Millennium Challenge Account Zambia

Monitoring and Evaluation Plan

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ACRONYMS

CSO	Central Statistics Office
DQR	Data Quality review
EDAMS	Electronic Data and Management Systems
ERR	Economic Rate of Return
GRZ	Government of Republic of Zambia
IEC	Information, Education, Communications
ITT	Indicator Tracking Table
LCC	Lusaka City Council
LWSC	Lusaka Water and Sewerage Company
LWSSD	Lusaka Water Supply, Sanitation and Drainage
M&E	Monitoring and Evaluation
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation
MIS	Management Information System
NGO	Non-Governmental Organization
NRW	Non-Revenue Water
PIA	Program Implementation Agreement
SME	Small to Medium Enterprises
WASH	Water, Access, Sanitation and Hygiene

1. INTRODUCTION

1.1 About the Compact

In May 2012, the Government of the United States of America acting through the Millennium Challenge Corporation (MCC) and the Government of the Republic of Zambia (GRZ) entered into the Millennium Challenge Compact for a grant of US$354 million for implementation of the Lusaka Water Supply Sanitation and Drainage (LWSSD) Project ("the Project") to be implemented by the Millennium Challenge Account Zambia (MCA-Zambia). The project will expand access to, and improve the reliability of, water supply and sanitation, and improve drainage services in select urban and peri-urban areas of the city of Lusaka. This is in order to decrease the incidence of waterborne and water-related diseases, generate time savings for households and businesses and reduce non-revenue water. It is expected that 1.2 million people in Lusaka will benefit from the project. The project is to be implemented over a period of five years from 2013 to 2018.

1.2 Purpose of the M&E Plan

The Monitoring and Evaluation (M&E) Plan is a tool to manage the process of monitoring, evaluating and reporting progress towards Compact results. The plan is guided by principles stipulated in the Millennium Challenge Corporation (MCC) Policy for Monitoring and Evaluation of Compacts and Threshold programs (DCI-2007-55.2 from 05/12/2009, http://www.mcc.gov/pages/results) as well as the Compact and the Program Implementation Agreement (PIA) (http://www.mcc.gov/documents/agreements/compact-zambia.pdf).

The M&E plan serves the following functions:

i. Explains in detail how MCC and MCA-Zambia will monitor the various projects to determine whether they are achieving their intended results and measure their larger impacts over time through program evaluation and rigorous impact evaluations.

ii. Outlines any M&E requirements that MCA-Zambia must meet in order to receive disbursements.

iii. Serves as a guide for program implementation and management, so that MCA-Zambia staff, Board of Directors, Implementing Entities' staff, beneficiaries, and other stakeholders understand the objectives and targets they are responsible for achieving, and are aware of their progress towards those objectives and targets during implementation.

iv. Establishes a process to alert implementers, stakeholders and MCC to any problems in program implementation and provides the basis for making any needed program adjustments.

v. Outline the designs and methodologies for conducting rigorous impact evaluation to demonstrate impact and attributions.

vi. Includes a description of complementary data to be collected by MCA-Zambia for evaluation of the program but not to be reported to MCC on a regular basis, including qualitative studies.

The M&E Plan is a binding document, and failure to comply with its stipulations could result in suspension of disbursements. It may be modified or amended as necessary in accordance with the MCC's M&E Policy.

In accordance with MCC's M&E Policy, Gender Policy and Gender Integration Guidelines, the M&E Plan includes social and gender analysis, where Compact design and logic reflects assumptions and conditions related to these social differences. This is mainly captured through disaggregation of data, but also through evaluation questions, design, and methods.

1.3 Components of the M&E Plan

The MCA-Zambia M&E Plan includes:

- A summary of the Compact goal and objectives, including program logic and expected outcomes;
- The number of expected beneficiaries, defined in accordance with MCC's Guidelines for Economic and Beneficiary Analysis (http://www.mcc.gov/documents/guidance/guidance-economicandbeneficiaryanalysis.pdf);

- Key indicators and targets to be used for measuring performance and impact of the project;
- Disaggregation's by sex, age, income, and location where appropriate;
- General requirements for data collection, reporting and data quality reviews;
- Specific requirements for evaluation of the project and a brief description of the methods to be used;
- Requirements of the implementation of the M&E plan, including information management and MCA-Zambia responsibilities; and
- A brief description of other components of the M&E Plan (such as M&E costs, assumptions and risks).

1.4 Process of Developing the M&E Plan

The M&E plan was developed using consultative and participatory approaches. Various stakeholders were involved in the development of this M&E plan. Stakeholders that participated in this process included implementing entities, Lusaka Water and Sewerage Company (LWSC) and Lusaka City Council (LCC), institutions and Non-Governmental Organizations (NGO's) working in water and sanitation. Consultative meetings were held and consensus reached especially on project logics and indicators. In September 2012, MCC and MCA-Zambia hosted an M&E Workshop where stakeholders including LWSC, LCC, NGO and implementing firms attended, to help develop more detailed program logics for Compact Activities. This M&E Plan incorporates the feedback from that workshop and follow-on meetings with stakeholders. Additionally this plan has been formally approved by LCC and LWSC.

2. COMPACT OVERVIEW AND OBJECTIVES

2.1 Compact Goal and Objectives

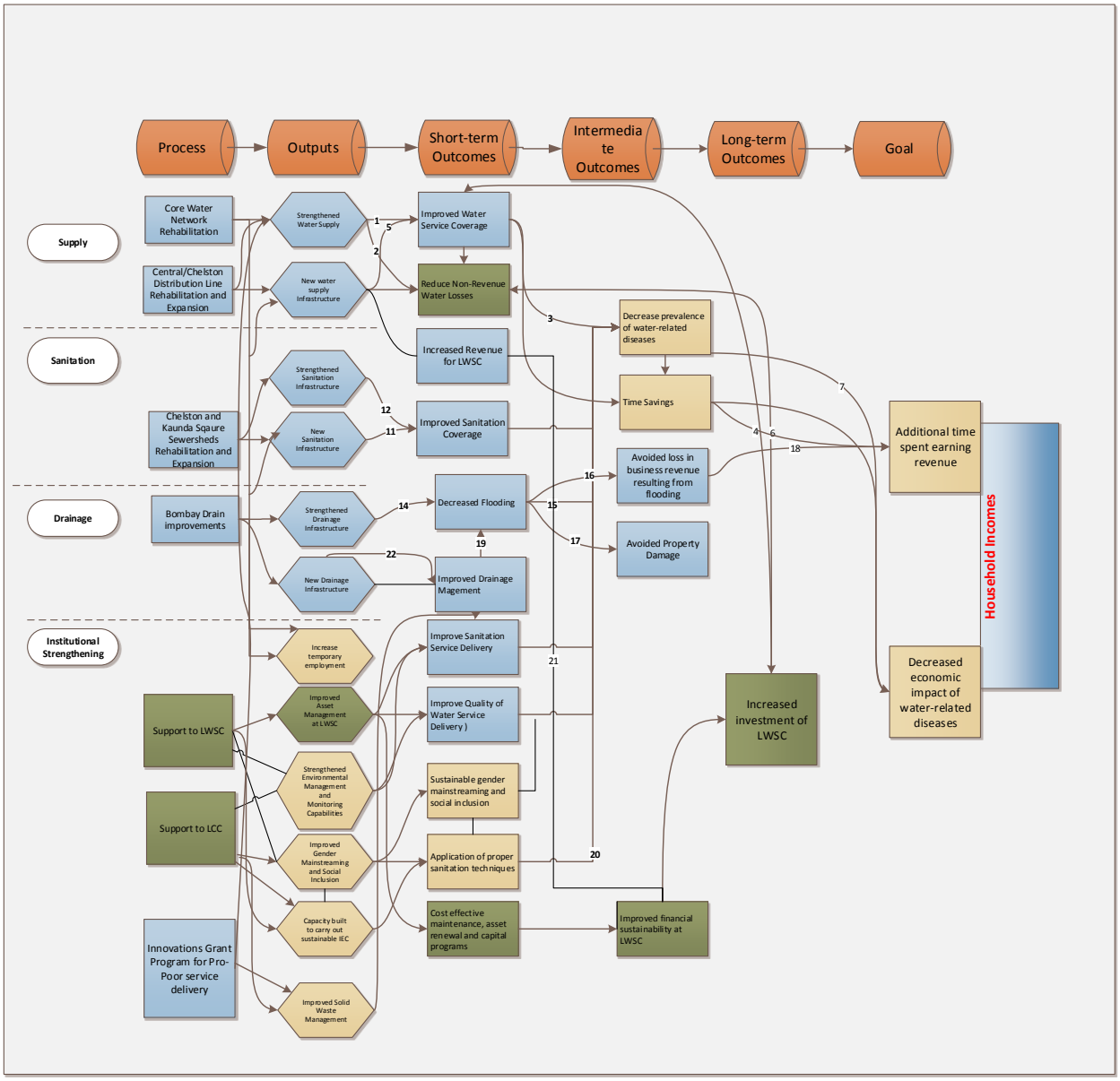
Poor health status as well as high burden of health payments, contribute to low employability of the Zambian workforce, which has been identified as a binding constraint to economic growth (see "An Analysis of Constraints to Inclusive Growth in Zambia" at http://www.mcaz.gov.zm/?page_id=10).

The overall goal of the Compact is to reduce poverty through economic growth in Lusaka by expanding access to, and improve the reliability of, water supply and sanitation, and improving drainage services in select urban and peri-urban areas of the City of Lusaka.

These infrastructure activities, along with Information, Communication and Education (I.E.C) activities geared towards quality sanitation practices and institutional strengthening to improve service access and delivery, should decrease the incidence of water-borne and water related diseases, generate time and cost savings for households and businesses, decrease the burden of health payments and reduce non-revenue water in the water supply network. The drainage activities should also reduce damage to property and increase business revenue in select areas of Lusaka where flooding will be reduced.

2.2 Compact Overall Logic

The M&E Plan is built on the following logic model which illustrates how the program, the project and the activities contribute to the Compact Goal and the project objective.



Explanation of Logic

A program logic is a series of "If…Then" statements; if these activities are conducted then these short term outcomes will result, etc. In the logics for this Compact, linkages are drawn to better illustrate the cause and effect relationships between the different logic hierarchies. The narratives below focus on the cause and effect logic chains for each input or activity. Outcome targets and indicator definitions are included in annex 2.

It should be noted that the outcomes associated with the Asset and Environmental Management inputs take effect on a completely different timeline than the health and

time savings outcomes. They are presented in the same logic here for modeling purposes but the Asset and Environmental Management outcomes will take place over the course of years where as health and time savings outcomes are relatively more immediate. The same can be said for the Social Inclusion and Gender Mainstreaming institutional strengthening activity, which will take place over the course of years, while the Information, Education, and Communications (IEC) activities should have more immediate outcomes.

Assumptions

Embedded within the program logic are numbered lines (1,2,…). These numbers represent the presence of assumptions in our "if…then" statements. Assumptions are leaps in logic that must hold true in order for the next level of outcomes to be reached, meaning that we are assuming certain things happen in order for our outcomes to be met. Accordingly, these assumptions carry risks to overall results if they are proven to be un-true. This section of the logic outlines our current assumptions and our monitoring strategies. In the case of this Compact, most of the feedback regarding the mitigation of the risk associated with assumptions will come late in, if not after, Compact close out. Because of this our Post-Compact evaluation activities become extremely important in not only answering questions on overall effect but in answering how that effect was achieved, or not.

Some assumptions and relationships between variables can be highly affected by social differences, most often gender. These assumptions will thus be tested using disaggregated data by sex, age, and income, where relevant. For example, assumptions about relationships between time saving and work or education have strong gender dimensions.

Innovation Grant

The Innovation Grant will focus on supporting WASH and drainage activities in a way that supports the effects of the Compact. The Innovation Grant Program is currently developing its planning and evaluation framework that will help determine the specific problems grants will seek to address hence subsequent versions of this M&E Plan will elaborate the logic for the Innovation Grant.

1: Strengthening the current supply system will include some increase into the amount of water that is being pumped into the system but most of the increase in supply will come from decreasing the amount of water lost in the system (repairing pipe leaks, decreasing illegal taps, etc.).Given the extension of the system and the expected increase of households tapping into and creating demand on the system, the assumption is that the amount of supply (coming from stemming system losses and increasing the water flow into the system) will be sufficient to meet this demand.

Risk: If water supply does not meet demand then households will not necessarily gain access to clean water from with household taps as houses only have water for limited amounts of time a day or experience varying levels/ low levels of water pressure.

Risk Monitoring: Number of new connections (demand) will be tracked along with decreases in water losses to the system as well as level of water being pumped into the system (supply) while surveys will monitor households' access to clean water based on source (public tap, household tap, etc).

2: Reducing financial loss is dependent on not only increasing revenue but reducing non-revenue water loss. Expanding the supply network could offer up new opportunities for theft from the system. The assumption is that any new theft is not significant enough to prevent the meeting of non-revenue water reduction targets.

Risk: New theft is indicative of an inability on the part of Lusaka Water Supply and Sewerage Company (LWSC) and communities to police illegal taps into the system and can decrease the amount of revenue coming into LWSC (assuming that some of the illegal connections could have ended up as legal, metered connections or by affecting water pressure significantly enough to reduce access, if the quantity of water demanded by a paying customer is less than what can be provided). Such a situation undermines the financial sustainability of LWSC.

Risk Monitoring: LWSC will report on non-revenue water loss which will be tracked in this M&E plan. IEC will also address vandalism and illegal connection to the system.

3: Receiving any health benefits from the increase in availability of water depends upon:

1. The water at point of source is clean (whether household tap or public kiosk)
2. The water at point of use is clean (meaning effective sanitation practices are used)
3. Increase in the consumption and use of clean water is sufficient for intended health effects (meaning that symptoms of water borne illness are not due to another source like food and that there is a sufficient quantity of safe water to meet basic health and hygiene needs)
4. Beneficiaries are able to pay for the increased quantity of water available and needed.

Risk: Without targeted health outcomes being achieved the Compact will incur heavy costs with no measurable economic benefits for beneficiaries.

Risk Monitoring: Monitoring this risk is dependent on three primary actions.

1. MCA-Zambia will be implementing IEC training on effective water, sanitation, and hygiene techniques.

2. Monitoring of effective sanitation practices. The Independent Evaluator will incorporate into its survey work, an assessment of households in the sample frame to demonstrate effective sanitation practices and will conduct testing of water stored in the house to determine whether effective sanitation practices are being used.
3. Water source testing will help to ensure that the water coming out of the household tap or public tap is clean. Such testing will be conducted by LWSC as part of their routine water quality monitoring and among a sub-sample of households by the Independent Evaluator.

4: Given that time savings stem from decreasing the time beneficiaries spend collecting water or suffering from a waterborne illness, our logic states that this additional time will be spent earning revenue that was hitherto not earned due to time constraints which are now alleviated. However the assumptions are:

1. That beneficiaries spend their time looking for additional revenue generating activities. There is some literature on time/cost use and savings that shows a variety of different uses of time saved from improved water supply, but few demonstrate labor and income gains (see e.g. "Happiness on Tap: Facilitating the purchase of private water connection on credit improved household's quality of life" featuring an evaluation by Florencia Devoto, Esther Duflo, Pascaline Dupas, William Pariente, Vincent Pons. J-PAL, February 2013) that indicates that beneficiaries do not necessarily spend a proportionate, if any, of their time savings looking for additional revenue generating activities. They could spend the additional time in leisure, engaged in capital investment activities that do not earn revenue for a delayed period of time (school, building their house, etc.), increasing their care activities that improve the human capital of children, also with delayed revenue benefits. In peri-urban settlements, much revenue generating activity is also very informal, especially for women whose time is most affected by water access, and harder to detect through common labor surveys.
2. That there is a demand for the increase in labor. The MCC interventions are taking place in concentrated areas of Lusaka. There is the possibility that the demand for labor in these areas is not sufficient to meet the new supply and beneficiaries will be forced to travel to look for work in areas where the health benefits from the Compact will not be felt.

Risk: Even with the accomplishment of health outcomes, without beneficiaries looking for and engaging in additional revenue generating activities there will not be an increase in household income.

Risk Monitoring: Part of the evaluation survey will ask questions on time use to determine the amount of time spent looking for and engaged in additional revenue generating activities, and will focus on informal as well as formal work.

6: Reducing non-revenue water is intended to improve the financial stability of LWSC however this would necessitate that:

1. Reduction in non-revenue water is significant enough to improve LWSC financial sustainability. This reduction in non-revenue water would need to drastically increase revenue while;
2. Costs do not disproportionally increase. The source for cost changes are numerous, many of which like operations and maintenance will increase under the Compact, while the source of revenue is single (metered connections) and dependent on households not only connecting but paying their water bills.

Risk: Costs for LWSC will permanently rise as a result of the Compact, as opportunity for theft could increase with an extension of the network into new areas, while there is no guarantee revenue streams will increase proportionately. As a result there is a possibility LWSC is left in a more untenable position post-Compact than before.

Risk Monitoring: As with many aspects of this Compact, given it is large infrastructure, there is a delay in the information feedback for many of the decision making processes that can mitigate some of the risks identified here. In the case of this particular risk, households will not connect to the water supply network until after construction is complete on the network in their area, perhaps even long after construction is complete if at all.
Because of this our evaluation will track household connections into the Post-Compact period against targets as established in our ERR.

6.1: Decreasing non-revenue water can be achieved without any additional households connecting to the supply system. However improving the financial sustainability at LWSC is dependent on additional households connecting to the supply network and paying their bills to the degree that the cost of the improvement, expansion and maintenance of the sanitation network is offset.

Risk: Without this revenue LWSC would not be able to maintain its current system or expand it to new beneficiaries post-Compact.

Risk Monitoring: The number of new connections and resulting revenue will be monitored and compared to increased LWSC costs and sustainment plans.

7: While a reduction in medical costs, as a result of a decrease in illness, does not automatically result in an increase in household income (because amount of revenue has

not increased, only disposable income); it is assumed that people go to the doctor or purchase medicine when they are sick.

Risk: While it is assumed people incur some costs when they are sick, our ERR model assumes that most of these costs are time costs due to not being able to earn revenue. As a result, medical costs are assumed to be low hence the risk associated with this assumption is low given our current logic. This logic could change depending on baseline data collection regarding medical costs incurred by households due to water borne illness.

Risk Monitoring: Baseline data collection will focus on consumption patterns of households, including medical costs associated with water borne illness. This will confirm or enable us to re-assess this assumption.

8: The ERR assumes a certain rate of revenue per additional hour engaged in a revenue generating activity, this serves to inform our targets regarding increases in household income. There is a possibility that while time spent engaged in revenue generating activities increases, there may not be expected increase in household income since the rate of revenue may not be as high as expected. It is entirely possible that people may experience a diminishing rate of return per unit of revenue generating labor instead of a consistent rate.

Risk: If a diminishing rate of return is experienced then targets for household increases in income could not be accomplished.

Risk Monitoring: Household surveys will be designed to track time spent engaged in revenue generating activities and the resulting additional household revenue to inform ERR assumptions.

9: It is assumed in our ERR that children, if they are the water gatherers and incur a time savings, will attend school instead of using their time savings to engage in revenue generating activities. This could potentially lead to higher household revenue but at a much later date after the child has completed their schooling. A further assumption is that school attendance is a valid option for children experiencing time savings, meaning that schools are accessible, there are no cost prohibitions, etc.

Risk: The risk associated with this assumption is that children engage in revenue generating activities instead of using their time savings to attend school.

Risk Monitoring: The current survey only monitors time savings for water collectors hence if children are not the primary water collectors for the household then they will not be included in the survey as they will not be incurring any time savings. If the children are the primary water gatherers then the parents will answer survey questions on behalf of the children.

10: Increased coverage, as measured by access, is dependent on household connections to the network. The ERR established targets for the number of household connections required for the intended outcomes and is based on various assumptions:

1. Households can afford connection costs;
2. If the landlord does not connect, tenants gain access in some way;
3. Rental prices do not increase to the point that the poorer beneficiaries targeted by the Compact from being "priced out";
4. Tenants are not evicted from houses without due process being followed; and
5. Landlords who connect to the network give access to their tenants as well.

Risk: Without the targeted number of household connections and access to intended beneficiaries, costs may rise without any health or economic benefits. If poorer tenants are forced to move due to evictions, are priced out or do not gain access through their landlord, then the Compact will still accrue some benefit but for a richer pool of beneficiaries and at a possible lower level of impact outcome.

Risk Monitoring: While individual households may not be able to afford their own connection, they may gain access through neighborhood household connections that they have right of usage to, which could lead to some health and economic benefits. Institutional strengthening and IEC activities implemented in coordination with Lusaka City Council (LCC) will address tenant and landlord rights and responsibilities with respect to water and sanitation service access. Surveys will monitor the source for households' increased water access, if there is any, as well as number of new connections and household expenditures disaggregated by poverty level, and landlord/tenant status. Additionally rental prices and evictions related to the inability of tenants to pay rental rate increases will be monitored. Given that all legal household connections to the supply network must take place under LWSC supervision, LWSC will track the number of new connections to assess how well the ERR assumptions on the number of new household connections hold valid. This will be course this is under the assumption that the vast majority of new connections will be made legally. Through monitoring household consumption data, rough estimate of the affordability of the new water bills households are incurring will be obtained (for household consumption and sanitation) but not a definitive answer. LWSC will also be reporting on household disconnections due to non-payment.

11: Improved sanitation coverage is the result of not only an extension of sanitation infrastructure but from having toilets connected to the network so they may be used in a sustainable manner (which denotes affordability and proper O&M). Hence improved coverage is dependent on house connections to the network in addition to access to toilets connected to the network. This does not mean that all households require their own connection and connected toilet but that people in that household have access to a connected toilet. The set of landlord-tenant issues/risks noted above for water apply to sanitation as well, with potentially higher risk of landlords preventing access to improved

sanitation facilities. Water bill increases from water-borne sanitation must also be affordable.

Risk: If people cannot afford to pay for access to the piped sewer network and provision of a flush toilet, or are not willing to pay, there will not be health benefits associated with this intervention.

Risk Monitoring: LWSC is leading a working group in developing a solution whereby a tariff structure for provision of house connections and toilets will be established and the Impact Evaluation will monitor access to network connected toilets. IEC and sanitation marketing will focus on increasing people's understanding of the importance of sanitation to increase willingness to pay, promote maintenance of facilities, and addressing landlord/tenant conflict. Institutional strengthening with LWSC will improve policies for increasing affordability for the poor on an ongoing basis. Qualitative evaluation methods could examine people's responses to the new connection opportunities, economic and social barriers to participation, and effectiveness of mitigation measures.

12: Achieving improved sanitation coverage is dependent on the improved sanitation system being able to meet the newly created demand on the system as a result of Compact activities.

Risk: If the new demands on the system outpace the capability of the system, resulting in overflows, blockages, etc., then an increase in access may not be achieved. Such a scenario would result in an actual decrease in access because loss of trust in the system could result in households pursuing other alternatives such as open defecation, pit latrines, etc.).

Risk Monitoring: Monitoring data from LWSC on system capacity and demand will be triangulated with data from the impact evaluation that assesses beneficiary use and satisfaction towards the sanitation network.

13: The assumptions regarding incurring of medical costs, number 7 in the Water Supply logic, apply here as well.

14: Achieving the targeted reduction in flooding assumes that the new capacity of the drainage infrastructure is adequate for standard rainfall. This means that the targets for the reduction in flooding are reasonable given the standard rainfall and new drainage capacity.

Risk: If the targets are too high then it could be that the targets for the subsequent health and economic outcomes could be too high as well and overestimate Compact effects. Alternatively, if the targets are too low then MCC and MCA-Zambia would have overestimated the negative impact of flooding and drainage issues.

Risk Monitoring: The data collected from indicators on the reduction in flooding will be monitored in comparison to the baseline data to determine adequacy of targets.

15: Having a decrease in flooding result in a decrease in water borne illness assumes that the water borne illness is due to flooding and not some other source.

Risk: If flooding decreases but there is no decrease in the incidence of water borne illness then there is a possibility that the wrong source of illness is being targeted.

Risk Monitoring: The evaluation will attempt to control for other sources of water borne illness in determining the role of flooding in causing water borne illness, but the ability of the Impact Evaluation to do this is extremely limited due to the lack of a valid control group.

16: While business may be open more because of a decrease in flooding, there may not be sufficient demand to increase revenue in a measureable way. It could be that demand is largely being met with the current situation and that an increase in supply on the business side (more hours of operation) does not automatically mean an increase in demand by customers.

Risk: Having no change in business revenue means that those households of business owners may not experience an increase in household income resulting from an increase in business revenue (they may still experience an increase in income from time savings, etc.)

Risk Monitoring: Measures of business revenue before and after a decrease in the amount of flooding, as well as measures of hours of operation, will hopefully demonstrate how much change of revenue, if any, is due to the decrease in flooding.

17: If flooding is frequent enough there is the possibility that businesses have acclimated to the flooding and design their structures and conduct their business in a way that accounts for frequent flooding. As a result, there may not be a measureable change in property damage due to flooding.

Risk: While property damage leads to the incurrence of cost by property owners, if there is presently no significant property damage due to flooding, then the benefit stream in the ERR would need to be adjusted.

Risk Monitoring: Data will be collected on this assumption with the intent to inform the calculation of this particular benefit stream in the ERR.

18: While businesses may experience an increase in revenue there is no guarantee that this increase in revenue will translate into high household income. The revenue could be invested in ways that do not measure as income. For example the increase in revenue

can be used to expand inventory for the business or to improve the physical structure itself.

Risk: If businesses are experiencing an increase in income and using the money in ways that do not measure as household income then the risk varies depending on how the increased revenue is used. If the increased revenue is used in risky ventures that do not eventually translate into higher household income then the risk is high, etc.

Risk Monitoring: This risk is difficult to monitoring as the households included in the "flood" survey are not the business owners that will be included in the survey.

19: Because the Drainage Master Plan has not yet been developed it is not yet known the intermediate outcomes that will need to be achieved in order for "Improved Drainage Management" to result in a "Decrease in Flooding". Once the Drainage Master Plan is developed this causal channel will need to be elaborated.

20: Given that sustained health outcomes are dependent upon consistent use of proper sanitation techniques; this requires a degree of institutionalization of IEC activities to ensure that beneficiaries maintain good sanitation practice. It has been demonstrated in previous WASH campaigns that consistent IEC is required for sustained application of proper water, sanitation, and hygiene practices.

Risk: Without an institutionalization of IEC activities there is a risk that proper water, sanitation, and hygiene practices will not be applied long after Compact IEC activities have ceased.

Risk Monitoring: Capacity building for sustained IEC is part of institutional strengthening activities and a possible evaluation will assess the sustained impact of these activities.

21: The provision of boreholes and water supply in some of the more affluent L3 areas are targeting increasing revenue streams for LWSC and not necessarily health outcomes for the beneficiaries. It is unlikely that the beneficiaries in these areas will experience any health impacts as a result of the new water supply given the higher socio-economic status of the beneficiaries.

Risk: Given the prominence of pre-existing private boreholes in the treatment areas there is the risk that beneficiaries will choose not to tap into the new water system and hence the targeted revenue will not be generated for LWSC, as a result of the treatment and the financial sustainability of LWSC is undermined.

Risk Monitoring: The impact evaluation will track the number of connections into the new water system to ascertain whether the number of targeted connections is being obtained. Additionally other possible evaluation methods could be implemented to

assess the factors affecting household decision making on whether to hook up to the new system or not.

22: In order for the drainage master plan to lead to improved drainage management there must exist the capacity (resources, skill sets, effective organizational structures/process, etc.) within LCC to not only implement the master plan but to meet the new requirements placed on it as a result of Compact activities.

Risk: If sufficient capacity within LCC does not exist to meet the new requirements placed on it by Compact activities the new master plan will not only fail to be fully implemented but the new drainage infrastructure will not be properly managed and any health and economic outcomes would not be met.

Risk Monitoring: MCC and MCA-Zambia will need to conduct a capacity assessment of LCC to determine the ability of LCC to:

- Perform the functions required during Compact implementation
- Sustain the effects of Compact activities

This assessment would serve as the basis for an action plan to ensure sustainability of Compact investments.

2.3 The Compact Activities

The Compact consists of two activities and multiple sub-activities:

1. Infrastructure Activity ($291.7 million): Interventions for this activity were selected to support the continued future growth of LWSC's ability to better manage Lusaka's water sector. As such, a majority of the proposed interventions is focused on rehabilitation of the core water supply network, including those designed specifically to reduce Non-revenue Water (NRW). Additionally this Activity includes interventions to expand the water supply network, rehabilitate and enlarge select sewer networks, and improve select drainage infrastructure. All of the project components considered in this Activity were based on the results of Investment Master Plans developed for both the Water Supply and Sanitation sectors. Each of the following project components was selected based on the results of Feasibility Studies undertaken for select priority projects identified in the Investment Master Plans and in consultation and agreement with GRZ:-

a. Core Water Network Rehabilitation: This component includes rehabilitation at the intake/treatment plant at the Iolanda transmission and distribution centers; strengthening of the water supply network primary distribution backbone; and reduction of unaccounted for water or Non-Revenue Water (NRW). The NRW for LWSC system stands at 48% of the total water delivered to the LWSC system. The objective of this project component is to reduce NRW to 25% by the end of the Compact term through a number of interventions. The Core Water Network Rehabilitation component is expected to provide more reliable water service and increased water supply and coverage as leakages are reduced and intake is improved. As this component addresses issues fundamental to supply, the component is considered a prerequisite for any water supply expansion project in the network.
b. Chelston Distribution Line Rehabilitation and Expansion (Water): This component consists of improvements to the water supply network in the Chelston Branch, improving supply in Mtendere, Kamanga, Kwamwena, and Ndeke-Vorna Valley areas of Lusaka. This project component is expected to connect beneficiaries by either household connection or by kiosk.
c. Chelston and Kaunda Square Sewer sheds Rehabilitation and Expansion (Sanitation): This component consists of improvements to the Chelston pump station and force main; and rehabilitation of the Kaunda Square treatment ponds, the associated interceptor, and expansion of household sewer services in Mtendere.
d. Central Distribution Line Rehabilitation and Expansion
   This components consists of extension of LWSC secondary and tertiary networks into DMAs including the supply and installation of consumer connections & water meters. Construction of kiosks will also be undertaken in this infrastructure component.
e.
f. Bombay Drain Improvements (Drainage): This component consists of improvements to the Bombay drain from Kabwata to the outfall into the Ngwerere stream. This outfall system conveys the runoff from the majority of the downtown business district areas of Lusaka. Improving the flow capacity of the Bombay drain is also expected to directly reduce flooding in some of the peri-urban areas, including Kamwala South, Mandevu, Garden West, and Chilulu.

2. 'Institutional Strengthening ($19.7 million).In addition to the infrastructure improvements, investments have been identified to help support the incumbent utility (LWSC) and the municipal authority (LCC) which have jurisdiction over the proposed infrastructure investments under the LWSSD Project. The investments are organized into three sub-activities; (i) Support to LWSC; (ii) Support to LCC; and (iii) Innovation Grants for Pro-Poor Service Delivery.

   a. Assistance to LWSC:

   This sub-activity is focused on building the capacity of LWSC to conduct comprehensive asset management planning and execution, environmental management and monitoring, outreach, and pro-poor water-sanitation service delivery.

   Asset Management: This project is expected to improve the financial position of LWSC significantly and provide an opportunity to institute a comprehensive program of maintenance for all of the LWSC assets. This component will enable LWSC to improve its maintenance capacity and capability; specifically to (i) further develop its Electronic Data and Management Systems (EDAMS) platform to incorporate systemization of maintenance; (ii) create an asset register; (iii) provide diagnostic and ultrasonic monitoring equipment; and (iv) systematically plan maintenance, asset renewal and capital programs in an affordable manner. Additionally this component will assess the most effective modality for conducting maintenance through the use of in-house resources, performance-based contracts, or a combination of the two.

   Environmental Management: This component is expected to strengthen the utility's environmental management and monitoring capabilities, specifically as they relate to monitoring effluents, treated sewage, and water quality. It is also expected to help initiate and integrate LWSC environmental management system into the utility's broader corporate culture and enterprise systems, as appropriate.

   Social Inclusion and Gender Mainstreaming: This component will provide technical assistance for the development of policies, planning, human resources and budgets to improve LWSC's ability to address the challenges of service provision to the poor, especially affordability, and to address gender.

   Information, Education, and Communications (IEC)/Sanitation Marketing: IEC is proposed to strengthen the capacity of both LCC and LWSC to conduct

Information, Education, and Communication (IEC) campaigns to address sanitation-related health and hygiene risks and improve practices, sensitize beneficiaries to opportunities, costs, and maintenance of new water, sanitation and drainage systems, and informing socially vulnerable populations about new income generating opportunities in the sanitation sector.

IEC shall be implemented through Technical Assistance which will include a systematic and coordinated approach to messaging for peri-urban Lusaka, for example, messages that promote and sustain the proposed investments, as well as broader health, hygiene and security related to water and sanitation will be designed and implemented.

b. Assistance to LCC:

Technical Assistance for this project will focus first on defining the flooding problem in Lusaka and then on developing a road map for mitigating it. Second, this component will focus on strengthening LCC's institutional capacity.

Comprehensive Drainage Investment Master Plan: The first phase of this project will be accomplished through the development of a drainage strategic plan that will identify root causes of the flooding problem in different parts of broader Lusaka region, and include a proposed road map and a menu of technical interventions to solve the flooding problem. The strategic plan will also include a detailed study of the groundwater table in southwestern Lusaka.

Strengthening Institutional Capacity: The second phase of this component will provide technical assistance to improve LCC's institutional capabilities to manage the drainage sector, particularly in the areas of planning, management and maintenance of drainage infrastructure and services in and around the city. As part of this component, the Compact will support GRZ efforts to establish of an inter-institutional coordination strategy to coordinate future planning decisions on water resources management made by the national government, local authority, private sector, and/or the donor community. The groundwater study, as well as the proposed inter-institutional coordination strategy, will be a necessary to better determine proper engineering and institutional solutions for the serious flooding problem in the city.

Environmental Management: This component will strengthen the municipality's environmental management and compliance systems in order to enhance the

sustainability of the Compact's investments and contribute to the health and well-being of beneficiaries.

Social Inclusion and Gender Mainstreaming: This component will provide technical assistance for the development of policies, planning, human resources and budgets to improve LCC's ability to address the challenges of service provision to the poor, especially affordability, and to address gender matters.

Information, Education, and Communications (IEC): This component is proposed to assist LCC with its outreach activities through an Information, Education, and Communication (IEC) campaign to sensitize Lusaka residents and socially vulnerable beneficiaries about waste disposal and new business and service opportunities that may be created by Compact investments through the provision of drainage services.

c. Innovation Grant for Pro-Poor Services Delivery:

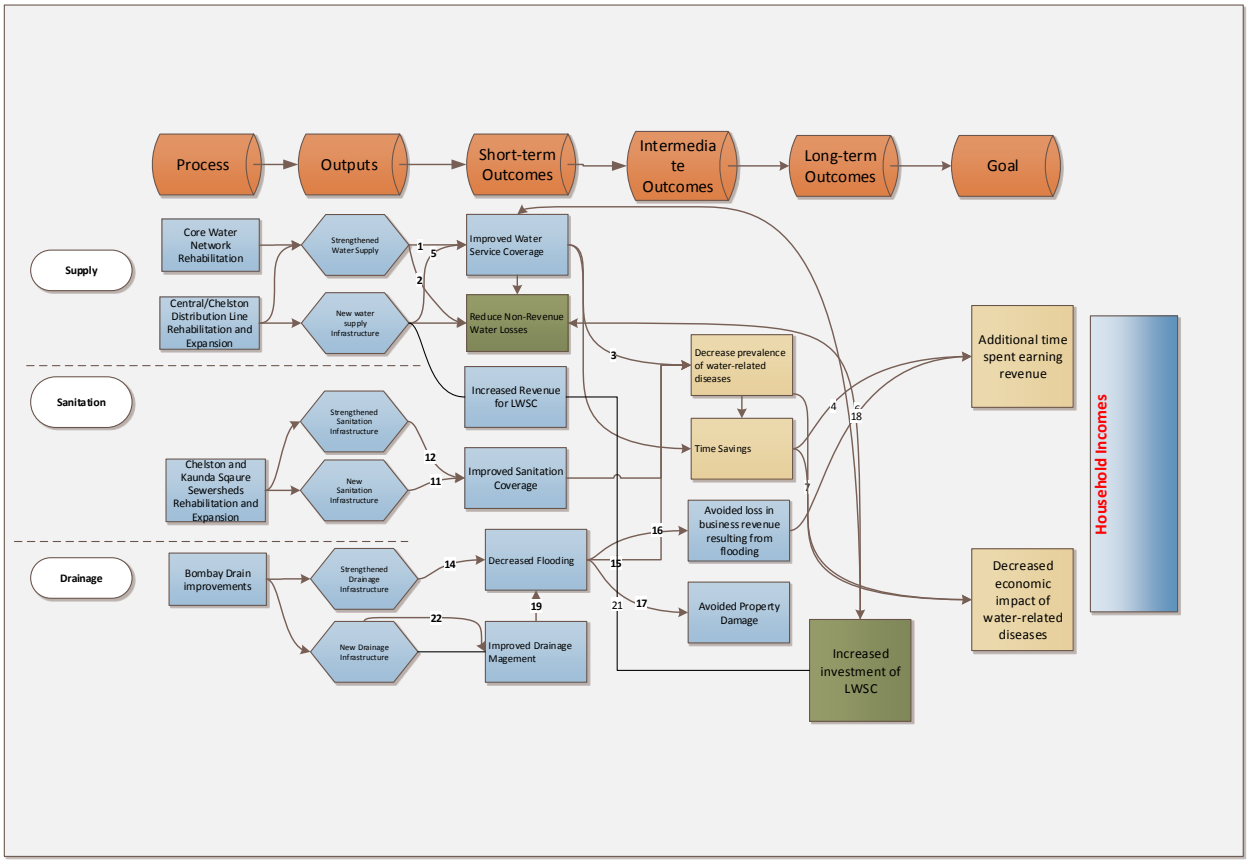
This component will provide complementary services to the Compact's infrastructure and technical assistance investments, increasing access of the poor to services while increasing private sector participation in the Compact and potentially creating new job opportunities for Zambians. Growing private sector participation in the Compact will be undertaken with a focus on increasing SME participation in the program and broadening access to infrastructure services and new opportunities through innovation grants.

By creating a space for innovation, the MCA-Zambia will have an opportunity to solicit and identify partnerships and other arrangements to enhance and ensure the sustainability of Compact objectives. The implementation of this component may include the MCC's Annual Partnership Statement (APS) mechanism and/or other competitive processes.

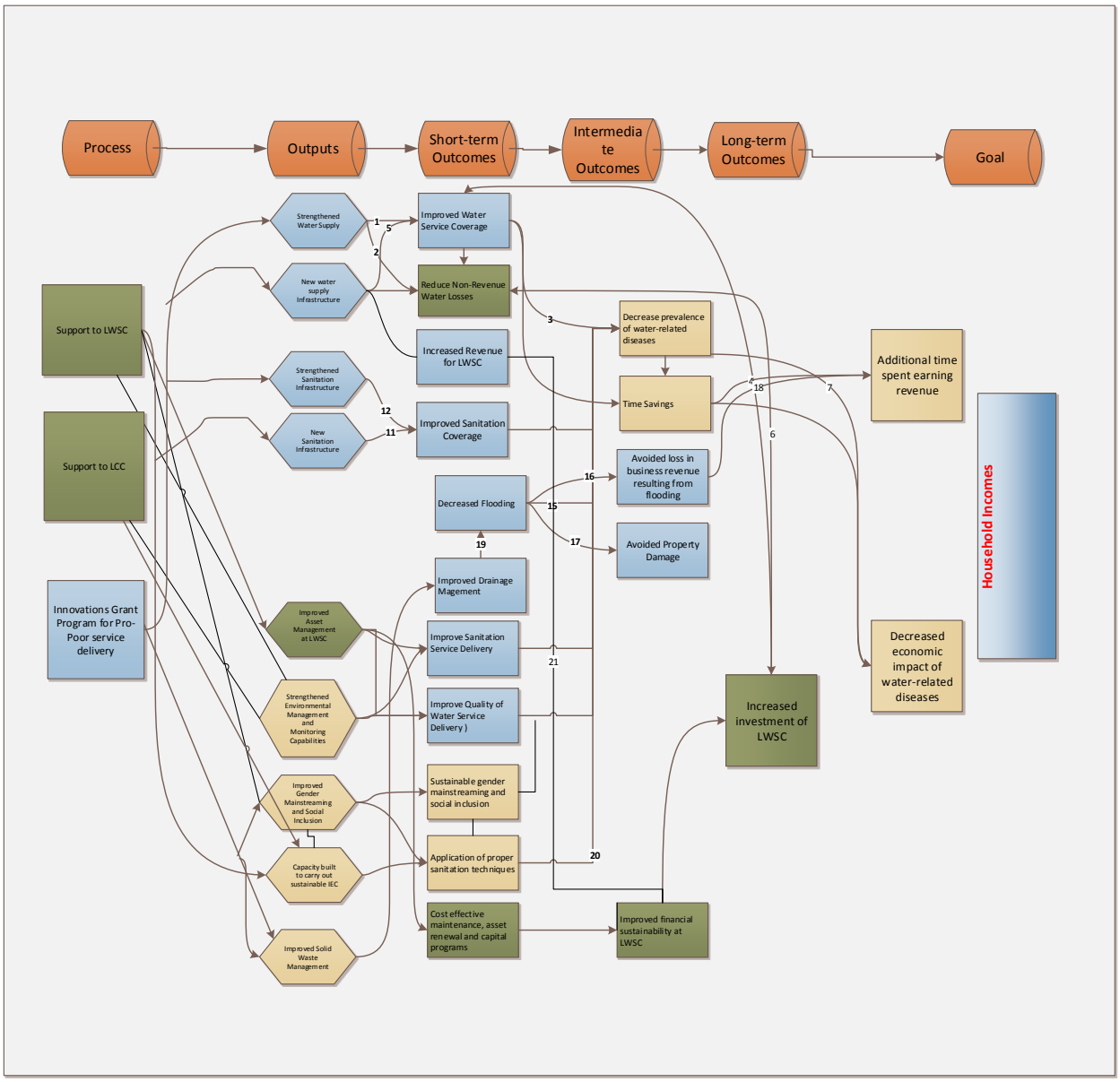
2.4 Activity Logics

The path ways to measure outcomes and impact of Compact activities has been delineated into thwo logic models, Infrastructure Activity and Institutional Strengthening Activity. These logics show how using MCC investment, project outputs, outcomes and impact will be attained. These logics are shown below:

Infrastructure Activity


Process
Outputs
Short-term Outcomes
Intermediate Outcomes
Long-term Outcomes
Goal
Supply
Sanitation
Drainage
Core Water Network Rehabilitation
Central/Chelston Distribution Line Rehabilitation and Expansion
Chelston and Kaunda Sqaure Sewersheds Rehabilitation and Expansion
Bombay Drain improvements
Strengthened Water Supply
New water supply Infrastructure
Strengthened Sanitation Infrastructure
New Sanitation Infrastructure
Strengthened Drainage Infrastructure
New Drainage Infrastructure
Improved Water Service Coverage
Reduce Non-Revenue Water Losses
Increased Revenue for LWSC
Improved Sanitation Coverage
Decreased Flooding
Improved Drainage Magement
Decrease prevalence of water-related diseases
Time Savings
Avoided loss in business revenue resulting from flooding
Avoided Property Damage
Increased investment of LWSC
Additional time spent earning revenue
Decreased economic impact of water-related diseases
Household Incomes
1
2
3
4
5
7
11
12
14
15
16
17
18
19
21
22

Institutional Strengthening



2.5 Projected Economic Benefits and Beneficiaries

2.5.1 Economic Rate of Return (ERR) Analysis

MCC's methodology for ERR analysis is best described as micro-economic growth analysis, which measures the expected increases in household incomes or the value-added of individual firms as a result of the intervention. ERRs can also be considered MCC's best pre-investment estimate of the likely economic impact of the proposed investment. These ERRs also include income or value added that is expected to be generated through environmental and social improvements, but do not attempt to quantify and incorporate the broader social value of these improvements. More details of the ERR concept can be found on the MCC website. Ideally, every ERR calculation considers two scenarios:

1. The expected outcome with the project investment; and
2. The expected outcome without the project investment.

The water supply and sanitation project is expected to benefit approximately 1,240,000 individuals over twenty years, which is the standard length of time allocated to infrastructure activities in MCC ERR's. The ERR for the entire project is estimated at 14.7% as outlined in Table 1.

The benefit streams supporting the investment are health, time savings, non-revenue water, local labor, avoided property damage and avoided loss in value added.

2.5.2 Beneficiaries

The LWSSD Project is expected to benefit approximately 1,199,962 individuals over twenty years in some way, shape or form. Of these beneficiaries, approximately 73% are expected to be poor, which is defined as living on less than US$2.00 per day on a purchasing power parity basis. The main channels through which these beneficiaries are expected to benefit from the LWSSD Project are through time savings, improved health outcomes and a reduction in NRW. The entire ERR calculation is available on MCC's website.

3. MONITORING COMPONENT

3.1 Summary of Monitoring Strategy

Monitoring is defined by MCC M&E Policy as "a continuous function that uses the systematic collection of data on specified indicators to gauge progress toward final program goals and achievement of intermediate results along the way". For MCA-Zambia, Project and Activity performance will be monitored systematically and on an on-going basis through the indicator tracking system. This analysis will allow managers of MCA-Zambia and MCC to make programmatic adjustments as necessary with the view towards improving the overall impact of the Program.

For the purposes of Impact Evaluation efforts, the Independent Evaluator will be responsible for monitoring implementation progress and coordinating implementation with the evaluation design. This monitoring will be continuous but will be reported quarterly by the Independent Evaluator. Other Institutional Strengthening will have separate monitoring frameworks set up to inform implementation.

3.2 Indicators

Project and Activity level outcomes will be measured by indicators. The Indicator Definition Tables provide a detailed definition of each indicator; unit of measurement, source of data, method of data collection, frequency of data collection, and the entity responsible for collecting the data.

The Output Indicators presented in the table are preliminary, and implementers may request revisions or propose modifications before beginning implementation of the relevant Activity. This M&E Plan will be amended to reflect any changes made to those indicators, after they have been approved by MCC.

3.2.1 Indicator Levels

Goal Indicators: these indicators measure the economic growth and poverty reduction that occur during or after implementation of the program. For MCC Compacts, goal indicators will typically be a direct measure of local income. In this Compact, income will be measured using expenditure methods.

Outcome Indicators: these 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: these indicators measure immediate results that arise from processes and the implementation of activities.

Process Indicators: these indicators measure progress toward the completion of Project Activities. They are a pre-condition for the achievement of output indicators and a means to ascertain that the work plan is proceeding on time.

3.2.2 Common Indicators

Common indicators are used by MCC to measure progress across Compacts within certain sectors, in the case of the Zambia Compact these are water-specific as well as disbursement-related indicators. They allow MCC to aggregate results across countries and report to key external stakeholders. Common indicators may be specified at all indicator level (process, output, outcome and goal).

The list in Table 3 shows common indicators which are aggregated across countries for water, sanitation and hygiene Compacts. Only selected indicators appropriate to Zambia have been included.

Table 1: List of Common Indicators

CI Code	Indicator Level	Indicator Name
WS-3	Process	Value of signed water and sanitation construction contracts
WS-4	Process	Percent disbursed of water & sanitation construction contracts
WS-5	Process	Temporary employment generated in water and sanitation construction
	Output	People trained in hygiene and sanitary best practices
WS-7	Output	Water points constructed
WS-8	Outcome	Non-revenue water
WS-9	Outcome	Continuity of service
WS-10	Outcome	Operating cost coverage
WS-11	Outcome	Volume of water produced
WS-12	Outcome	Access to improved water supply
WS-13	Outcome	Access to improved sanitation
WS-14	Outcome	Residential water consumption
WS-16	Outcome	Incidence of diarrhea

3.3 Data Sources

Data sources have been identified and vetted for all the indicators listed in Annex 1. Monitoring data will be obtained from primary sources including implementing partners (LWSC and LCC), Construction Supervising Engineer (CSE) and contractors. Higher level indicators will be measured through impact evaluations and special studies and will be reported to MCC when data becomes available. When appropriate, secondary data will

also be obtained from government institutions such as Central Statistics Office (CSO) and international agencies.

Methods of Data Collection

Both qualitative and quantitative data collection methods will be used to assess progress made towards the goal of the Compact. Quantitative methods will include surveys whereas focus group discussions and key informant interviews are likely form of qualitative methods. When appropriate, participatory methods such as observations will also be used to collect data. Qualitative methods will help to explain the presence or absence of outputs, outcomes and impacts, as well as to assess and explain the effectiveness of some of the institutional strengthening activities and IEC.

3.4 Indicator Baselines and Targets

Indicator baseline and targets have been set for each indicator (Annex 2). Where data is not available, the baseline values and end of Compact targets will be completed when data become available.

3.5 Frequency of data collection

Data will be collected at multiple points during the Compact period. Depending on the level of indicator, the standard cycle of data collection will be quarterly, semi-annually and annually. Data collection will also be synchronized with MCC reporting to ensure efficiency.

Implementing entities will be required to report on project milestones and outputs on a monthly basis and where appropriate quarterly.

3.6 Data Quality Reviews

Data quality standards will be prioritized by MCA-Zambia to ensure transparency and quality in the processes of data collection as well as manipulation of data. High quality data ensures usability and high confidence in decision-making processes at all levels. For this reason, all attempts will be made to ensure that data is of high quality through adhering to data quality standards and conducting Data Quality Reviews (DQRs).

3.6.1 Data Quality Standards

Data quality standards will mirror MCC standards of validity, reliability, timeliness, precision and integrity.

Validity: Data are valid to the extent that they clearly, directly and adequately represent the result to be measured. Measurement errors, unrepresentative sampling and simple transcription errors may adversely affect data validity. Data should be periodically tested to ensure that no error creates significant bias.

Reliability: Data should reflect stable and consistent data collection processes and analysis methods over time. Project managers and M&E staff should be confident that progress toward performance targets reflects real changes rather than variations in data collection methods. Reliability can be affected by questionable validity as well as by changes in data collection processes.

Timeliness: Data should be available with enough frequency and should be sufficiently current to inform management decision-making. Effective management decisions depend upon regular collection of up-to-date performance information.

Precision: Data should be sufficiently accurate to present a fair picture of performance and enable project managers to make confident decisions. The expected change being measured should be greater than the margin of error. Measurement error results primarily from weakness in design of a data collection instrument, inadequate controls for bias in responses or reporting, or inadequately trained or supervised enumerators.

Integrity: Data that are collected, analyzed and reported should have mechanisms in place to reduce the possibility that data are subject to erroneous or intentional alteration.

3.6.2 Conducting a Data Quality Review

Data Quality Reviews (DQRs) are a mechanism to review and analyze the utility, objectivity and integrity of performance information. DQRs include the following:

- Quality of data
- Data collection instruments
- Survey sampling methodology
- Data collection procedures
- Data entry, storage and retrieval processes
- Data manipulation and analyses
- Data dissemination

MCA-Zambia will hire an independent entity to conduct the DQR and will select, award and administer DQR contracts in accordance with MCC Program Procurement Guidelines (PPG).

The objective of any data quality review is to verify the quality and the consistency of performance data over time, across different implementers and reporting institutions. Such data quality reviews will also identify cases in which the highest degree of data quality is not possible, given the realities of the data collection circumstances. These assessments will cover data reported from implementers and other data sources as necessary, such as the Central Statistics Office (CSO).

Internal DQRs will also be undertaken by the M&E unit on program process and output level indicators to ensure compliance to indicator definitions, manipulations and data collection procedures.

3.7 Social and Gender Analysis

Where appropriate, indicators will be disaggregated by sex, age, socio-economic status (poverty level), as well as area. The purpose of this disaggregation is to understand distributional impacts of MCC project benefits. Given the risk that social inequalities pose to accessing and sustaining benefits, disaggregation of data monitors the extent to which the project is benefitting or excluding different social groups, for example, the poor, women and girls. Table 4 shows the indicators that will be disaggregated by categories of social and gender differences at both primary and secondary disaggregation level:

Table 4: Social and Gender Disaggregated Indicators

Indicator Level	Indicator	Sex	Age	Household Income	Area	Primary Source of Data	Responsible Party	Reporting Frequency
Goal	Average Household income			X	X	CDC Survey	CDC	Other
Output	Temporary employment generated in water and sanitation construction	X			X	Contracts	CSE	Quarterly
Output	Length of water distribution network constructed				X	Engineers certificate	CSE	Quarterly
Outcome	Number of Connections				X	EDAMS	CSE	Quarterly

Indicator Level	Indicator	Sex	Age	Household Income	Area	Primary Source of Data	Responsible Party	Reporting Frequency
Process	Number of kiosks constructed				X	Engineers certificate	CSE	Quarterly
Outcome	Incidence of diarrhea	X	X		X	Household Survey	CDC	Other
Outcome	Time spent gathering water	X	X	X	X	Household Survey	CDC	Other
Outcome	Access to improved water supply				X	Household Survey	CDC	Other
Outcome	Access to improved sanitation				X	Household Survey	CDC	Other
Output	People trained in hygiene and sanitary best practices	X			X	Training Logs	SGA/IEC TA	Quarterly
Outcome	% of households practicing safe hygiene	X	X	X	X	Household Survey	CDC	Other
Outcome	Residential water consumption				X	Household Survey	CDC	Other
Outcome	% of business closures due to flooding					Business Survey	CDC	Other
Output	Length of Kms of drains rehabilitated / constructed[1]				X	Engineers Certificate	PMC	Quarterly
Outcome	Reductions in Travel Time due to decrease in flooding					Survey	CDC	Other
Output	No. of people trained in social and gender integration and social inclusion	X			X	Training Logs	SGA/IEC & IS TA	Bi-Annual
Output	Number of Grantees					Contracts	IGPM	Quarterly
Output	Value of Contracts signed with grantees					Contracts	IGPM	Quarterly
Output	No. of beneficiary Households	X		X			IGPM	Annual

Further studies will be conducted to assess outcomes of the Social Inclusion and Gender Mainstreaming activity, and the effect of the IEC and sanitation marketing activities.

3.8 Standard Indicator Reporting Requirements

[1] Water supply, sanitation pipes and drainage

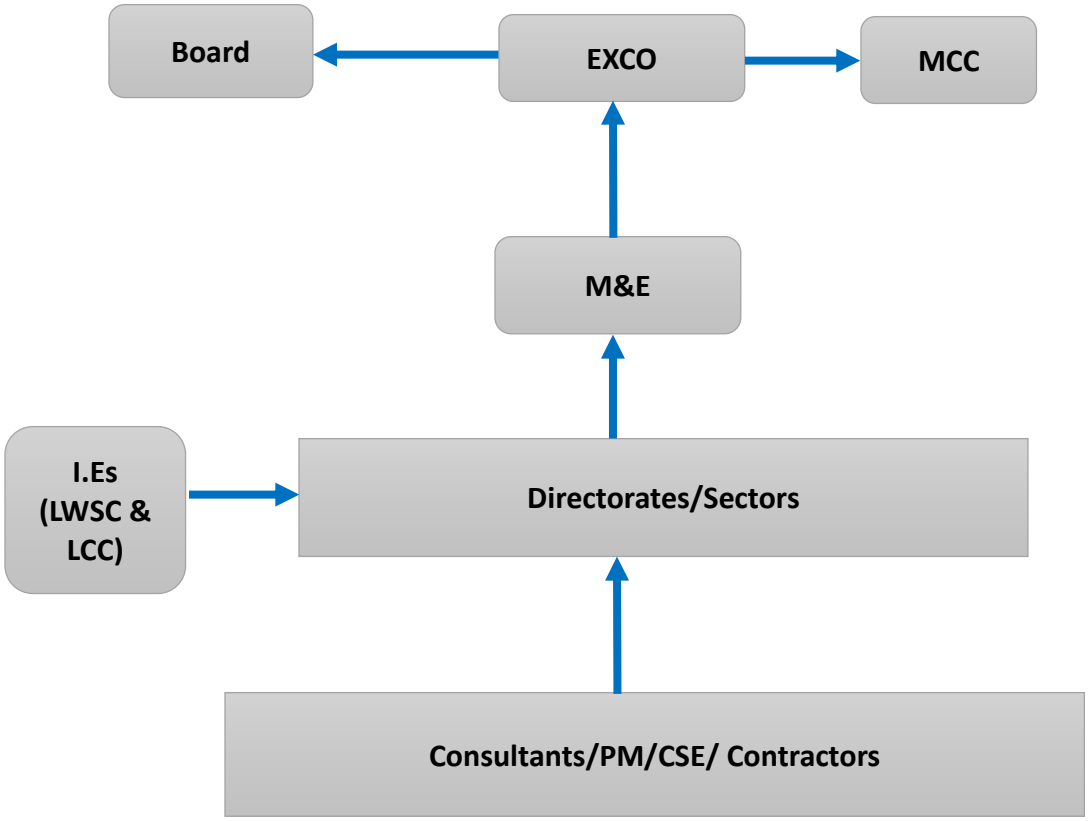
The Disbursement Request and Reporting package is submitted by MCA-Zambia to MCC on a quarterly basis. This includes the completed ITT, which displays performance targets (projections) and tracks progress against them (actual), as well as a corresponding narrative report which explains progress made and performance and any reasons for deviations from the targets when applicable.

The overall narrative report is the responsibility of all staff of MCA-Zambia and provides a brief description of the previous quarter's performance and explains how requested funds will be used in the coming quarter. The narrative report, which is not a public document and is limited to five pages, includes the following:

• Status of implementation of activities planned during the previous quarter for each component of the program and provides explanations where there are deviations from the plans,
• Challenges that might affect implementation and proposed measures to address these challenges,
• Significant M&E activities that took place during the quarter such as data collection, M&E Procurements and results of any M&E studies.
• Analysis of data and information from the ITT

The quarterly reports are submitted by MCA-Zambia M&E to Project Directorates for review.

Figure 1: Quarterly Reporting / Data Flow



4. EVALUATION COMPONENT

While good program monitoring is essential for program management, it is not sufficient for assessing ultimate results. The evaluation component of MCA-Zambia will comprise of three types of evaluations and will be consistent with MCC Evaluation Policy as follows;

i. Impact evaluation
ii. Performance evaluations and
iii. Special Studies.

4.1 Impact Evaluations

The Compact will be evaluated based on the extent to which the interventions contribute to the Compact Goal, which is to increase household income in selected peri-urban areas of Lusaka. Impact Evaluations are distinctive in their use of control and treatment groups

to establish a counter-factual to facilitate attributing outcomes to specific activities. The Compact Impact Evaluation will include a baseline survey, successive surveys and other forms of data collection in order to validate, through triangulation, findings of Compact effects. The baseline survey will be conducted prior to beginning of implementation affecting beneficiaries to ensure it serves as a valid comparison point.

Specifically, Impact Evaluations will measure the following:

- Effectiveness of program activities in meeting Compact goals;
- Attribution of measurable outcomes to interventions;
- Reasons behind the success or failure to achieve goals, objectives and targets;
- Unintended results of the program (positive and negative);
- Long-term sustainability of results;
- Re-estimated economic rates of return, comparisons to original estimates, and assessment of differences;
- Lessons learned applicable to similar projects.
- Distributional impacts

MCC will engage Independent Evaluators to conduct baseline and final evaluations to assess impact. The Independent Evaluator will be procured by MCC while data collection firms and firms to carry out any special studies will be procured by MCA-Zambia.

4.2 Special Studies

MCA-Zambia may request ad hoc evaluations or special studies of Projects, Project Activities or the Program as a whole prior to the expiration of the Compact term to be conducted by an outside entity contracted in compliance with the Procurement Plan.

4.3 Key evaluation questions

In order for this Impact Evaluation to inform decision making, end uses for each evaluation question should be identified before resources are expended in answering the question. Some questions are asked to inform the program logic while others are asked to inform policy discussion or implementation decision making. During the course of the evaluation it is entirely expected for new questions to arise as we test our logic and information needs arise.

The initial key evaluation questions center on three fundamental questions that Monitoring and Evaluation should answer:

1.) Are the correct activities to produce the designated outcomes being implemented? Meaning, were constraints to economic growth correctly and projects identified that contribute to the alleviation of those constraints correctly identified in a cost effective manner?

2.) Are activities being implemented according to the logic? Is the way we are implementing our activities in line with our original plans and intent? How is implementation influencing overall impact?

3.) What is our overall effect in achieving our goal and objectives? Why?

In order to answer these three questions the M&E strategy should incorporate analysis of several areas of focus including:

- The process by which projects were identified and designed;
- The program logic that lays out the case and effect relationships that begin with implementation of activities and ends with an increase in household income for beneficiaries ;
- Implementation of activities;
- The degree to which Compact activities were responsible for achieving objectives and goal (attribution of impact).

Evaluation Questions on Needs Assessment, Project Identification/Design, Logic, Implementation and Effect

Each area of focus outlined above has specific evaluation questions.

- Needs assessment and project identification
    - What was the evidence and process for decision making for identifying constraints to economic growth and selected projects to alleviate those constraints?
    - Are Compact activities the most effective mitigators against the constraints to economic growth (are we doing the right things)?
    - How did this needs assessment and project identification/design process affect the overall impact of the Compact?
- Program Logic
    - Was the program logic sound, meaning were the cause and effect relationships sufficiently articulated, contextualized or were there evidence gaps?

- Were assumptions clearly detailed and monitored? What assumptions held and which assumptions did not hold? Why?
- What were the contextual variables influencing the logic? Were these accounted for in program planning and implementation?
- Were the evaluation questions correctly linked to the logic, are additional questions needed or do some need to be changed?

- Implementation and program results
  - To what extent were activities undertaken; new activities were introduced; activities were fully implemented? What were the causal dynamics responsible for these changes?
  - Are there unintended impacts of the program (positive or negative)?

Additionally there are specific evaluation questions that relate to targeted impact of Compact activities. Social and gender analysis will be incorporated where appropriate, i.e. where there is the potential for differential impacts across social, economic, and demographic groups.

<u>Health</u>

- What are the health benefits attributable to each type of Compact activity?

<u>Safe Water Supply/Consumption</u>

- What are the current consumption rates of safe versus un-safe water consumption and usage?
- Do compact activities lead to an increase in safe water consumption?
- Are recipients of IEC treatments using effective sanitation habits?
- How sustainable are sanitation related behavior change?

<u>Economic and Social</u>

- Do households experience an increase in income due to compact activities?
- Are households able to afford household connections, toilets, and water bills?
- What are the current wages and probability of finding work for beneficiaries?
- What are the time and cost savings/use attributable to each Compact activity?

<u>Flooding</u>

- Is there a decrease in the frequency, intensity and duration of flooding?

- Is there a decrease in property damage and loss of business due to flooding?
- Is there a decrease in travel time due to flooding?

Lessons learned

- What lessons can MCC apply in future programs related to program design and implementation?
- What are the implications of the evaluation findings for scaling up, replication or long-term policymaking?

4.4 Evaluation Methodologies

Rigorous impact evaluation methods will be adopted with a clear counterfactual.
All evaluations will be conducted using a scientific rigorous method with an emphasis on with or without the project. It is anticipated that mixed method approaches will be used.

4.5 Data collection plans

An independent local data collection firm will be hired to collect data as required by MCA-Zambia and MCC. Baseline data collection will be done prior to implementation of construction activities.

4.6 Timing of analytical reports

Analytical reports will be produced after any study, including baseline. The results will be presented to stakeholders to deepen the understanding of the project progress. Quarterly review meetings will also be held.

5. IMPLEMENTATION AND MANAGEMENT OF M&E

The MCA-Zambia M&E activities will be conducted by sector directors and coordinated by the M&E unit. The PMC will also perform M&E tasks that will feed into the overall M&E strategy.

5.1 M&E Unit Structure and Responsibilities

The M&E unit of MCA-Zambia will have three staff members, with the Director M&E and Economics as the overall lead. The other two members will be M&E Specialists. Roles and responsibilities of these staff are given below:

M&E Director

- Guide the establishment of the M&E system, including data-collection, data-analysis and reporting systems;
- Collaborate with the Procurement Officer to prepare and conduct procurement of M&E contracts;
- Preparation of periodic reports for MCA-Zambia, Board of Directors, and MCC (including the Quarterly and Annual Performance Reports).
- Designing the impact evaluation strategy in collaboration with MCC and external consultants
- Advise MCA-Zambia management on all M&E issues, and also collaborate with all sectors regarding reporting requirements

Economics and Evaluations Specialist

- Act as an advisor to the M&E Director and MCA-Zambia Senior Management.
- Ensure that the M&E Plan and ERR analysis are modified and updated as improved information becomes available;
- Assist in designing the impact evaluation strategy in collaboration with MCC and external consultants;
- Ensure that findings are disaggregated by gender, age, and income, as applicable;
- Monitor economic aspects of overall program execution, including both financial and physical implementation and monitor key assumptions made in the ERR calculations for the program.

- Monitor economic conditions affecting implementation and the prospects for achieving program outputs and outcomes.
- Liaise with MCC on periodic revision of ERR analyses, particularly in support of project re-scoping.
- Collaborate with the Ministry of Finance on attribution and measurement of the Program's macroeconomic impact, including in particular on growth and poverty.
- Review periodic reports regarding program monitoring and evaluation that will be submitted to the Steering Committee, Stakeholders Group and MCC.
- Disseminate results and learning products among stakeholders
- Train counterparts and GRZ in evaluation approaches and coordinate with implementation.

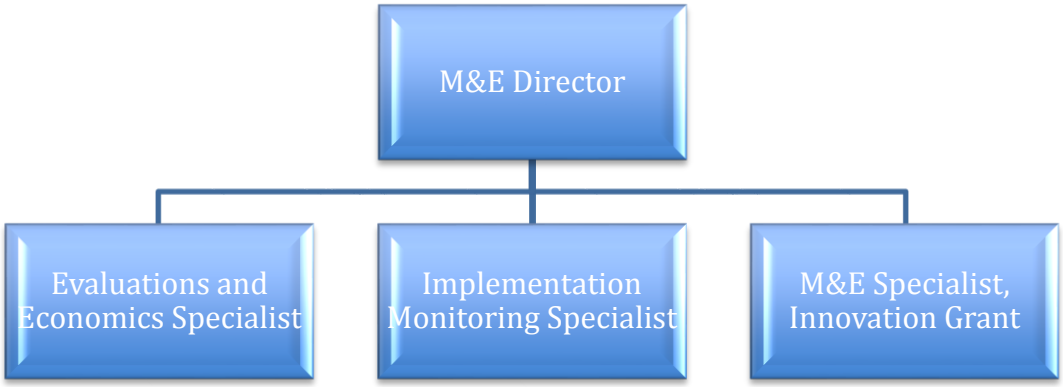
Implementation Monitoring Specialist

- Participate in monitoring through site visits, review of program reports
- Assist in the management and the implementation of the Compact's M&E Plan
- Facilitate learning exchanges and information dissemination;
- Organize and oversee regular independent data quality reviews
- Managing the MIS and producing reports as needed
- Capacity building of implementing entities in M&E
- Ensure that findings are disaggregated by gender, age, and income, as applicable;
- Assist in the preparation of periodic reports for MCA-Zambia, Board of Directors, and MCC (including the Quarterly and Annual Performance Reports). Assist M&E Director and Economist in the write up of quarterly and annual reports, data analysis and studies.
- Liaison with Implementing Entity M&E Point of Contacts to gather information and train these on the MCA-Zambia M&E plan.

M&E Specialist – Innovation Grant

- *Responsible for all M&E activities for the innovation Grant including reporting, evaluations and study designs.*

Figure 1: Structure of the M&E and Economics Unit



Additionally, the M&E unit will hire short-term consultants as need arises. The M&E and Economics unit will carry out or hire contractors to complete the following and other related activities:

- Capacity building /training of partners in M&E
- Rapid assessments of program interventions using participatory methods
- Operational research
- Documenting best practices and lessons learned

5.2 Management Information System for M&E

Results of M&E for MCA-Zambia will be used to improve performance and decision-making processes among all stakeholders. A comprehensive interactive MIS will therefore be developed for the MCA-Zambia. Among other benefits, the system which will be developed should have the following:

- Good processes (mechanisms) for reporting data/information with MCC
- Data quality assurance mechanisms
- User-friendly and can be used in simple to complex environments.
- Integration to other systems in the project cycle such as finance, procurement and project management.

5.3 Review and Revision of the M&E Plan

Before beginning implementation of the Project Activities, MCA-Zambia will orient staff and project implementers on how project performance is to be measured and will provide training necessary to comply with the M&E Plan. MCA-Zambia will also review comments and

suggestions from implementing partners and other stakeholders. MCC and MCA-Zambia may make adjustments to the M&E Plan as needed, provided any modification or amendment of the M&E Plan has been approved by MCC and is otherwise consistent with the requirements of the Compact and any relevant Supplemental Agreements between the Parties.

6. M&E Budget

The original M&E Budget estimate for M&E activities for the five year term of the Compact total $5,841,000, or 1.6 percent of Compact total. The table below outlines this estimated budget.

Zambia M&E Compact Budget (Estimated)

Activity	
Impact Evaluation Support	$2,900,000
Capacity Development and Software	$1,266,000
Special Studies and Analysis	$1,675,000

7. ANNEXES

Annex 1: Indicator Documentation Table

Annex 2: Table of Indicator Baselines and Targets

Annex 3: Modification Memo

Annex I: Indicator Documentation Table											
Results Statement	**CI Code**	**Indicator Level**	**Indicator Name**	**Definition**	**Unit of Measure**	**Disaggregation**	**Primary Data Source**	**Responsible Party**	**Frequency of Reporting**	**Additional Information**	**Rationale or Justification for Measurement**
Compact wide indicator											
Improved household Income		Goal	Average Household income	Average household income per year based on expenditure patterns	US Dollars	Female-headed household / Male-headed household	Household Survey	CDC	Other		Indicator to measure progress toward achievment of MCA-Zambia compact goal
Time saving		Outcome	Time spent gathering water	Total number of hours households spend gathering water per round trip. This includes waiting time for gathering water	Hours	Gender and age	Household Survey	CDC	Other		Tracks additional time saved through gathering water as water supply improves
Improved water service coverage	WS-9	Outcome	Continuity of service	Average hours of service per day for water supply.	Hours per day	Residential /Institutional commercial Industry (ICI)	LWSC Customer database	LWSC	Annual		This tracks the improvements by the utility in water delivery services
	WS-11	Outcome	Volume of water produced	Total volume of water produced in cubic meters per day for the service area, i.e. leaving treatment works operated by the utility and purchased treated water, if any.	Cubic meters per day		Meter Logs	LWSC	Quarterly	Calculation: Vt = Va + Vb where: Vt = Total Volume of water produced Va = Volume registered by water meter prior to the reservoir Vb = Volume of water purchased	The increased capapcity by the utility company in terms of increased water production needs to be measured
Avoided loss in business revenue resulting from flooding		Outcome	Percentage of business closures due to flooding	Percentage of time surveyed businesses were closed as a result of flooding in the flood plain of the project area per month during the rainy season	Percentage		Business Surveillance	CDC	Other		The indicator measure the economic impact of flooding on businesses
Activity 1: Infrastructure Activity											
	WS-12	Outcome	Access to improved water supply	The percentage of households in the MCC project area whose main source of drinking water is a private piped connection (into dwelling or yard), public tap/standpipe, tube-well, protected dug well, protected spring or rainwater.	Percentage	Urban/Rural and Female-headed household / Male-headed household	Household Survey	CDC	Other		This indicator tracks the number of households with access to improved water supply in the project area

Improved service coverage	WS-13	Outcome	Access to improved sanitation	The percentage of households in the MCC project area who get access to and use an improved sanitation facility such as flush toilet to a piped sewer system, flush toilet to a septic tank, flush or pour flush toilet to a pit, composting toilet, ventilated improved pit latrine or pit latrine with slab and cover.	Percentage	Urban/Rural and Female-headed household / Male-headed household	Household Survey	CDC	Other	MCA-Zambia will consider % of households who get access to and use an improved sanitation facility such as flush toilet to a piped sewer system. For MCA-Zambia the urban/rural disaggregation does not apply since the project is an urban one. Additional disaggregations by location will be in terms of the project sites	This tracks progress made toward improved sanitation
	WS-14	Outcome	Residential water consumption	The average water consumption in liters per person per day.	Liters per capita per day	Urban/Rural and Female-headed household / Male-headed household	Household Survey	CDC	Other	For MCA-Zambia the urban/rural disaggregation does not apply since the project is an urban one.	This indicator is necessary to help in modelling household water demand
Decreased prevalence of Water related diseases	WS-16	Outcome	Incidence of diarrhea	The percentage of individuals reported as having diarrhea in the two weeks preceding the survey	Percentage	Under age 5/5 years and older	Household Survey	CDC	Other		Proxy for measuring reduction in water - related diseases due to improved water supply
Reduce Non-Revenue water losses	WS-8	Outcome	Non-revenue water (NRW)	The difference between water supplied and water sold (i.e. volume of water "lost") expressed as a percentage of water supplied.	Percentage		LWSC customers data base	LWSC	Other	Consider DMA as unit of measure	Indicator measures the progress made toward reducing NRW
		Outcome	Metering ratio	Total number of connections with operating meter/ total number of connections, expressed in percentage	Percentage		LWSC customers data base	LWSC	Annual		This Indicator is a proxy in measuring the progress made toward reducing NRW
		Outcome	Reduction in property damage due to flooding	Amount of property damaged to households and business caused by flooding per month during the rainy season	US Dollars		Household and business surveillance	CDC	Other		Indicator tracks the economic impact of flooding

Decreased Impact of flooding		Outcome	Reductions in Travel Time due to decrease in flooding	Amount of time spent travelling from one place to another within Lusaka	Hours		Targeted survey	CDC	Other		Indicator tracks the economic impact of flooding
		Outcome	Frequency of flooding	Percentage of time there is flooding per monthin surveyed houses and business during the rainy season within the floodplain of the drainage activities	Percentage		Household surveillance	CDC	Other		Indicator tracks the economic impact of flooding
Sub-Activity 1: Core Water Network Rehabilitation											
Reduce Non-Revenue water losses		Output	Number of people trained in Non-revenue water	The total number of people trained from LWSC in Non-revenue water	Number	Gender	Training logs	NRW consultant /LWSC	Other		Indicator to keep track of people that have been trained in NRW
		Output	Number of meters installed/replaced	Total Number meters installed or replaced in the service area of Lusaka	Number		Engineers Certificate	NRW consultant	Other		This indicator keep tracks of meters installed and replaced
Rehabililation of and expansion of distribution line		Output	Total length of pipes replaced	Total length of old pipes in kilometers to be replaced in project intervention areas	Kilometers		Engineers Certificate	NRW consultant	Other		Tracks the number of pipes replaced which will lead to reduction in NRW
		Output	Total length of new pipes installed	Total length of pipes in kilometers to be installed in project intervention areas	Kilometers		Engineers Certificate	NRW consultant	Other		Tracks the number of pipes installed which will lead to reduction in NRW
Sub-Activity 2: Chelstone Distribution Line Rehabilitation and Expansion											
Distribution line rehabilitation and Expansion		Output	Length of water distribution network constructed	Total pipe length of the distribution network for water supply only. This should include all different sizes of NEW pipes laid. Sewer pipes are not included.	Kilometers		Engineers Certificate	CSE	Quarterly		Indicative measure of strengthened water supply system by the utility company
		Output	Length of transmission lines constructed/ rehabilitated	Total length of transmission lines constructed and rehabilitated	Kilometers		Engineers Certificate	CSE	Quarterly		Indicative measure of strengthened water supply system by the utility company
Strengthened water supply system	WS-7	Output	Water points constructed	The number of non-networked, stand-alone water supply systems constructed, such as: protected dug wells, tube-wells / boreholes, protected natural springs and rainwater harvesting / catchment systems.	Number	Urban/Rural	Engineers Certificate	CSE	Other		This indicator tracks the number of boreholes contructed by the project
Sub-Activity 3: Chelstone and Kaunda Square Sewer sheds Rehabilitation and Expansion											

Strengthened Sanitation Infrastructure		Output	Total Length of sewerage network constructed	Total length of the sewerage network constructed or rehabilitated including service network and interceptor	Kilometers		Engineers Certificate	CSE	Quarterly		These indicators keep track of the new sanitation infrastructure constructed
		Output	Total length of interceptors constructed	Total length of interceptors constructed (main sewer pipes which carry sewer from sewer main or network to ponds by gravity)	Kilometers		Signed contracts	CSE	Other		
		Output	Length of force mains constructed	Total length of forced sewer mains constructed (main sewer pipes which carry sewer from smaller pipes or network to sewer interceptors)	Kilometers		Signed contracts	CSE	Other		
		Output	Number of connections (sewerage)	Total number of households that have connected to the sewerage network	Number	Female-headed household / Male-headed household	Engineers Certificate	CSE	Other		Indicator tracks new customers added to the sewer network in Mtendere
Sub-Activity 4: Central Distribution Line Rehabilitation and Expansion											
Improved water service coverage		Output	Number of kiosks constructed	These are NEW kiosks that have been constructed using MCA-Zambia funds. Construction should have been completed in order to be counted.	Number		Engineers Certificate	CSE	Quarterly		This indicator measures the number of water points contructed
		Output	Number of connections	Total number of NEW water supply connections in the project area. These are household connections and do not include Kiosk connections	Number		EDAMS	LWSC	Semi-Annual		This is necessary to measure the progress in terms of households connections to the water network

Sub-Activity 5: Bombay drain Improvements											
Strengthened drainage infrastructure		Output	Length of drains constructed / rehabilitated	This indicator measures the total length of drains that have been constructed or rehabilitated using Compact funds	Kilometers		Engineers Certificate/Tender documents	CSE	Other		This tracks the progress made on the completion of the drainage infrastructure
		Output	Length of drains fenced	Total length of the drainage that will be fenced off to prevent access by public	Kilometers		Engineers Certificate/Design reports	CSE	Other		
		Output	Length of drains covered	Total length of the drainage that will be covered with concrete	Kilometers		Engineers Certificate/Design reports	CSE	Other		
		Output	Number of crossings constructed	Total number of crossings over the drainage both for pedestrians and vehicles	Number		Engineers Certificate/Design reports	CSE	Other		
Infrastructure Activity Process Milestones											
Process achieved	WS-3	Process	Value of signed water and sanitation construction contracts	The value of all signed construction contracts for reconstruction, rehabilitation, or upgrading of water and sanitation works using compact funds.	US Dollars		Signed Contracts	MCA-Z Procurement	Quarterly	If the value of a contract changes, the total contract value should be reported in the quarter that the change occurred. Non-Compact funding with government or other donors should not be included. .The value of water and sanitation contracts includes drainage as well. disaggregation by sub-project (water supply, sanitation and drainage)	The indicator measures the value of infrastructure contracts signed
	WS-4	Process	Percent disbursed of water and sanitation 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		Signed Contracts	MCA-Z Procurement	Quarterly	The value of water and sanitation contracts includes drainage as well.	The indicator measures the percentage disbursed out of the total signed infrastructure contracts

	WS 4.1	Process	Value disbursed of water and sanitation contracts	The amount disbursed of all signed construction contracts for reconstruction, rehabilitation, or upgrading of water and sanitation works using compact funds	US Dollars		Disbursement contract tracker	MCA-Z	Quarterly	The value of water and sanitation contracts includes drainage as well.	The indicator measures the amount disbursed out of the total signed infrastructure contracts and is an input to WS 4
	WS 1	Process	Value of signed water and sanitation feasibility and design contracts	The value of all signed feasibility, design, and environmental contracts, including resettlement action plans, for water and sanitation investments using 609(g) and compact funds	US Dollars		Signed Contracts	MCA-Z Procurement	Quarterly	The value of water and sanitation contracts includes drainage as well.	
	WS 2	Process	Percent disbursed of signed water and sanitation feasibility and design contracts	The total amount of all signed feasibility, design, and environmental contracts, including resettlement action plans, for water and sanitation investments disbursed divided by the total value of all signed contracts	Percentage		Disbursement contract tracker	MCA-Z	Quarterly	The value of water and sanitation contracts includes drainage as well.	The indicator measures the amount disbursed out of the total signed contracts
Increase temporary employment	WS-5	Process	Temporary employment generated in water and sanitation construction	The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of water or sanitation systems.	Number	Gender	Signed Contracts	CSE	Quarterly	The water and sanitation system includes drainage.	The indicator measures the employment opportunities created by MCA-Zambia `s infrastructure contracts
Activity 2: Institutional Strengthening Activity											
Improved Application of proper hygiene techniques		Outcome	Percentage of people practicing safe hygiene	This indicator measures the percentage of people in the project area who report practising safe hygiene including hand washing and treatment of water	Percentage	Gender	Household Survey	CDC	Other		This is necessary to measure the impact of sanitation marketing and IEC
Improved compliance of effluent parameters by LWSC to ZEMA standards		Outcome	Biological Oxygen Demand (BOD) - mg/l	Amount of biological oxygen demand at the time of testing from ponds	milligram per litre		LWSC/ZEMA Reports	LWSC	Other		Track the progress made by LWSC to ZEMA compliance standards
Improved	WS-10	Outcome	Operating cost coverage	Total annual operational revenues divided by total annual operating costs.	Percentage		ACKPACK Database	LWSC	Annual	This indicator focuses on financial performance of the utility to make a determination if the utility is financially viable and can cover its costs.	Tracks the financial sustainability of the utility and is important for institutional strengthening

Improved financial sustainability at LWSC		Outcome	Collection Efficiency	((Previous assessment debtor value + total revenue for current assessment period - current assessment period period debtor value) / total revenue during the assessment period)) x 100	Percentage		Sustainability Agreement Technical Audit Reports	Sustainability agreement Consultant	Annual	For financial viability, providers must collect all the money as billed for services to at least meet a major part or all of the operating costs	This indicator measures the efficiency of LWSC in collecting its debt. Collection efficiency for all customers and for GRZ should be computed seperately

Improved Application of proper hygiene techniques	WS-6	Output	People trained in hygiene and sanitary best practices	The number of people who have completed training on hygiene and sanitary practices that block the fecal-oral transmission route.	Number	Gender	Training logs	SGA/IEC TA	Quarterly		This indicator tracks the number of people who have received training
Improved quality of service delivery		Output	Number of people trained in Social Inclusion and Gender Mainstreaming	The number of people who have completed training in any relevant area on SGA such as gender mainstreaming and social inclusion	Number	Gender	Training logs	SGA/Social and Gender Institutional strengthening TA	Quarterly		This indicator tracks the number of people who have received training
Capacity built to carry out sustainable IEC		Output	The number of households reached with messages on hygiene and sanitary best practices	These will include people reached by the community mobilizers during the door to door campaign	Number	Female-headed household / Male-headed household	Community Mobilization logs	SGA/IEC TA	Quarterly		This will track the number of people reached and will exclusively count the door to door events excluding mass media events
Sub-Activity 1: Support to LWSC											
Improved Asset Management at LWSC		Output	Average number of days taken to fix leakages	Number of days taken to fix leakages by LWSC	Days		LWSC database	LWSC	Quarterly		Proxy for measuring improved maintenance management which is part of asset management
Sub-Activity 2: Support to LCC											
Improved Drainange Management		Output	Drainage Management Master plan in place	Development of a Stormwater Management Master Plan with a 25 year planning horizon	Date		LCC	TA for LCC	Annual		
Sub-Activity 3: Innovation Grant Program for Pro-Poor Service Delivery											
Improved water supply, sanitation access and solid waste management		Output	Number of beneficiary Individuals	Number of beneficiary households to receive improved water or sanitation access from Innovation Grant projects	Number	Female-headed household / Male-headed household	IGPM/Grantee administrative data	IGPM	Annual		Track the number of households thathave benefited from IGP
Increase temporary employment		Output	Number of jobs created	Number of individuals who got employment through Innovation Grant projects	Number	Gender	IGPM/Grantee administrative data	IGPM	Annual		Important to track the number of jobs created by the project

Process achieved		Process	Value of contract agreements signed with grantees	The value of all signed contracts with firms/organizations using Grants funds. If the value of a contract changes, the total contract value should be reported in the quarter that the change occurred. Non-Compact funding with government or other donors should not be included.	US Dollars		Signed Contracts	IGPM	Quarterly		Keep track of all contract values signed with grantees
		Process	Percent of total contract amount disbursed	The total amount of all signed grants disbursed divided by the total value of all grants signed	Percentage		Signed Contracts	IGPM	Quarterly		Tracks the proportion of funds disbursed in relation to the contract amount

Annex II: Table of Baselines and Targets												
Indicator Level	Indicator Name	Unit of Measure	Indicator Classification	Baseline (2013)	Year 1	Year 2	Year 3	Year 4	Year 5	End of Compact Target	ERR linked	Justifcation and Assumptions for Targets
					Jan-2014 - Dec-2014	Jan-2015 - Dec-2015	Jan-2016 - Dec-2016	Jan-2017 - Dec-2017	Jan-2018 - Nov-2018			
Compact wide indicator												
Goal	Average Household income	US Dollars	Level	612	612	633	689	787	883	883	Yes	The baseline and targets are based on the projection from the ERR
Outcome	Time spent gathering water	Hours	Level	717	717	700	634	517	401	401	Yes	Both baseline and targets are based on the ERR
Outcome	Continuity of service	Hours per day	Level	18	18	18	18	20	22	22		Baseline based on data from LWSC
Outcome	Volume of water produced	Cubic meters per day	Level	97,409,240.79	97,409,240.79	97,409,240.79	98,756,090.79	104,143,490.79	104,143,490.79	104,143,490.79		Baseline based on data from LWSC
Outcome	Percentage of business closures due to flooding	Percentage	Level	20%					1%	1%	Yes	Both baseline and targets are based on the ERR
Activity 1: Infrastructure Activity												
Outcome	Access to improved water supply	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Yes	Data will only be available after the CDC baseline survey
Outcome	Access to improved sanitation	Percentage	Level	37	37	40	52	75	80	80	Yes	Both baseline and targets are based on the ERR
Outcome	Residential water consumption	Liters per capita per day	Level	161	161	161	179	200	228	228	Yes	Both baseline and targets are based on the ERR
Outcome	Incidence of diarrhea	Percentage	Level	TBD					TBD	TBD	Yes	Baseline will be completed once the CDC baseline survey is completed
Outcome	Non-revenue water (NRW)	Percentage	Level	48%					25%	25%	Yes	The baseline is based on the Comapct agreement while the targets is based on data from LWSC
Outcome	Metering ratio	Percentage	Level	66%			90%	90%	90%	90%		
Outcome	Reduction in property damage due to flooding	US Dollars	Level	TBD			TBD	TBD	TBD	TBD	Yes	Baseline will be completed once the CDC baseline survey is completed
Outcome	Reductions in Travel Time due to decrease in flooding	Hours	Level	TBD			TBD	TBD	TBD	TBD	Yes	Baseline will be completed once the CDC baseline survey is completed
Outcome	Frequency of flooding	Percentage	Level	TBD			49%	26%	3%	3%		Baseline will be completed once the CDC baseline survey is completed
Sub-Activity 1: Core Water Network Rehabilitation												
Output	Number of people trained in NRW	Number	Cumulative	0	80	80	80	80	80	80		This will be based on training logs
Output	Number of meters installed/replaced	Number	Cumulative	0			39,200	50,400	56,000	56,000		The targets are based on the bidding document and contracts BOQ
Output	Total length of pipes replaced	Kilometers	Cumulative	0			136.5	175.5	195	195		The targets are based on the bidding document and contracts BOQ
Output	Total length of new pipes installed	Kilometers	Cumulative	0			8.49	12.14	12.14	12.14		The targets are based on the bidding document and contracts BOQ
Sub-Activity 2: Chelstone Distribution Line Rehabilitation and Expansion												

Output	Length of water distribution network constructed	Kilometers	Cumulative	0			227.43	308.66	324.9	324.9		The targets are based on the bidding document and contracts BOQ
Output	Length of transmission lines constructed/ rehabilitated	Kilometers	Cumulative	0			43.54	59.09	62.2	62.2		The targets are based on the bidding document and contracts BOQ
Output	Water points constructed	Number	Cumulative	0			6	12	12	12		The targets are based on the bidding document and contracts BOQ
Sub-Activity 3: Chelstone and Kaunda Square Sewer sheds Rehabilitation and Expansion												
Output	Total Length of sewerage network constructed	Kilometers	Cumulative	0			57.4	73.8	82	82		The targets are based on the bidding document and contracts BOQ
Output	Total length of interceptors constructed	Kilometers	Cumulative	0			3.1	3.1	3.1	3.1		The targets are based on the bidding document and contracts BOQ
Output	Length of force mains constructed	Kilometers	Cumulative	0			1.54	2.2	2.2	2.2		The targets are based on the bidding document and contracts BOQ
Output	Number of connections (sewerage)	Number	Cumulative	0			4737	6768	7520	7520		The targets are based on the bidding document and contracts BOQ
Sub-Activity 4: Central Distribution Line Rehabilitation and Expansion												
Output	Number of kiosks constructed	Number	Cumulative	0			15	35	37	37		The targets are based on the bidding document and contracts BOQ
Output	Number of connections	Number	Cumulative	0			14,000	21,000	27,000	27,000		The targets are based on the bidding document and contracts BOQ
Sub-Activity 5: Bombay drain Improvements												
Output	Length of drains constructed/rehabilitated	Kilometers	Cumulative	0			16.50	24.75	27.50	27.50		The targets are based on the bidding document and contracts BOQ
Output	Length of drains fenced	Kilometers	Cumulative	0			6.46	6.46	6.46	6.46		The targets are based on the bidding document and contracts BOQ
Output	Length of drains covered	Kilometers	Cumulative	0			0.75	0.75	0.75	0.75		The targets are based on the bidding document and contracts BOQ
Output	Number of crossings constructed	Number	Cumulative	0			50	65	65	65		The targets are based on the bidding document and contracts BOQ
Infrastructure Activity Process Milestones												
Process	Value of signed water and sanitation construction contracts	US Dollars	Cumulative	0			183,002,480	183,002,480	183,002,480	183,002,480		The targeted amount corresponds with the funds set aside for all Contract packages
Process	Percent disbursed of water and sanitation construction contracts	Percentage	Level	0			42%	93%	100%	100%		If every project is complete all funds must be disbursed by year five. The targets will be based on the contracts disbursment plan which is yet to be finalized.
Process	Value disbursed of water and sanitation contracts	US Dollars	Cumulative	0			76,179,216.37	170,088,702.56	183,002,480	183,002,480		If every project is complete all funds must be disbursed by year five. The targets will be based on the contracts disbursment plan which is yet to be finallized.
Process	Value of signed water and sanitation feasibility and design contracts	US Dollars	Cumulative	0				1,437,124.52	2,874,249.03	2,874,249.03		The indicator tracks only the Detailed Design Engineer Contract which is dependent on contract extension options being exercised by MCA-Zambia and workload that is generated for design reviews

Process	Percent disbursed of signed water and sanitation feasibility and design contracts	Percentage	Level	0				50%	100	100		
Process	Temporary employment generated in water and sanitation construction	Number	Cumulative	0								Targets are not required for this indicator
Activity 2: Institutional Strengthening Activity												

Outcome	Percentage of people practicing safe hygiene	Percentage	Level	TBD	TBD	TBD	TBD	TBD	TBD	TBD		The baseline and targets will be based on the findings from the baseline household survey
Outcome	Biological Oxygen Demand (BOD) - mg/l	milligram per litre	Level	TBD			40	40	40	40		Minimum standard as set by the Enviromental Protection Authority
Outcome	Operating cost coverage	Percentage	Level	1.06	1.06	1.08	1.1	1.12	>1.15	>1.15		Baseline is based on data from LWSC and the Sustainability Agreement
Outcome	Collection Efficiency	Percentage	Level	107.5			100	100	>100	>100		A collection of 100% is desirable but if LWCS collects arrears, this value might exceed 100%. A collection efficiency for GRZ only will be computed seperately in line with Sustainability Agreement protocol
Output	People trained in hygiene and sanitary best practices	Number	Cumulative	0	42	127	211	296	310	310		
Output	Number of people trained in Social Inclusion and Gender Mainstreaming	Number	Cumulative	0	30	90	150	210	210	210		
Output	The number of households reached with messages on hygiene and sanitary best practices	Number	Cumulative	0	0	0	3000	7000	10000	10000		
Sub-Activity 1: Support to LWSC												
Output	Average number of days taken to fix leakages	Days	Level	TBD								No targets required for this indicator
Sub-Activity 2: Support to LCC												
Output	Drainage Management Master plan in place	Date	Level						30th June 2018			At least one stormwater management plan must be in plave at the end of the LCC TA
Sub-Activity 3: Innovation Grant Program for Pro-Poor Service Delivery												
Output	No. of beneficiary individuals	Number	Cumulative	0			4,460	30,000	50,000	50,000		Targets are based on the expected numbers from the grantees
Output	No of jobs created	Number	Cumulative	0								
Process	Value of contract agreements signed with grantees	US Dollars	Cumulative	0	0	1,800,000	6,000,000	6,000,000	6,000,000	6,000,000		This will be based on the total amount to be given to grantees
Process	Percent of total contract amount disbursed	Percentage	Level	0			41%	59%	100%	100%		Basis will be grantees `s disbursment plan

Monitoring and Evaluation
Annex III: Modification Memo

Millennium Challenge Account Zambia

July 2016

MCA-ZAMBIA M&E PLAN MODIFICATIONS

Introduction

The MCA-Zambia M&E Plan was approved in February 2014 by both MCC and the MCA-Zambia Board. The M&E Plan documents key performance indicators that are used to measure results of Compact interventions. This is the first modification of the M&E Plan since 2014. The modification has been triggered by the following factors:

1. Changes in the scope of the project which resulted in a 3% reduction of beneficiary numbers from 1,230,413 to 1,199,962 as a result of updated beneficiary numbers based on 2010 Census and de-scoping of the drainage project
2. The overall ERR reduction of 11% from 16.5% to 14.7% percent which took into account the drainage de-scoping, updated beneficiary numbers based on the 2010 census, and the reduction in the sanitation connection rate from 100 percent to 80 percent.
3. Clarity of institutional strengthening activities including innovation grants program that resulted in the refinement of the project logic. The Project logic was also split to have infrastructure and institutional strengthening logics being separated
4. Changes in the Compact work plan which affected annual targets and how these are spread to end of Compact. This was propagated by delay in Entry into Force (EIF) and commencement of construction activities
5. Procurement of consultants such the Program Manager, Construction Supervision Engineer (CSE) and institutional strengthening consultants which changed the reporting structure and data flow
6. Clarity of the project logic which requires inclusion of new indicators and dropping others

In terms of scope, the modification was fully informed by Section 4.2 of MCC Policy for M&E of Compacts and Thresholds, and MCCs Guidance on Common Indicators. In general the following changes have been made:

- Review of targets in alignment with scope changes
- Review of indicator names and definitions
- Alignment of the M&E plan results framework with compact activities
- Revision of the program logic

As per MCC requirement, the purpose of this memo is to document all the changes that have been made to Compact indicators and targets as well as the narrative sections of the M&E Plan.

Table 1 shows changes to Indicator Documentation Table (Annex 1) and Table 2 are changes related to the Indicators Tracking Tables (Annex 2). Also included are changes in the logic and the text of the M&E Plan.

Table 1: Indicator Modification Template – Indicator Document Table

Row	ERR Linked	Indicator Level	Indicator Name	Definition	Unit of Measure	Modification	Original Assumptions & Rationale	Justification for Change
1	Yes	Goal	Average Household income	Average household income per year based on expenditure patterns	US Dollars	We propose the following changes 1. Remove the income disaggregation and introduce disaggregation by Female-headed household / Male-headed household 2. Substitution of the 'Level' values instead of marginal / incremental values for the targets	Indicator to measure progress toward achievement of MCA-Zambia compact goal	1. This has been removed from the mandatory disaggregation which appears in the ITT while introducing Female-headed household / Male-headed household 2. This is a level indicator
2	Yes	Outcome	Access to improved water supply	The percentage of households in the project area whose main source of drinking water is a private piped connection (into dwelling or yard), public tap/standpipe, borehole or protected well.	Percentage	We propose the following changes; 1. Change the indicator definition from "*The percentage of households in the project area whose main source of drinking water is a private piped connection (into dwelling or yard), public tap/standpipe, borehole or protected well"* to "*The percentage of households in the MCC project area whose main source of drinking water is a private piped connection (into dwelling or yard), public tap/standpipe, tube-well, protected dug well, protected spring or rainwater"*. 2. Introduce disaggregation by Female-headed household / Male-headed household	This indicator tracks the number of households with access to improved water supply in the project area	1. This is a common indicator hence the definition should conform with the MCC guidance on common indicators 2. Not well suited for this project because its only implemented in the peri - urban
3	Yes	Outcome	Access to improved sanitation	% of households who get access to and use an improved sanitation facility such as flush toilet to a piped sewer system	Percentage	We propose the following changes; 1. Change the indicator definition from *"% of households who get access to and use an improved sanitation facility such as flush toilet to a piped sewer system"* to "*The percentage of households in the MCC project area who get access to and use an improved sanitation facility such as flush toilet to a piped sewer system, flush toilet to a septic tank, flush or pour flush toilet to a pit, composting toilet, ventilated improved pit latrine or pit latrine with slab and cover"*. 2. Revise year 5 and EOC Target from 100% to 80%, as indicated in Table 2 3. Introduce disaggregation by Female-headed household / Male-headed household	This tracks progress made toward improved sanitation	1. This is a common indicator hence the definition should conform with the MCC guidance on common indicators

4	Yes	Outcome	Incidence of water borne diseases	Refers to percent of individuals reporting any member as having experienced a water borne disease two weeks prior to the survey. Waterborne diseases are infectious diarrhea, intestinal nematodes and schistosomiasis. Numerator: No. of individuals reporting water-borne diseases Denominator: All individuals in the survey	Percentage	We propose to change the following; 1. Indicator name from *Incidence of water borne diseases* to *Incidence of Diarrhea* 2. Change indicator definition from "*Refers to percent of individuals reporting any member as having experienced a water borne disease two weeks prior to the survey. Waterborne diseases are infectious diarrhea, intestinal nematodes and schistosomiasis. Numerator: No. of individuals reporting water-borne diseases Denominator: All individuals in the survey* to "*The percentage of individuals reported as having diarrhea in the two weeks preceding the survey"*	Proxy for measuring reduction in water - related diseases due to improved water supply	1. This is alignment with the MCC guidance on common indicators
5	Yes	Outcome	Time spent gathering water	Total number of hours households spend gathering water per round trip. This includes waiting time for gathering water	Hours	We propose the following changes; 1. Change the end of project target to match up with year 5 target as indicated in Table 2 2. Change frequency of data collection from Annual to Others 3. Introduce age disaggregation so that we know which age categories are responsible for water collection between children below age 18 and adults aged above 18	Tracks additional time saved through gathering water as water supply improves	End of compact target should be the same as year 5 being the last year of implementation
6		Outcome	Continuity of service	Average hours of service per day for water supply.	Hours per day	We propose the following changes; 1. Units changed from 'Hours' to 'Hours per day' 2. Change disaggregation from 'Location' to the Common Indicator disaggregate (Residential/Institutional commercial Industry). 3. Change of Responsible Party from CDC to LWSC 4. Change primary data source from Household survey to customer database	This tracks the improvements by the utility in water delivery services	1. Changes in the unit of measurement and disaggregating done to agree with the MCC guidelines on common indicators 2. LWSC are better place to provide this data rather than CDC

		Outcome	Volume of water produced	Total volume of treated water produced for the service area	Cubic meters	We propose the following changes; *1.* Change indicator definition from "*Total volume of treated water produced for the service area*" to "*Total volume of water produced in cubic meters per day for the service area, i.e. leaving treatment works operated by the utility and purchased treated water, if any"* 2. Changed Unit of Measure from "Cubic Meters" to "Cubic Meters per day" 3. Drop location disaggregate	The increased capacity by the utility company in terms of increased water production needs to be measured	1. The definition should match with what is in the MCC Common Indicator Guidance . 2. Location not appropriate since it's a common indicator are there is no requirement for any disaggregation
7	Yes	Outcome	Residential water consumption	The average water consumption per household per day.	Liters	We propose the following changes; 1. Change of indicator definition from "*The average water consumption per household per day"* to "*The average water consumption in liters per person per day"* 2. Change unit of measure from liters to Liters per capita per day 3. Match end of compact target with year 5, as indicated in Table 2 4. Remove location disaggregation 5. Add Urban / Rural disaggregation and Female-headed household / Male-headed household 6. Adjust the baseline and target values to align with the new definition as follows; baseline 161, Y1= 161, Y2=161, Y3=179, Y4=200, Y5=228 and EOC=228	This indicator is necessary to help in modelling household water demand	1. This is a common indicator, its definition and unit of measure should match with MCC Common Indicator guidance 2. Year 5 and End of compact target should match 3. Location not appropriate for this project since its only in the peri-urban
8		Process	Value of signed water and sanitation feasibility and design contracts	The value of all signed feasibility, design, and environmental contracts, including resettlement action plans, for water and sanitation investments using 609(g) and compact funds	US Dollars	We propose to introduce this indicator		This will enable us monitor design contracts and will be specifically tied to the Detailed Design (DD) contracts. Other contracts entered into by MCC for RAP, Feasibility and detailed designs will not be tracked.
9		Process	Percent disbursed of signed water and sanitation feasibility and design contracts	The total amount of all signed feasibility, design, and environmental contracts, including resettlement action plans, for water and sanitation investments disbursed divided by the total value of all signed contracts.	US Dollars	We propose to introduce this indicator		This will enable us monitor design contracts and will be specifically tied to the Detailed Design (DD) contracts. Other contracts entered into by MCC for RAP, Feasibility and detailed designs will not be tracked.

		Process	Value of water, sanitation and drainage construction contracts signed	The value of all signed construction, rehabilitation, or upgrading of water supply, sanitation and drainage works using Compact funds. If the value of a contract changes, the total contract value should be reported in the quarter that the change occurred. Non-Compact funding with government or other donors should not be included.	US Dollars	We propose to change the following; *1.* Change the indicator name from *"Value of water, sanitation and drainage construction contracts signed"* to *"Value of signed water and sanitation construction contracts"* *2.* Change indicator definition from "*The value of all signed construction, rehabilitation, or upgrading of water supply, sanitation and drainage works using Compact funds. If the value of a contract changes, the total contract value should be reported in the quarter that the change occurred. Non-Compact funding with government or other donors should not be included"* to *"The value of all signed construction contracts for reconstruction, rehabilitation, or upgrading of water and sanitation works using compact funds"* 3. Target from TBD to 183,002,480 starting from year 3, as indicated in Table 2	The indicator measures the value of infrastructure contracts signed	1. This is alignment with the MCC guidance on common indicator guideline 2. All the contract packages are signed
10		Process	Percent disbursed of water and sanitation construction contracts	The total amount of all signed construction, reconstruction, rehabilitation or upgrading of water supply, sanitation and drainage works disbursed divided by the total value of all signed contracts	Percentage	We propose to change the following; 1. Change the indicator name from *"percent disbursed of water, sanitation and drainage construction contracts*" to ***"****Percent disbursed of water and sanitation construction contracts"* *2.* Change indicator definition from "*The total amount of all signed construction, reconstruction, rehabilitation or upgrading of water supply, sanitation and drainage works disbursed divided by the total value of all signed contracts"* to *"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"* 1. Change the indicator classification from cumulative to level 2. Target from TBD to 42%, 93%, 100% starting in year 3 to year 5, as indicated in Table 2. 3. Unit of measure was changed from US Dollars to percentage.	The indicator measures the percentage disbursed out of the total signed infrastructure contracts	This is alignment with the MCC guidance on common indicator guideline

11		Process	Value disbursed of the water and sanitation contracts	The value disbursed for reconstruction, rehabilitation, or upgrading of water and sanitation works using compact funds.	US Dollars	We propose to introduce this indicator	The indicator measures the amount disbursed out of the total signed infrastructure contracts and is an input to the indicator *Percent disbursed of water and sanitation construction contracts*	This is in alignment with the MCC guidance on common indicator guideline
12		Process	Temporary employment generated in water supply, sanitation and drainage construction	People temporarily employed or contracted by MCA-Zambia contracted construction companies to work on construction, reconstruction, rehabilitation or upgrading of water supply, sanitation and drainage projects. Includes both local and foreign workers. Only individuals and not jobs will be counted	Number	We propose to change the following; *1.* Change the indicator name from "Temporary employment generated in water supply, sanitation and drainage construction" to *"Temporary employment generated in water and sanitation construction"* *2.* Change indicator definition from *"People temporarily employed or contracted by MCA-Zambia contracted construction companies to work on construction, reconstruction, rehabilitation or upgrading of water supply, sanitation and drainage projects. Includes both local and foreign workers. Only individuals and not jobs will be counted" to "The number of people temporarily employed or contracted by MCA-contracted construction companies to work on construction of water or sanitation systems"* 3. Changed indicator level from output to process 4. Responsible party changed from PMC to CSE	The indicator measures the employment opportunities created by MCA-Zambia `s infrastructure contracts	1. This is alignment with the MCC guidance on common indicator guideline 2. The role of the PMC was split between PM and CSE
13		Outcome	Percentage of people practicing safe hygiene		Percentage	We propose to change the definition of this indicators from "Hygiene refers to hand washing, treatment of water" to "This indicator measures the percentage of people in the project area who report practicing safe hygiene including hand washing and treatment of water"		This is to improve the tracking of this indicator using an Evaluation Design developed by CDC
14		Process	No. of households and businesses displaced	Displacement can either be temporal or permanent	Number	We propose to drop these indicators	The indicators measured resettlement activities and was a proxy of clearance of resettlement corridor of impact	We propose to drop these indicators from the M&E Plan as recommended by ESP team. This is because resettlement figures are not directly linked to Compact

		Process	Value of compensation for displaced businesses and households	This is the value of cash compensation for temporal or permanent displacement. It also includes value lost as a result of business closure caused by Compact activities	US Dollars			results as contained in the project logic. Also, the figures are sensitive if displayed in the public domain.
15		Process	Percentage of households with restored livelihood	These are households whose livelihoods is either restored to normal or improved after compact activities	Percentage			
16		Process	Percentage of businesses with restored livelihood	These are businesses whose business is restored to normal or improved performance after compact activities	Percentage			
17	Yes	Outcome	Non-revenue water (NRW)	The difference between water supplied and water sold (i.e. volume of water "lost") expressed as a percentage of net water supplied.	Percentage	We propose the following; 1. Remove the location disaggregation 2. Changed unit of measure from Cubic meters to percentage 3. Added year 5 target of "25%" from TBD	Indicator measures the progress made toward reducing NRW	1. This is a system wide indicator may not be appropriate to be disaggregated at the lowest level 2. The unit of measure should agree with what is in the Common indicators guidance
18		Outcome	Metering ratio	Total number of connections with operating meter/ total number of connections, expressed in percentage	Percentage	We propose the following: 1. To remove the location disaggregation 2. To revise the targets as indicated in Table 2.	This Indicator is a proxy in measuring the progress made toward reducing NRW	Project being implemented only in the peri-urban area
19		Output	Number of people trained in NRW	The total number of people trained from LWSC in NRW	Number	We propose the following; 1. Change the indicator name from "Number of people trained in NRW" to "Number of people trained in Non-revenue water" 2. Change the indicator definition from *"The total number of people trained from LWSC in NRW"* to *"The total number of people trained from LWSC in Non-revenue water"* 3. Remove the location disaggregation 4. Added a gender disaggregation. 5. Changed responsible party from PMC to NRW consultant / LWSC	Indicator to keep track of people that have been trained in NRW	1. Location disaggregation may not be appropriate 2. Being a training indicator gender disaggregate is appropriate 3. The chief data source will be the NRW consultant
20		Output	Number of leaks repaired	Total number of leaks found and repaired by the construction in the project area	Number	We propose to drop this indicator		This indicator is already measured under asset management

		Output	Number of meters installed/replaced	Total Number meters installed or replaced in the service area of Lusaka	Number	We propose the following changes; 1. Change indicator targets from 4600, 16100, 20700, 23000 to (starting in yr3) "39,200, 50,400, 56,000, as indicated in Table 2 2. Removed disaggregation by Location 3. Change responsible party from PMC to NRW Consultant	This indicator keep tracks of meters installed and replaced	1. Targets based on the bidding document and contracts BoQ which were understated in previously 2. Project only implemented in the Peri-urban area 3. The chief data source will be the NRW consultant
21		Output	Total length of pipes replaced	Total length of old pipes in kilometers to be replaced in project intervention areas	Kilometers	We propose the following changes; 1. Remove the location disaggregation 2. Changed responsible party from PMC to NRW Consultant	Tracks the number of pipes replaced which will lead to reduction in NRW	1. Location disaggregation may not be appropriate 2. The chief data source will be the NRW consultant
22		Output	Total length of new pipes installed	Total length of pipes in kilometers to be installed in project intervention areas	Kilometers	We propose the following; 1. remove the location disaggregation 2. Changed responsible party from PMC to NRW Consultant	Tracks the number of pipes installed which will lead to reduction in NRW	1. Location disaggregation may not be appropriate 2. The chief data source will be the NRW consultant
23		Output	Length of water distribution network constructed	Total pipe length of the distribution network for water supply only. This should include all different sizes of NEW pipes laid. Sewer pipes are not included.	Kilometers	We propose the following changes; 1. Remove the location disaggregation 2. Remove the project targets for year 1 up to year 2 and remain with year 3 up to 5 and end of project target 3. Changed responsible party from PMC to CSE	Indicative measure of strengthened water supply system by the utility company	1. Location disaggregation may not be appropriate 2. Network is only commissioned and functional upon completion 3. The chief data source will be the CSE
24		Output	Length of transmission lines constructed/ rehabilitated	Total length of transmission lines constructed and rehabilitated	Kilometers	We propose the following changes; 4. Remove the project targets for year 1 and year 2 and remain with year 3 up to 5 and end of project target, as indicated in Table 2 1. Include the indicator in annex 1	Indicative measure of strengthened water supply system by the utility company	1. The transmission line is only commissioned and functional upon completion 2. The indicator was wrongfully omitted in annex 1
25		Output	Water points constructed	The number of boreholes constructed using project funds	Number	We propose the following changes; 1. Change indicator definition from *"The number of boreholes constructed using project funds" to "The number of non-networked, stand-alone water supply systems constructed, such as: protected dug wells, tube-wells / boreholes, protected natural springs and rainwater harvesting / catchment systems"* 2. Targets were changed from Y3 = 4 / Y4 = 6 / Y5 = 12 to; Y3 = 6, Y4 = 12 and Y5/EOC = 12, as indicated in Table 2.	This indicator tracks the number of boreholes constructed by the project	N/A

		Outcome	Number kiosks functional	The new constructed kiosks being used by the public	Number	We propose to drop this indicator		The indicator is redundant with Number of kiosks constructed.
26		Output	Length of sewerage network constructed	Total length of the sewerage network constructed or rehabilitated including service network and interceptor	Kilometers	We propose the following change; 1. Change the indicator name from *"Length of sewerage network constructed" to "Total Length of sewerage network constructed"* 2. Remove the location disaggregation 3. Changed responsible party from PMC to CSE 4. Remove the project targets for year 1 and year 2, and update targets for years 3 through 5 and end of project target, as indicated in Table 2 5. Correct typo in original plan that had Yr. 5 target as 8.2 rather than 82.0. It is fixed in current draft	These indicators keep track of the new sanitation infrastructure constructed	1. Location disaggregation may not be appropriate 2. Network is only commissioned and functional upon completion 3. Indicator was wrongfully omitted from annex 1
27		Output	Total length of interceptors constructed	Total length of interceptors constructed (main sewer pipes which carry sewer from sewer main or network to ponds by gravity)	Kilometers	We propose the following change; 1. Remove the location disaggregation 2. Remove the project targets for year 1 and year 2 and remain with year 3 up to 5 and end of project target, as indicated in Table 2 3. Update year 5 target from 0 to 3.1, as indicated in Table 2 4. Responsible party changed from PMC to CSE		1. Location disaggregation may not be appropriate 2. Interceptors are only commissioned and functional upon completion 3. Role of the PMC split between PM and CSE
28		Output	Length of force mains constructed	Total length of forced sewer mains constructed (main sewer pipes which carry sewer from smaller pipes or network to sewer interceptors)	Kilometers	We propose the following change; 1. Remove the location disaggregation 2. Remove the project targets for year 1 and year 2 and remain with year 3 up to 5 and end of project target, as indicated in Table 2 3. Correct the Indicator name in annex 1 from "Length of **sewer** mains constructed" to "Length of force mains constructed" 4. Responsible party changed from PMC to CSE		1. Location disaggregation may not be appropriate 2. Interceptors are only commissioned and 1. 1. functional upon completion 3. Role of the PMC split between PM and CSE
29		Output	Number of connections (sewerage)	Total number of households that have connected to the sewerage network	Number	We propose the following changes: 1. Introduce this indicator with its respective targets as indicated in Table 2, based on expected 80% take-up.	Indicator tracks new customers added to the sewer network in Mtendere	The indicator will track the number of households connecting to the sewerage network

						2. Disaggregate the indicator by Female-headed household / Male-headed household		
30		Output	Number of kiosks constructed	These are NEW kiosks that have been constructed using MCA-Zambia funds. Construction should have been completed in order to be counted.	Number	We propose the following changes 1. Disaggregation by Location was dropped 2. Indicator level was changed from process to Output 3. Also, year5/EOC target was changed to 37 (from 38), as indicated in Table 2 4. Responsible party was changed from PMC to CSE	This indicator measures the number of water points constructed	1. Project only implemented in the Peri urban area 2. CSE is the main data source
31		Output	Number of connections	Total number of NEW water supply connections in the project area. These are household connections and do not include Kiosk connections	Number	We propose the following change; 1. Remove the location disaggregation 2. Remove the project targets for year 1 and year 2 and remain with year 3 up to 5 and end of project target, as indicated in Table 2	This is necessary to measure the progress in terms of households connections to the water network	1. Location disaggregation may not be appropriate 2. Connections will only be functional upon completion of the whole network
32	Yes	Outcome	Percentage of business closures due to flooding	Percentage of time surveyed businesses were closed as a result of flooding in the flood plain of the project area per month during the rainy season	Percentage	We propose the following changes; 1. Remove the project targets from year 1 up to year 4, as indicated in Table 2 2. Removed disaggregation by Location 3. Changed unit of measure from “number” to “percentage” 4. Aligned EOC target with Year 5 Target (from “0” to “1%”)	The indicator measure the economic impact of flooding on businesses	1. The only measurable impacts can only be seen upon completion of the CP7,8&10 not immediately 2. The project is implemented in the Peri – urban area
33		Output	Length of kms rehabilitated	This indicator measures the total length of the drains that has been rehabilitated using Compact funds	Kilometers	We propose the following changes; 1. Combined the two indicators 2. Change indicators names to include “*Length of drains constructed / rehabilitated” rather than length of kms rehabilitated*”. 3. Change the indicator definition to *“This indicator measures the total length of drains that have been constructed or rehabilitated using Compact funds”* 4. Reduce the end of project target from 35.02 to 27. 5, as indicated in Table 2 5. Removed Location disaggregation 6. Changed responsible party from PMC to CSE	This tracks the progress made on the completion of the drainage infrastructure	1. The reduction in the end of project target are due to Discopping of Lumumba drain 2. This will show consistent with other indicators involving length. Should just be “Length of drains constructed/ rehabilitated” – Kms is shown as the unit.
34		Output	Length of kms constructed	This indicator measures the total length the drains that has been constructed using Compact funds	Kilometers			
35		Output	Length of drains fenced	Total length of the drainage that will be fenced off to prevent access by public	Kilometers	We propose the following changes;		1. The reduction in the end of project target are due to Discoping of Lumumba drain

						1. Reduction in the end of project target from 7.54 to 6.46 starting in year 3, as indicated in Table 2. 2. Removed disaggregation by Location 3. Change responsible party from PMC to CSE		2. Project only implemented in the peri urban 3. CSE will be the chief data source for this indicator
36		Output	Length of drains covered	Total length of the drainage that will be covered with concrete	Kilometers	We propose the following changes; 1. reduction in the end of project target from 2.62 to 0.75 starting in year 3 2. Removed Location disaggregation 3. Changed responsible party from PMC to CSE		1. The reduction in the end of project target are due to Discoping of Lumumba drain 2. Project only implemented in the peri urban 3. CSE will be the chief data source for this indicator
37		Output	Number of crossings constructed	Total number of crossings over the drainage both for pedestrians and vehicles	Number	We propose the following changes; 1. Reduction in the end of project target from 90 to 65. Removed targets for Yrs. 1-2, and revised targets for Yrs. 3-4, as indicated in Table 2. 2. Also changed indicator level from outcome to output. 3. Removed Location disaggregation 4. Changed responsible party from PMC to CSE		1. The reduction in the end of project target are due to discoping of Lumumba drain 2. This is an output level indicator 3. Project only implemented in the peri urban 4. CSE will be the chief data source for this indicator
38		Outcome	Percentage of people practicing safe hygiene	Hygiene refers to hand washing, treatment of water	Percentage	We propose the following changes; 1. Changed from output to outcome. 2. Changed unit of measure from number to percentage. 3. Removed disaggregations for, Age, Income, and Location.	This is necessary to measure the impact of sanitation marketing and IEC	1. This is an outcome level indicator 2. Percentage is more appropriate
39		Outcome	Biological Oxygen Demand (BOD) - mg/l	Amount of biological oxygen demand at the time of testing from ponds	milligram per litre	We propose the following changes; 1. Change the target from TBD to 40 starting with year 3, as indicated in Table 2 2. Include the indicator in annex 2 3. Changed unit of measure from a blank to "milligram per litre"	Track the progress made by LWSC to ZEMA compliance standards	A BoD of < 40 is the requirement by ZEMA who are environment regulators in Zambia
40		Output	People trained in hygiene and sanitary best practices	The number of people who have completed training on hygiene and sanitary practices that block the fecal-oral transmission route.	Number	We propose the following changes: 1. Reduce the end of project target from 440 to 310, as indicated in Table 2 2. Change all other targets from, 60, 180, 300, 420 to 42, 127, 211, 296, as indicated in Table 2	This indicator tracks the number of people who have received training	The reduction is based on the anticipated activities and scope of the SIGM TA

41		Output	Garbage disposal	Number of days when garbage is collected	Days	We propose to drop this indicator		We are not tracking this indicator because it is not directly linked with the project logic
42		Outcome	Garbage disposal	Percentage of Households with garbage disposal system	Percentage	We propose to drop this indicator		We are not tracking this indicator because it is not directly linked with the project logic
43		Output	No. of people trained in social and gender integration and social inclusion	Training in any relevant area on SGA such as gender mainstreaming and social inclusion	Number	We propose the following changes; *1.* Change Indicator name from *"No. of people trained in social and gender integration and social inclusion" to " Number of people trained in Social Inclusion and Gender Mainstreaming"* 2. The definition was updated to include "The number of people who have completed training." 3. Yr5 target changed from "0" to 210 to align with EOC Target, as indicated in Table 2.	This indicator tracks the number of people who have received training	To align it with the output of the SIGM TA
44		Outcome	% of households unable to pay rentals due increase in value of property	Respondents citing increase in rentals as reason for changing residence	Percentage	We propose to drop this indicator		We are no longer doing the survey to track this indicator
45		Output	Number of People receiving IEC and sanitation marketing training	Trained in any of the IEC activities, which may include hygiene, financial obligations, value of sanitation, landlord/tenant relations, etc.	Number	We propose to drop this indicator		Another indicator has been introduce to track people and households receiving awareness in IEC and sanitation marketing
46		Output	The number of households reached with messages on hygiene and sanitary best practices	These will include people reached by the community mobilizers during the door to door campaign	Number	We propose to introduce this indicator including annual targets as noted in Table 2.	This will track the number of people reached and will exclusively count the door to door events excluding mass media events	This indicator will measure reach at the household level during the door to door IEC campaign
47		Output	Number of media interviews	Exclusive interviews with TV, Radio and print conducted with MCAZ staff	Number	We propose to drop this indicator	This is a PR related indicator	This indicator are not directly linked with the compact logic
48		Output	Number of hard news coverage	Event-based coverage by the media for specific MCC/MCA Zambia activities	Number	We propose to drop this indicator	This indicators tracks the media coverage the project is receiving	This indicator are not directly linked with the compact logic

49		Output	Number of outreach meetings	No. of community outreach meetings focusing on water, sanitation and drainage. Meetings will include road shows, community drama	Number	We propose to drop this indicator	Tracks the number of outreach meetings	This indicator are not directly linked with the compact logic
50		Output	Number of journalists trained	Refers to journalists trained in effective communication of water and sanitation development communication	Number	We propose to drop this indicator	Tracks the number of outreach meetings	This indicator are not directly linked with the compact logic
51		Outcome	Percent of respondents aware about MCA Zambia project	Knowledge of MCA Zambia through various communication channels	Percentage	We propose to drop this indicator	This tracks the MCA Zambia project reach	This indicator are not directly linked with the compact logic
52		Output	No. of people receiving IEC and sanitation marketing training	Trained in any of the IEC activities, which may include hygiene, financial obligations, value of sanitation, landlord/tenant relations etc	Number	We propose to drop this indicator	Training indicator tracking number of people trained in IEC and Sanitation	This is tracked by another indicator " People trained in hygiene and sanitary best practices"
53		Outcome	Operating cost coverage	Total annual operational revenues divided by total annual operating costs.	Percentage	We propose to change the unit of measure changed from US Dollars to Percentage	Tracks the financial sustainability of the utility and is important for institutional strengthening	Percentage is a more appropriate measure
54		Outcome	Collection efficiency	((Previous assessment debtor value + total revenue for current assessment period - current assessment period period debtor value) / total revenue during the assessment period)) x 100	Percentage	We propose to introduce this indicator including annual targets as noted in Table 2.		For financial viability, LWSC must collect all the money as billed for services to at least meet a major part or all of the operating costs. This indicator will assist in measuring billed against collected amounts as a measure of improved financial sustainability of the utility. The effects of pre-paid meters will also be measured using this indicator
55		Output	Average number of days taken to fix leakages	Number of days taken to fix leakages by LWSC	Days	We propose the following changes; 1. To remove the TBD on targets 2. Change unit of measure from "Number" to "Days" 3. Include the indicator in Annex I	Proxy for measuring improved maintenance management which is part of asset management	1. The targets are difficult to set 2. The indicator should be measured in days
56		Process	Number of pipe breaks and leaks reported	Total number of pipe breaks reported per year of water distribution network. These are the pipe breaks reported to LWSC	Number	We propose to drop this indicator		It's no longer necessary to measure this indicator
57		Process	Number of pipe breaks and leaks fixed	Total number of pipe breaks that have been fixed of the water distribution network. These are pipe breaks fixed by LWSC	Number	We propose to drop this indicator		It's no longer necessary to measure this indicator
58		Output	Drainage Management Master plan in place	Development of a Storm water Management Master Plan with a 25 year planning horizon	Date	We propose to introduce this indicator		This will be the major output of the LCC TA

59		Output	No. of beneficiary Households	No. of beneficiaries households to receive improved water or sanitation access from Innovation Grant projects	Number	We propose the following changes: 1. Change indicator name from *"No. of beneficiary Households"* to *"Number of beneficiary individuals"* 2. Change indicator classification from Number to cumulative 3. Change indicator definition from *"No. of beneficiaries to receive improved water or sanitation access from Innovation Grant projects"* to *"Number of beneficiary individuals to receive improved water or sanitation access from Innovation Grant projects"* 4. Removed disaggregation by Location and income 5. Change targets from TBD starting from year 3 to EOP to; 4460, 30,000 and 50,000 6. Change data source from *Household survey* to *IGPM / Grantee administrative data*	Track the number of individuals that have benefited from IGP	1. The indicator will be measured cumulatively 2. Location and income disaggregates not appropriate
60		Output	No of jobs created	Number of individuals who got employment through the IG	Number	We propose the following change; 1. Change indicator name from *"No of jobs created"* to *"Number of jobs created"* 2. Change indicator definition from *"Number of individuals who got employment through the IG"* to *"Number of individuals who received employment through Innovation Grant projects"* 3. Removed location and income disaggregation 4. Change data source from *Household survey* to *IGPM / Grantee administrative data*	Important to track the number of jobs created by the project	1. The indicator will be measured cumulatively 2. Disaggregation by location and income not appropriate
61		Output	Number of proposal received	These are proposals received from the potential grantees to solicit for funding	Number	We propose to drop this indicator		This is not a good output indicator
62		Output	Number of grantees	These the total firms that have been awarded the funding by MCA-Zambia	Number	We propose to drop this indicator		This is not a good output indicator
63		Process	Value of contracts signed with grantees	The value of all signed grant agreements with firms/organizations using Grants funds. If the value of a grant changes, the total grant value should be reported in the quarter that the change occurred. Non-Compact funding with government	US Dollars	We propose to change the following; *1.* We propose to revise the indicator name from *value of contracts signed with grantees* to *"value of grant agreements signed with grantees"* 2. Update project targets from TBDs to; Y2=1,800,000, Y3=6,000,000,	Keep track of all grant agreement values signed with grantees	1. This is similar to other related indictors on contract values 2. This is the expected value of funds to be given to grantees 3. This is a process level indicator

				or other donors should not be included.		Y4=6,000,000, Y5=6,000,000, EOP=6,000,000, as indicated in Table 2 3. Also changed indicator level from Output to Process		
64		Process	Percent of total grant amount disbursed	The total amount of all signed grants disbursed divided by the total value of all grants signed	Percentage	We propose the following changes; **1.** Update project targets from TBD Y3 = 41%, Y4 = 59%, Y5 = 100% EOC Target = 100% 2. Changed indicator level from output to process	Tracks the proportion of funds disbursed in relation to the grant amount	1. By the end of the project all funds are expected to be disbursed to the grantees 2. This is a process level indicator

Annex 2: Indicator Baselines and Targets

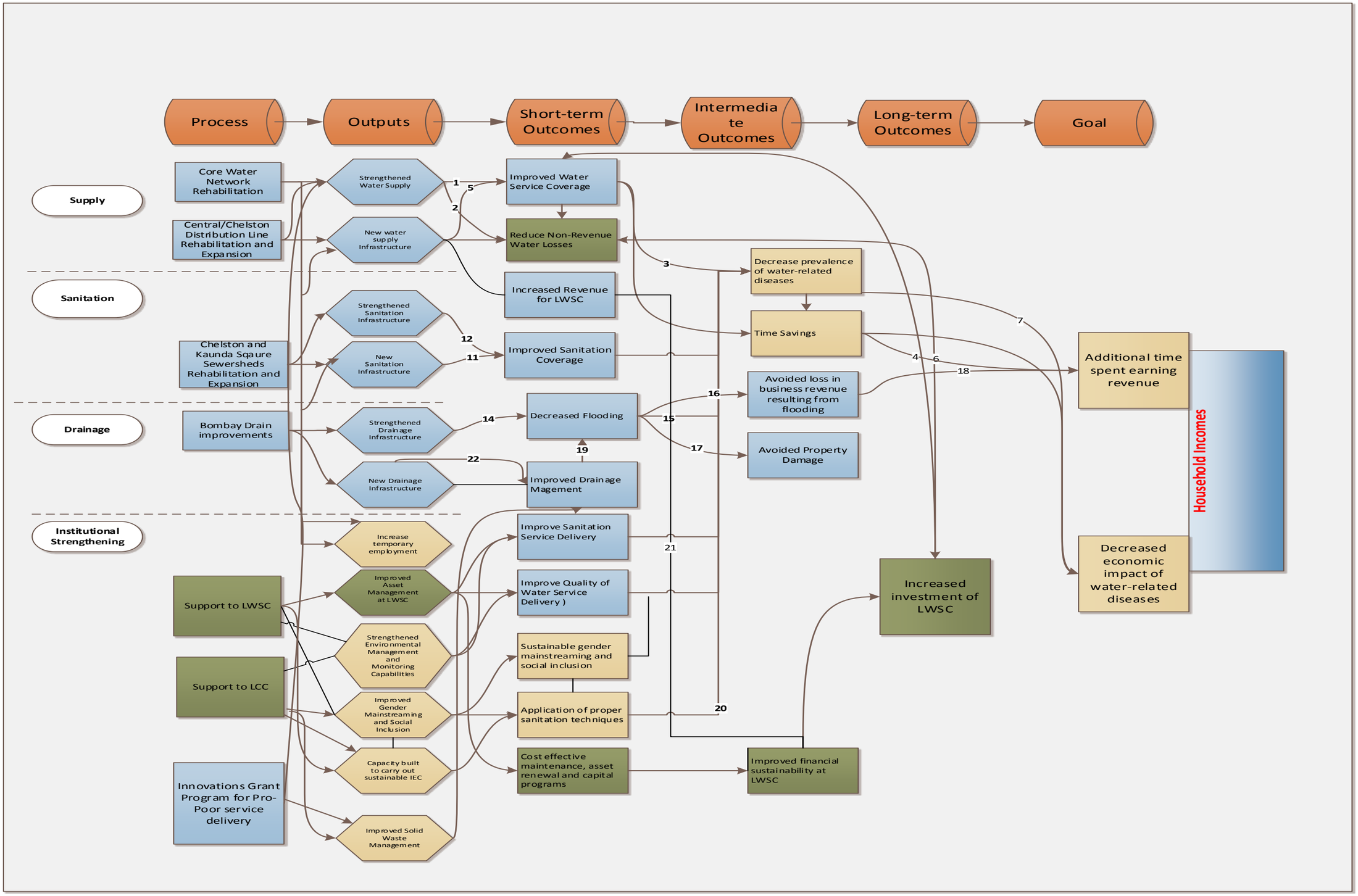
ERR Linked	Indicator Level	Indicator Name	Baseline			2014			2015			2016			2017	
			Old	New	Deviation	Old	New	Deviation	Old	New	Deviation	Old	New	Deviation	Old	New
Yes	Goal	Average Household income	612	612	0.00%	0	612	100.00%	21	633	96.68%	77	689	88.82%	175	787
Yes	Outcome	Access to improved water supply	TBD	TBD	N/A	TBD	TBD	N/A	TBD	TBD	N/A	TBD	TBD	N/A	TBD	TBD
Yes	Outcome	Access to improved sanitation	37	37	0.00%	37	37	0.00%	40	40	0.00%	52	52	0.00%	75	75
Yes	Outcome	Incidence of diarrhea	TBD	16.1	N/A	TBD		N/A	TBD		N/A	TBD		N/A	TBD	
Yes	Outcome	Time spent gathering water	717	717	0.00%	717	717	0.00%	700	700	0.00%	634	634	0.00%	517	517
	Outcome	Continuity of service	18	18	0.00%	18	18	0.00%	18	18	0.00%	18	18	0.00%	20	20
Yes	Outcome	Volume of water produced	97,409,241	97,409,241	-	97,409,241	97,409,241	-	97,409,241	97,409,241	-	98,756,091	98,756,091	-	104,143,491	104,143,491
Yes	Outcome	Residential water consumption	968	161	501%	968	161	501%	968	161	501%	1075	179	501%	1199	200
	Process	Value of signed water and sanitation construction contracts	TBD	-	N/A	TBD		N/A	TBD		N/A	TBD	183,002,480	N/A	TBD	183,002,480
	Process	Percent disbursed of water and sanitation construction contracts	0	0	N/A	TBD	0	N/A	TBD		N/A	TBD	42%	N/A	TBD	93%
	Process	Value disbursed of the water and sanitation contracts	N/A	-	N/A	N/A	-	N/A	N/A		N/A	N/A		N/A	N/A	
	Process	Value of signed water and sanitation feasibility and design contracts														
	Process	Percent disbursed of signed water and sanitation feasibility and design contracts														
	Process	Temporary employment generated in water and sanitation construction	0	0	N/A	TBD		N/A	TBD		N/A	TBD		N/A	TBD	
	Process	Number of Project Affected Persons (PAPs) compensated	0	0	N/A	TBD	0	N/A	TBD	460	N/A	TBD	1008	N/A	TBD	1121

	Process	Value of compensation for displaced PAPs (businesses and households)	0	0	N/A	TBD	0	N/A	TBD	2,700,729	N/A	TBD	5,918,120	N/A	TBD	6,581,560
	Process	Percentage of households with restored livelihood	0	0	N/A	TBD		N/A	TBD		N/A	TBD		N/A	TBD	
	Outcome	Non-revenue water (NRW)	48%	48%	0.00%	TBD		N/A	TBD		N/A	TBD		N/A	TBD	
	Outcome	Metering ratio	66%	66%	0.00%	66%		N/A	72		N/A	90	90	0.00%	97	90
	Output	Number of people trained in NRW	0	0	N/A	80	80	0.00%	80	80	0.00%	80	80	0.00%	80	80
	Output	Number of meters installed/replaced	0	0	N/A	0		N/A	4600		N/A	16100	39,200	58.93%	20700	50,400
	Output	Total length of pipes replaced	0	0	N/A	0		N/A	39		N/A	136.5	136.5	0.00%	175.5	175.5
	Output	Total length of new pipes installed	0	0	N/A	0		N/A	3.64		N/A	8.49	8.49	0.00%	12.14	12.14
	Output	Length of water distribution network constructed	0	0	N/A	0		N/A	97.47		N/A	227.43	227.43	0.00%	308.66	308.66
	Output	Length of transmission lines constructed/ rehabilitated	0	0	N/A	0		N/A	18.66		N/A	43.54	43.54	0.00%	59.09	59.09
	Output	Water points constructed	0	0	N/A	0	0	N/A	2	2	0.00%	4	6	33.33%	6	12
	Output	Total Length of sewerage network constructed	0	0	N/A	0		N/A	16.4		N/A	41	57.4	28.57%	16.4	73.8
	Output	Total length of interceptors constructed	0	0	N/A	0		N/A	3.1		N/A	0	3.1	100.00%	0	3.1
	Output	Length of force mains constructed	0	0	N/A	0		N/A	0.44		N/A	1.54	1.54	0.00%	2.2	2.2
	Output	Number of connections (sewerage)	0	0	N/A	N/A		N/A	N/A		N/A	N/A	4737	N/A	N/A	6768
	Output	Number of kiosks constructed	0	0	N/A	0		N/A	0		N/A	15	15	100.00%	35	35

	Output	Number of connections (Water supply)	0	0	N/A	0		N/A	8000		N/A	14000	14000	0.00%	21000	21000
Yes	Outcome	Percentage of business closures due to flooding	20%	20%	0.00%	20		N/A	19		N/A	15		0.00%	8	
	Output	Length of kms of drains constructed/rehabilitated	0	0	N/A	0		N/A	7.73		N/A	13.64	16.5	17.33%	10.23	24.75
	Output	Length of drains fenced	0	0	N/A	0		N/A	3.77		N/A	3.77	6.46	41.60%	0	6.46
	Output	Length of drains covered	0	0	N/A	0		N/A	TBD		N/A	TBD	0.75	N/A	TBD	0.75
	Output	Number of crossings constructed	0	0	N/A	0		N/A	30		N/A	30	50	40.00%	60	65
	Outcome	Percentage of people practicing safe hygiene	TBD	TBD	N/A	TBD	TBD	N/A	TBD	TBD	N/A	TBD	TBD	N/A	TBD	TBD
	Outcome	Biological Oxygen Demand (BOD) - mg/l	TBD	TBD	N/A	TBD		N/A	TBD		N/A	TBD	40	N/A	TBD	40
	Output	People trained in hygiene and sanitary best practices	0	0	N/A	60	42	-42.86%	180	127	-41.73%	300	211	-42.18%	420	296
	Output	No. of people trained in Social Inclusion and Gender Mainstreaming	0	0	N/A	30	30	0.00%	90	90	0.00%	150	150	0.00%	210	210
	Output	The number of households reached with messages on hygiene and sanitary best practices	N/A	0	N/A	N/A	0	N/A	N/A	0	N/A	N/A	3000	N/A	N/A	7000
	Outcome	Operating cost coverage	1.06	1.06	0.00%	1.06	1.06	0.00%	1.08	1.08	0.00%	1.1	1.1	0.00%	1.12	1.12
	Outcome	Collection efficiency		107.5	N/A						100				>100	
	Output	Average number of days taken to fix leakages	TBD	TBD	N/A	TBD		N/A	TBD		N/A	TBD		N/A	TBD	
	Output	Drainage Management Master plan in place	N/A	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30th June 2018
	Output	No. of beneficiary Households	0	0	N/A	TBD		N/A	TBD	4460	N/A	TBD	30,000	N/A	TBD	50,000
	Output	No of jobs created	0	0	N/A	TBD		N/A	TBD		N/A	TBD		N/A	TBD	

	Process	Value of contract agreements signed with grantees	0	0	N/A	TBD	0	N/A	TBD	1,800,000	N/A	TBD	6,000,000	N/A	TBD	6,000,000
	Process	Percent of total contract amount disbursed	0	0	N/A	TBD		N/A	TBD	41%	N/A	TBD	59%	N/A	TBD	100%

Revised Project Logic



Text revisions of the M&E plan

SN	Type of Revision made	Reason for Revision
1	Addition of Infrastructure sub activity on page 17 of the M&E plan "Central Distribution Line Rehabilitation and Expansion"	There was an omission in the original M&E plan
2	Change of sub activity heading from 'Technical Assistance and Institutional Support' to 'Institutional Strengthening.'	To be consistent with the compact language
3	Change of Wording on the Institutional Strengthening Activity and the first two sub-activity as follows; from components to sub activities and from assistance to support to.	To be consistent with the compact language
4	Change of sub heading on 2.4 from project logics to activity logics	To be consistent with what the section contains
5	Update the quarterly reporting data flow	To be consistent with the current data flow where the role of the PMC is no longer relevant
6	Beneficiary Numbers and ERR	The ERR has been revised from 16.5% to 14.7% percent and takes into account the drainage de-scoping, updated beneficiary numbers based on the 2010 census, and the reduction in the sanitation connection rate from 100 percent to 80 percent. Consequently, this resulted in a reduction in beneficiary numbers from 1,230,413 to 1,199,962. The benefit streams and individual project ERRs have also been removed
7	Gender disaggregation	Update gender disaggregations to reflect changes in the list of indicators as contained in the revised Annex 1 and 2
8	Project Logic	Inclusion of the revised project logic and deleting logics for the sub-projects