quality, a baseline that is simply a measurement of NRW in one quarter will likely be inaccurate and could vary by as much as ten points the next quarter. To account for the variation and insure that the assessment of Compact results is not disproportionately impacted by measurement error, the MCC and MCA-J team believe that the best approach is to take an average of the quarters after the new inflow meters came online and the first portion of the MCC investment as operationalized.</p> <p>The baseline will be set to an average of the NRW numbers from a period after the 3rd quarter of year 3 and a year before Miyahuna started operating their first connection point (Q3 of Y4 is MCC's best estimate based on conversations with Miyauna-Zarqa). If we average NRW from Q4 of Y3 to Q3 of Y4, we get a baseline of 61.56.</p> |
|--|--|

| <i>Non-revenue water – MCC DMA's</i> | | |
|--------------------------------------|-----------------------------------|--|
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | While measuring network wide NRW remains challenging, it is possible to accurately capture the NRW in the MCC DMA's. As the MCC investment was designed to be hydraulically isolated, we can control the inflow, measure it, and then measure all the outflow points on the network within a defined period of time. In addition, this will enable us to directly measure the impact of the MCC investment in the portions of the network that we rehabbed. While many factors may affect NRW network-wide, this will provide an accurate assessment of the benefits of network rehabilitation by MCC in terms of commercial and physical losses. This exercise will |
| | | |

| | | |
|--|--|--|
| | | require additional resources from Miyahuna-Zarqa and discussions are currently ongoing to determine the way to measure this indicator. |
|--|--|--|

| <i>Non-revenue water – non MCC DMA's</i> | | |
|--|-----------------------------------|---|
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | While measuring network wide NRW remains challenging, it is possible to identify an area outside of MCC DMAs that is a) hydraulically isolated, and b) will act as an appropriate proxy to project NRW in all non MCC DMA's. MCC agrees that gathering data on NRW in non MCC DMA's will be an important exercise to better understand the impact MCC had within its project areas in comparison to the losses incurred outside of MCC project areas. |
| | | Discussions with Miyahuna-Zarqa on which area to identify as the appropriate proxy and why, as well as methodology for measuring this indicator, are still ongoing. |

| <i>Continuity of supply time (network wide)</i> | | |
|---|-----------------------------------|---|
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Disaggregation Added |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | MCC is disaggregating network-wide (which is already reported) and Supply Time in the Compact and non-Compact DMAs. This is done to ensure that we can accurately capture the benefits in increased supply time to beneficiaries that directly benefit from the water from the MCC investments. |
| | | |

| | | |
|----------|-----------------------------------|--|
| 3-Oct-16 | Change Description: | Note Added |
| | Justification: | Occurrence of Exogenous Factors |
| | Justification Description: | <p>The original target of 70 hours of supply was a policy objective of the Government of Jordan and the basis for this target. With the influx of refugees in Jordan, MCC does not think it is likely that this target will be achieved with the Compact investments. This target was set when the population increase was projected to be 963,911 by 2020 in Zarqa. Zarqa currently houses 1.3 million people due to the rapid and unanticipated influx of displaced people due to the conflict in the region.</p> <p>In addition, the government struggles to accurately measure this indicator in Zarqa due to the same challenges that hinder accurately capturing NRW. The figure reported in the ITT is the planned hours of what supplied to Zarqa, not the actual number of hours supply. While capturing hours of supply network wide is highly challenging, MCC and MCA-J will work with Miyahuna-Zarqa to capture hours of supply in the Compact DMA's prior to Compact Closure Date.</p> |

| | | |
|--|-----------------------------------|--|
| <i>Continuity of supply time – MCC DMA's</i> | | |
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | <p>MCC is disaggregating network-wide (which is already reported) and Supply Time in the Compact DMAs. This is done to ensure that we can accurately capture the benefits in increased supply time to beneficiaries that directly benefit from the water from the MCC investments. MCC assumes that the baseline is the same as the rest of the network because MCC DMAs were representative of the rest of the network.</p> |

| |
|--|
| <i>Continuity of supply time – non MCC DMA's</i> |
|--|

| | | |
|---------------|----------------------------|--|
| Project: | Water Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data. |
| | Justification Description: | MCC is disaggregating network-wide (which is already reported) and Supply Time in the Compact and non-Compact DMAs. This is done to ensure that we can accurately capture the benefits in increased supply time to beneficiaries that directly benefit and do not benefit from the water from the MCC investments. |

| | | |
|--|----------------------------|---|
| Households cleaning their water storage facilities | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | This indicator was removed because the baseline figure was included based on KFW survey which doesn't represent the Water Smart Homes area. |

| | | |
|--|----------------------------|---|
| Number of people who attended the awareness sessions | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | This indicator has been added to the M&E plan based on MCC guidance and the WSHs project lead to reflect the number of people (Female, Male) who attended the awareness sessions as a result of the WSHs outreach activity. |

| | | |
|--|----------------------------|--|
| <i>Number of people who attended the awareness sessions - Female</i> | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |

| | | |
|---------------|----------------------------|---|
| Sub-Activity: | | N/A |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | This indicator has been added to the M&E plan based on MCC guidance and the WSHs project lead to reflect the number of people (Female, Male) who attended the awareness sessions as a result of the WSHs outreach activity. |

| | | |
|---|----------------------------|---|
| Number of people who attended the awareness sessions - Male | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | This indicator has been added to the M&E plan based on MCC guidance and the WSHs project lead to reflect the number of people (Female, Male) who attended the awareness sessions as a result of the WSHs outreach activity. |

| | | |
|--|----------------------------|--|
| Number of people that received on-site training on residential water best management practices | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope |
| | Justification Description: | This indicator was retired because it is no longer needed to reflect the project design. |

| | | |
|--|----------------------------|--|
| <i>Number of females that received on-site training on residential water best management practices</i> | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |

| | | |
|----------|-----------------------------------|--|
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope |
| | Justification Description: | This indicator was retired because it is no longer needed to reflect the project design. |

| | | |
|--|-----------------------------------|--|
| <i>Number of National Aid Fund households with improved water and wastewater network as a result of the Water Smart Homes Activity</i> | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change of Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator name was changed from "Number of National Aid Fund households with improved water and wastewater network" to "Number of National Aid Fund households with improved water and wastewater network as a result of the Water Smart Homes Activity." Indicator name was changed to provide clarity that the households being tracked were those that benefited from the Water Smart Homes Activity. |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Change maintains integrity of ERR |
| | Justification Description: | Indicator definition was changed from "National Aid Fund households that conducted maintenance and rehabilitation of their water and wastewater plumbing infrastructure as a result of receiving direct assistance as part of the Water Smart Homes Activity Project. This includes construction of proper connections from the house to the water meter and/or wastewater collection system, new, repair and/or replacement of exposed broken pipes, water tanks and plumbing fixtures" to "National Aid Fund households that have new water and wastewater plumbing and infrastructure in their homes." Definition was modified based on WSHs consultant M&E plan. |
| 3-Oct-16 | Change Description: | Change in Data Source |

| | | | | | | | |
|----------|-----------------------------------|---|--------|--------|--------|--------|----------------|
| | Justification: | Work plan update | | | | | |
| | Justification Description: | Indicator data source was changed from "TBD" "Consultant Monthly Report" because this information is now available. | | | | | |
| | | | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets | 0 | 0 | 0 | 3,000 | 4,494 | 4,494 |
| | Previous Targets | 0 | 0 | 1,300 | 2,600 | 3,500 | 3,500 |
| | Justification: | Program, Project or Activity scope change | | | | | |
| | Justification Description: | Targets were modified based on WSHs consultant M&E plan to reflect project design. | | | | | |

| | | | | | | | |
|---|-----------------------------------|--|--|--|--|--|--|
| <i>Number of National Aid Fund households connected to the wastewater network as a result of the Water Smart Homes Activity</i> | | | | | | | |
| Project: | Water Network Project | | | | | | |
| Activity: | Water Smart Homes Activity | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| 3-Oct-16 | Change Description: | Indicator Retired | | | | | |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope | | | | | |
| | Justification Description: | This indicator was retired because it is no longer needed to reflect the project design. | | | | | |

| | | | | | | | |
|--|-----------------------------------|--|--|--|--|--|--|
| <i>Number of National Aid Fund households connected to the wastewater network as a result of the Water Smart Homes Activity – female headed households</i> | | | | | | | |
| Project: | Water Network Project | | | | | | |
| Activity: | Water Smart Homes Activity | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| 3-Oct-16 | Change Description: | Indicator Retired | | | | | |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope | | | | | |
| | Justification Description: | This indicator was retired because it is no longer needed to reflect the project design. | | | | | |

| Percent disbursed of water construction contracts | | |
|---|----------------------------|--|
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | Indicator was added to match CI guidance. This indicator was added everywhere that "Value of signed water and sanitation construction contracts" and "Value disbursed of water and sanitation construction contracts" is listed. |

| Value of signed water construction contracts | | |
|--|----------------------------|---|
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "WSH Consultant" to "Contracts." The data source was changed to clarify from where the data for this indicator will be located. |
| | | |
| 3-Oct-16 | Change Description: | Change in Classification |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | The indicator classification for was changed from "Level" to "Cumulative." The indicator classification was changed to comply with the Common Indicator Guidance (version 2). |

| Value disbursed of water construction contracts | | |
|---|----------------------------|-----------------------|
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |

| | | | | | | | |
|----------|-----------------------------------|---|--------|--------|--------|-------------|----------------|
| | Justification Description: | The indicator data source was changed from "WSH Consultant" to "MCA-J Financial Report." The data source was changed to clarify from where the data for this indicator will be located. | | | | | |
| | | | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets | 0 | 0 | 0 | 0 | \$6,490,000 | \$6,490,000 |
| | Previous Targets | TBD | TBD | TBD | TBD | \$6,490,000 | \$6,490,000 |
| | Justification: | Replace TBD targets | | | | | |
| | Justification Description: | Targets were modified to replace TBD values. | | | | | |

| | | |
|--|----------------------------|---|
| Temporary employment generated in water and sanitation | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>This is a MCC common indicator and applicable to the project. This indicator will be disaggregated by male and female.</p> <p>Targets are calculated using a quarterly ratio of temporary employment actuals (from the ITT) divided by the value of signed contract actuals (from the ITT). That quarterly ratio is averaged out to get an average ratio of temporary employment over contracts over all available quarters in the Compact (from Q14 to Q18, as this was the most recently available data during this M&E Plan Revision). This annual average ratio is then multiplied by the target for value of signed contracts to get an annual target for temporary employment in every Compact Year.</p> |

| |
|--|
| <i>Temporary employment generated in water and sanitation - Female</i> |
|--|

| | | |
|---------------|-----------------------------------|---|
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>This is a MCC common indicator and applicable to the project. This indicator will be disaggregated by male and female.</p> <p>Targets are calculated using a quarterly ratio of temporary employment actuals (from the ITT) divided by the value of signed contract actuals (from the ITT). That quarterly ratio is averaged out to get an annual average ratio of temporary employment over contracts. This annual average ratio is then multiplied by the target for value of signed contracts to get an annual target for temporary employment.</p> |

| | | |
|---|----------------------------|---|
| Temporary employment generated in water and sanitation - Male | | |
| Project: | Water Network Project | |
| Activity: | Water Smart Homes Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>This is a MCC common indicator and applicable to the project. This indicator will be disaggregated by male and female.</p> <p>Targets are calculated using a quarterly ratio of temporary employment actuals (from the ITT) divided by the value of signed contract actuals (from the ITT). That quarterly ratio is averaged out to get an annual average ratio of temporary employment over contracts. This annual average ratio is then multiplied by the target for value of signed contracts to get an annual target for temporary employment.</p> |

| | |
|---|-----------------------|
| <i>Restructure and rehabilitate primary and secondary pipelines (Ruseifa)</i> | |
| Project: | Water Network Project |

| | | |
|---------------|------------------------------------|---|
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Reinforce and rehabilitate primary and secondary pipelines indicators for Ruseifa, Batrawi, and Zarqa, which is used as a key performance indicator. |

| | | |
|--|------------------------------------|---|
| Restructure and rehabilitate primary and secondary pipelines (Batrawi) | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Reinforce and rehabilitate primary and secondary pipelines indicators for Ruseifa, Batrawi, and Zarqa, which is used as a key performance indicator. |

| | | |
|--|------------------------------------|---|
| Restructure and rehabilitate primary and secondary pipelines (Zarqa) | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Reinforce and rehabilitate primary and secondary pipelines indicators for Ruseifa, Batrawi, and Zarqa, which is used as a key performance indicator. |

| <i>Restructure and rehabilitate tertiary pipelines (Ruseifa)</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Reinforce and rehabilitate tertiary pipelines indicators for Ruseifa, Batrawi, and Zarqa, which is used as a key performance indicator. |

| <i>Restructure and rehabilitate tertiary pipelines (Batrawi)</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Reinforce and rehabilitate tertiary pipelines indicators for Ruseifa, Batrawi, and Zarqa, which is used as a key performance indicator. |

| <i>Restructure and rehabilitate tertiary pipelines (Zarqa)</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Reinforce and rehabilitate tertiary pipelines indicators for Ruseifa, Batrawi, and Zarqa, which is used as a key performance indicator. |

| <i>Restructure and construct District Meter Areas (DMA's) (Ruseifa)</i> | | |
|---|------------------------------------|---|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope |
| | Justification Description: | These indicators were retired based on MCC recent request. They were retired because this information was not deemed necessary to track the progress of MCC's intervention. |

| <i>Restructure and construct District Meter Areas (DMA's) (Batrabi)</i> | | |
|---|------------------------------------|---|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope |
| | Justification Description: | These indicators were retired based on MCC recent request. They were retired because this information was not deemed necessary to track the progress of MCC's intervention. |

| <i>Restructure and construct District Meter Areas (DMA's) (Zarqa)</i> | | |
|---|------------------------------------|---|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope |
| | Justification Description: | These indicators were retired based on MCC recent request. They were retired because this information was not deemed necessary to track the progress of MCC's intervention. |

| <i>Replacement of customer meters (Ruseifa)</i> | | |
|---|--|--|
|---|--|--|

| | | |
|---------------|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Customer meters indicators for Ruseifa, Batrawi, and Zarqa, which can be used as a key performance indicator. |

| | | |
|--|------------------------------------|--|
| Replacement of customer meters (Batrawi) | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Customer meters indicators for Ruseifa, Batrawi, and Zarqa, which can be used as a key performance indicator. |

| | | |
|--|------------------------------------|--|
| Replacement of customer meters (Zarqa) | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicators Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators were retired based on MCC request for an aggregated indicator that sums the Customer meters indicators for Ruseifa, Batrawi, and Zarqa, which can be used as a key performance indicator. |

| | | |
|---------------------------------------|-----------------------|--|
| <i>Replacement of customer meters</i> | | |
| Project: | Water Network Project | |

| | | | | | | | |
|---------------|------------------------------------|--|--------|--------|--------|--------|----------------|
| Activity: | Infrastructure Investment Activity | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| 3-Oct-16 | Change Description: | New Indicator | | | | | |
| | Justification: | MCC requires new indicator | | | | | |
| | Justification Description: | Replacement of customer meters was previously separated into three different indicators - one for each of the original intervention areas of the contract. These three indicators have been combined into one indicator, which aggregates all of the customer meters that have been replaced. | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets (Total) | 0 | 36,168 | 36,168 | 36,168 | 36,168 | 36,168 |
| | Previous Targets (Ruseifa) | 0 | 2,310 | 11,548 | 23,095 | 23,095 | 23,095 |
| | Previous Targets (Batrawi) | 0 | 2,305 | 11,525 | 23,050 | 23,050 | 23,050 |
| | Previous Targets (Zarqa) | 0 | 757 | 3,786 | 7,572 | 7,572 | 7,572 |
| | Previous Targets (Total) | 0 | 5,372 | 26,859 | 53,717 | 53,717 | 53,717 |
| | Justification: | Corrections to erroneous data | | | | | |
| | Justification Description: | Targets were modified due to correction of erroneous data " results achieved, changes in assumptions from the original build-design" this request was initiated and discussed with MCC and eventually was approved to be changed to represent the detailed design contracts numbers to a total of (36,168) km. | | | | | |
| 3-Oct-16 | Change Description: | Change in Definition | | | | | |
| | Justification: | Corrections to erroneous data | | | | | |
| | Justification Description: | Indicator definition changed from "Replacement of defective domestic customer water meter" to "Number of defective domestic customer water meters that are replaced by the Compact." The indicator definition was revised to provide clarity that the indicator is tracking the number of meters replaced as a result of MCC's intervention. | | | | | |

| | | |
|----------|-----------------------------------|--|
| 3-Oct-16 | Change Description: | Disaggregation Added |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to this indicator were added by geographic area and by project and non-project area. |

| | | |
|---|------------------------------------|--|
| <i>Replacement of customer meters – Ruseifa</i> | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| | | |
|---|------------------------------------|--|
| <i>Replacement of customer meters – Ruseifa – MCC DMA's</i> | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| | | |
|---|------------------------------------|--|
| <i>Replacement of customer meters – Ruseifa – non-MCC DMA's</i> | | |
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Replacement of customer meters – Batrawi | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Replacement of customer meters – Batrawi – MCC DMA’s | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Replacement of customer meters – Batrawi – non-MCC DMA’s | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Replacement of customer meters – Zarqa | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Replacement of customer meters – Zarqa – MCC DMA’s | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Replacement of customer meters – Zarqa – non-MCC DMA's | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Disaggregation |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Disaggregations to Replacement of Customer Meters were added by geographic area and by project and non-project area. |

| Progress of Construction of Basateen Pump Station and Reservoir | | |
|---|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Indicator Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator name was changed from "Construct new pumping station" to "Progress of construction of Basateen Pump Station and Reservoir" to be clearer. |
| | | |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Change maintains integrity of ERR |
| | Justification Description: | Indicator definition was changed from "Construct new pumping station and 500 m3 reservoir at Al Basateen Area" to "A measure of the extent of work that has been completed in the Basateen area, expressed in percentage terms. Work consists of construction of new pump stations and a reservoir." The indicator definition was revised to provide clarity as to how the progress of the Basateen Pump Station and Reservoir is being tracked. |

| Kilometers of pipelines that are expanded, reinforced or rehabilitated | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | This indicator was added to track the aggregated amount of kilometers of pipelines expanded, reinforced, or rehabilitated. It replaces previous indicators that tracked this information by type of pipeline (primary, secondary, tertiary). Disaggregations will be added by geographic area for Ruseifa, Batrawi, and Zarqa. |

| Average number of daily leak complaints received | | |
|---|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. This indicator will help MCC understand whether the Compact investment has reduced the number of reported leaks in the network. |
| | | This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online. |
| | | Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation. |
| The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah. | | |

| Average daily number of pending complaints | | |
|--|------------------------------------|---|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. Pending complaints are the complaints that are received in one day, but could not be fixed by the first responding team and were left as |
| | | |

| | | |
|--|--|---|
| | | <p>“pending” to be fixed at a later stage. This indicator will help MCC understand whether the Compact investment has reduced the number of reported leaks in the network.</p> <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> <p>The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah.</p> |
|--|--|---|

| <i>Average daily response time in hours for water complaints</i> | | |
|--|------------------------------------|---|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. The benefit of this indicator is to understand the efficiency of Miyahuna’s management. |
| | | <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> |

| | | |
|--|--|---|
| | | The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah. |
|--|--|---|

| <i>Average daily number of "No Water Complaints"</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. A "No Water Complaint" is a complaint reported by a customer for which water is not received to his connection, while supposedly water is delivered to the general area. This indicator will help MCC understand whether the Compact investment has reduced the number of reported leaks in the network. |
| | | <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> <p>The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah.</p> |

| <i>Average daily number of "Water Quality Complaints"</i> | | |
|---|------------------------------------|---------------|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |

| | | |
|--|-----------------------------------|---|
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. "Water Quality Complaints" are complaints reported by customers related to water quality parameters. This indicator will help MCC understand whether the Compact investment has reduced the number of reported leaks in the network.</p> <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> <p>The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah.</p> |

| <i>Percent disbursed of water construction contracts</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | Indicator was added to match CI guidance. This indicator was added everywhere that "Value of signed water and sanitation construction contracts" and "Value disbursed of water and sanitation construction contracts" is listed. |

| <i>Value of signed water construction contracts</i> | | |
|---|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |

| | | |
|----------|-----------------------------------|---|
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "Contracts." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Value disbursed of water construction contracts</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "MCA-J Financial Report." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Value of supervision contract</i> | | |
|--------------------------------------|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Change maintains integrity of ERR |
| | Justification Description: | Indicator definition changed from "The value of the supervision contract for both water and wastewater projects" to "The value of the supervision contract for water project". The indicator definition was revised to provide clarity that these indicators will only be reporting on the supervision contract for the water project. |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "Contracts." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Value disbursed of supervision contract</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Change maintains integrity of ERR |
| | Justification Description: | Indicator definition changed from "The value disbursed of the supervision contract for both water and wastewater projects" to "The value disbursed of the supervision contract for water project." The indicator definition was revised to provide clarity that these indicators will only be reporting on the supervision contract for the water project. |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "MCA-J Financial Report." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Install SCADA / Telemetry monitoring system</i> | | |
|--|------------------------------------|--|
| Project: | Water Network Project | |
| Activity: | Infrastructure Investment Activity | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Irrelevant due to change in Program, Project or Activity scope |
| | Justification Description: | SCADA was dropped when the program was re-packaged and re-bid after the first procurements came in too high. |

| <i>Temporary employment generated in water and sanitation</i> | | | | | | | |
|---|---|--|--------|--------|--------|--------|----------------|
| Project: | Water Network Project | | | | | | |
| Activity: | Infrastructure Investment Activity | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets (Total) | - | - | - | - | 1462 | 1462 |
| | Revised Targets (female) | - | - | - | - | 49 | 49 |
| | Revised Targets (male) | - | - | - | - | 1413 | 1413 |
| | Previous Targets (both total, male, and female) | TBD | TBD | TBD | TBD | TBD | TBD |
| | Justification: | TBD replaced with target | | | | | |
| | Justification Description: | <p>Targets that were previously TBD have now been filled with an end of Compact target.</p> <p>Targets are calculated using a quarterly ratio of temporary employment actuals (from the ITT) divided by the value of signed contract actuals (from the ITT). That quarterly ratio is averaged out to get an average ratio of temporary employment over contracts over all available quarters in the Compact (from Q1 to Q18, as this was the most recently available data during this M&E Plan Revision). This annual average ratio is then multiplied by the target for value of signed contracts to get an annual target for temporary employment in every Compact Year.</p> | | | | | |

| Sewer Blockage Events | | |
|-----------------------|----------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Indicator Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator name is being changed to “Number of Complaints Received About Sewer Blockage” to reflect what is truly being measured. |
| | | |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator definition is being changed from “Annual number of blockages that occurred in sewer network per year (pumping station blockages shall not be included)” to “The annual number of complaints received by the Miyahuna maintenance department about sewer blockage.” |

| Total Number of Jet Cleaning Vehicles Purchased | | |
|---|----------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | Relevant due to change in Program, Project or Activity scope |
| | Justification Description: | Indicator added to reflect MCC investment in jet cleaning vehicles. This will enable other vehicles requiring repair to go into maintenance without delaying cleaning of the wastewater systems. |

| Volume of wastewater collected | | |
|--------------------------------|----------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Classification |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Modification of classification from Level to Level (Cumulative). Classification of these indicators has been changed to Level (Cumulative) based on MCC ITT guidance to represent the actual type of reported figures in the ITT. |
| | | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Indicator data source was changed from "WAJ-Zarqa Directorate" to "Wastewater Dept. Quarterly report." The data source was changed to clarify from where the data for this indicator will be located. |

| Residential population connected to the sewer system | | |
|--|----------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Indicator Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator name was changed from “Residential population connected to the sewer system” to “Percentage of water network subscribers with a wastewater connection” in order to clarify what this indicator is measuring. |
| | | |
| 3-Oct-16 | Change Description: | Note Added |
| | Justification: | Corrections to erroneous data |

| | | |
|--|-----------------------------------|--|
| | Justification Description: | In Miyahuna's revised billing system, they are able to report on number complaints but not on number of leaks. This has been revised to more accurately reflect the data that is provided. |
|--|-----------------------------------|--|

| <i>Percentage of the population connected to the wastewater network</i> | | |
|---|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | New issues emerged, suggesting importance of a new indicator |
| | Justification Description: | Indicator was added to more accurately capture the benefit stream forecasted in the ERR. Targets will be set using the ERR model. The new indicator will be disaggregated by forecasted population growth and actual population growth. The targets for this indicator were originally set based on forecasted population growth in 2009. This did not foresee the population explosion caused by the inflow of Syrian refugees into Jordan. MCC's ability to meet its targets is highly sensitive to this unforeseen population change and a disaggregation was added to provide the additional context required to measure the efficacy of the program in the face of this unforeseen population influx. |

| <i>Total number of wastewater network subscribers</i> | | |
|---|-----------------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | New issues emerged, suggesting importance of a new indicator. |
| | Justification Description: | This indicator was newly added based on MCC recent request and the WW project lead to reflect the total number of wastewater subscribers on the network, |

| | | |
|--|--|---|
| | | <p>which is used to calculate the Percentage of the population connected to the sewer system. Targets will be set using the ERR model and assuming seven people per subscription or connection.</p> <p>This indicator will be disaggregated by connections MCC DMAs and non MCC DMAs, and again by population per connection.</p> |
|--|--|---|

| <i>Total number of wastewater connection points constructed by MCC</i> | | |
|--|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | New issues emerged, suggesting importance of a new indicator. |
| | Justification Description: | This indicator was newly added based on MCC recent request and the WW project lead to reflect the total number of wastewater connection points. |

| <i>Kilometers of pipelines that are expanded, reinforced or rehabilitated</i> | | |
|---|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator. |
| | Justification Description: | This indicator was added to be sure that an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators is included in the M&E Plan, which can be used as a KPI. In addition to West Zarqa, East Zarqa, and West Ruseifa, this indicator includes Princess Haya. It is disaggregated by Expansion and Rehabilitation. |

| Expand Network (West Zarqa) | | |
|-----------------------------|----------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators covering West Zarqa, East Zarqa, and West Ruseifa were retired and replaced by an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators, which is used as a key performance indicator. |

| Expand Network (East Zarqa) | | |
|-----------------------------|----------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators covering West Zarqa, East Zarqa, and West Ruseifa were retired and replaced by an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators, which is used as a key performance indicator. |

| Expand Network (West Ruseifa) | | |
|-------------------------------|----------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |

| | | |
|--|-----------------------------------|---|
| | Justification Description: | These indicators covering West Zarqa, East Zarqa, and West Ruseifa were retired and replaced by an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators, which is used as a key performance indicator. |
|--|-----------------------------------|---|

| <i>Reinforce and rehabilitate network (West Zarqa)</i> | | |
|--|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators covering West Zarqa, East Zarqa, and West Ruseifa were retired and replaced by an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators, which is used as a key performance indicator. |

| <i>Reinforce and rehabilitate network (East Zarqa)</i> | | |
|--|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators covering West Zarqa, East Zarqa, and West Ruseifa were retired and replaced by an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators, which is used as a key performance indicator. |

| <i>Reinforce and rehabilitate network (West Ruseifa)</i> | | |
|--|----------------------------|-------------------|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicator Retired |

| | | |
|--|-----------------------------------|---|
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | These indicators covering West Zarqa, East Zarqa, and West Ruseifa were retired and replaced by an aggregated indicator that sums the Expanded and Reinforced and rehabilitated indicators, which is used as a key performance indicator. |

| <i>Average daily number of "Preventive Cleaning" activities</i> | | |
|---|-----------------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. Activities implemented to avoid blockages at already identified "trouble spots" known for their vulnerability to have sewer blockage events. |
| | | <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> <p>The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah.</p> |

| Average daily number of “Corrective Maintenance” activities | |
|---|----------------------------|
| Project: | Wastewater Network Project |
| Activity: | N/A |
| Sub-Activity: | N/A |
| | |

| | | |
|----------|-----------------------------------|---|
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact. Corrective maintenance is a repair or replacement decision for equipment, or part of the infrastructure network.</p> <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> <p>The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah.</p> |

| <i>Average daily response time for sewage complaints</i> | | |
|--|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>New indicator will be provided routinely as part of the maintenance reports that MCC collects for other indicators in the Compact.</p> <p>This will be a monitoring-only indicator. MCC is unable to provide a baseline because Miyahuna only started tracking this indicator after the MCC project came online.</p> <p>Miyahuna provides a daily maintenance report, so data will be recorded on the same day of every quarter and averaged out to an annual calculation.</p> |

| | | |
|--|--|---|
| | | The indicator will also capture the total number, the number in Zarqa (which includes Batrawi), and the number in Ruseifah. |
|--|--|---|

| <i>Percent disbursed of sanitation construction contracts</i> | | |
|---|-----------------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | Indicator was added to match CI guidance. This indicator was added everywhere that "Value of signed water and sanitation construction contracts" and "Value disbursed of water and sanitation construction contracts" is listed. |

| <i>Value of signed sanitation construction contracts</i> | | |
|--|-----------------------------------|---|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "Contracts". The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Value disbursed of sanitation construction contracts</i> | | |
|---|-----------------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "MCA-J Financial Report". The data source was changed to clarify from where the data for this indicator will be located. |

| Value of supervision contract | | |
|-------------------------------|----------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator definitions changed from "The value of the supervision contract for both water and wastewater projects" to "The value of the supervision contract for wastewater project." The indicator definition was revised to provide clarity that these indicators will only be reporting on the supervision contract for the water project. |
| | | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "Contracts." The data source was changed to clarify from where the data for this indicator will be located. |

| Value disbursed of supervision contract | | |
|---|----------------------------|--|
| Project: | Wastewater Network Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| | | |
| 3-Oct-16 | Change Description: | Change in Definition |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator definitions changed from "The value disbursed of the supervision contract for both water and wastewater projects" to "The value disbursed of the supervision contract for wastewater project." The indicator definition was revised to provide clarity that these indicators will only be reporting on the supervision contract for the water project. |
| | | |

| | | |
|----------|-----------------------------------|--|
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | The indicator data source was changed from "PMC" to "MCA-J Financial Report." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Temporary employment generated in water and sanitation</i> | | | | | | | |
|---|---|--|--------|--------|--------|--------|----------------|
| Project: | Wastewater Network Project | | | | | | |
| Activity: | N/A | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets (Total) | - | - | - | - | 603 | 603 |
| | Revised Targets (female) | - | - | - | - | 19 | 19 |
| | Revised Targets (male) | - | - | - | - | 587 | 587 |
| | Previous Targets (both total, male, and female) | TBD | TBD | TBD | TBD | TBD | TBD |
| | Justification: | TBD replaced with target | | | | | |
| | Justification Description: | <p>Targets that were previously TBD have now been filled with an end of Compact target.</p> <p>Targets are calculated using a quarterly ratio of temporary employment actuals (from the ITT) divided by the value of signed contract actuals (from the ITT). That quarterly ratio is averaged out to get an average ratio of temporary employment over contracts over all available quarters in the Compact (from Q1 to Q18, as this was the most recently available data during this M&E Plan Revision). This annual average ratio is then multiplied by the target for value of signed contracts to get an annual target for temporary employment in every Compact Year.</p> | | | | | |

| <i>The actual substitution calculation</i> | | |
|--|--|---|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Indicator Retired |
| | Justification: | Indicator has been added which is superior in measuring same variable. |
| | Justification Description: | JVA can't report this indicator and it will be included in the final evaluation report. |

| <i>Treated wastewater used in agriculture</i> | | |
|---|--|--|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Frequency of Reporting |
| | Justification: | Work plan update |
| | Justification Description: | Indicator frequency was changed from "Yearly" to "Quarterly." Indicator frequency was updated to reflect the more frequent availability of data. |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Indicator data source was changed from "Jordan Valley Authority" to "Information Dept. Quarterly Report." The data source was changed to clarify from where the data for this indicator will be located. |
| 3-Oct-16 | Change Description: | Change in Classification |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Classification of this indicator was changed from Cumulative to Level. Classification of this indicator has been modified based on MCC ITT guidance to represent the actual type of figures reported in the ITT. |

| <i>Quality of As-Samra effluent meets standard</i> | | |
|--|--|--|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Indicator data source was changed from "MWI/JVA" to "PMU monthly report." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Volume of waste water effluent discharged from the As-Samra plant per year</i> | | |
|---|--|---|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Indicator data source was changed from "MWI/JVA" to "PMU monthly report." The data source was changed to clarify from where the data for this indicator will be located. |
| 3-Oct-16 | Change Description: | Change in Classification |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator classification was changed from "Cumulative" to "Level (Cumulative)." Classification of this indicator has been modified based on MCC ITT guidance to represent the actual type of figures reported in the ITT. |

| <i>Agriculture use of treated wastewater</i> | | |
|--|--|--|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Classification |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Modification of classification from "Cumulative" to "Level." Classification for this indicator was changed to Level to represent the actual type of reported figures in the ITT. |

| <i>Expansion of As-Samra Treatment Plant</i> | | | | | | | |
|--|--|--|--------|--------|--------|--------|----------------|
| Project: | As-Samra Treatment Plant Expansion Project | | | | | | |
| Activity: | N/A | | | | | | |
| Sub-Activity: | N/A | | | | | | |
| 3-Oct-16 | Change Description: | Change in Definition, Unit, Classification, and Data Source | | | | | |
| | Justification: | Work plan update | | | | | |
| | Justification Description: | Indicator definition, unit, classification, and data source, all of which were previously marked "TBD", were added. | | | | | |
| 3-Oct-16 | Change Description: | Target Modification | | | | | |
| | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | End of Compact |
| | Revised Targets | 30 | 55 | 94 | 100 | 100 | 100 |
| | Previous Targets | TBD | TBD | TBD | TBD | TBD | TBD |
| | Justification: | TBD replaced with target. | | | | | |
| | Justification Description: | Targets were included, all of which were previously marked "TBD." Targets were identified according to updated costs and the expansion completion. | | | | | |

| <i>Percent disbursed of water and sanitation construction contracts</i> | | |
|---|--|--|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | Indicator was added to match CI guidance. This indicator was added everywhere that "Value of signed water and sanitation construction contracts" and "Value disbursed of water and sanitation construction contracts" is listed. |

| <i>Value of signed construction contracts</i> | | |
|---|--|---|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Indicator Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator name was revised from "Value of signed construction contracts; MCC contribution" to "Value of signed construction contracts." Indicator name was revised to be consistent with those for other activities and, for Cost of As-Samra expansion; EPC contract, to provide a name that more accurately reflects what the indicator is measuring. |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Indicator data source was revised from "Authority Engineer" to "Contracts." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Value disbursed of signed construction contract</i> | | |
|--|--|---|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Indicator Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator names were revised from "Value disbursed of signed construction contract; MCC contribution" to "Value disbursed of signed construction contract." Indicator names were revised to be consistent with those for other activities and, for Cost of As-Samra expansion; EPC contract, to provide a name that more accurately reflects what the indicator is measuring. |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |
| | Justification Description: | Indicator data source was revised from "Authority Engineer" to "MCA-J Financial Report." The data source was changed to clarify from where the data for this indicator will be located. |

| <i>Cost of As-Samra expansion; EPC contract</i> | | |
|---|--|---|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | Change in Indicator Name |
| | Justification: | Corrections to erroneous data |
| | Justification Description: | Indicator names were revised from "Total EPC cost of As-Samra Expansion" to "Cost of As-Samra expansion; EPC contract." Indicator names were revised to be consistent with those for other activities and, for Cost of As-Samra expansion; EPC contract, to provide a name that more accurately reflects what the indicator is measuring. |
| 3-Oct-16 | Change Description: | Change in Data Source |
| | Justification: | Work plan update |

| | | |
|--|-----------------------------------|--|
| | Justification Description: | Indicator data source was revised from "Authority Engineer" to "Contracts." The data source was changed to clarify from where the data for this indicator will be located. |
|--|-----------------------------------|--|

| <i>Temporary employment generated in water and sanitation</i> | | |
|---|--|--|
| Project: | As-Samra Treatment Plant Expansion Project | |
| Activity: | N/A | |
| Sub-Activity: | N/A | |
| 3-Oct-16 | Change Description: | New Indicator |
| | Justification: | MCC requires new common indicator |
| | Justification Description: | <p>This indicator was newly added per MCC recent request due to available data.</p> <p>Targets are calculated using a quarterly ratio of temporary employment actuals (from the ITT) divided by the value of signed contract actuals (from the ITT). That quarterly ratio is averaged out to get an average ratio of temporary employment over contracts over all available quarters in the Compact (from Q4 to Q18, as this was the most recently available data during this M&E Plan Revision). This annual average ratio is then multiplied by the target for value of signed contracts to get an annual target for temporary employment in every Compact Year.</p> |