Millennium Challenge Account Zambia

Post Compact Monitoring and Evaluation Plan

March 2019

Table of Contents

PREAMBLE

This Post Compact Monitoring and Evaluation ("*M&E*") Plan is part of the action plan set out in the Millennium Challenge Compact (the "*Compact*") signed on May 10, 2012 between the United States of America, acting through the Millennium Challenge Corporation ("*MCC*"), and the Republic of Zambia, acting through its government (the "*Government*"). The Post Compact M&E Plan serves as a guide for monitoring the sustainability of the Compact investments, and is required by the MCC Policy for Monitoring and Evaluation of Compacts and Threshold Programs[1] ("*M&E Policy*"). As stated in the M&E Policy, "MCC and MCA, along with the designated representative for Post Compact M&E if appropriate, will develop a Post Compact M&E Plan designed to observe the sustainability of benefits created under the Compact in conjunction with the Program Closure Plan. This plan should describe ongoing and future monitoring and evaluation activities, identify the individuals and organizations that would undertake these activities, and provide a budget framework for future monitoring and evaluation which draws upon both MCC and country resources, and document the role the partner country will play in results dissemination." "MCA" in the above quoted paragraph refers to MCA-Zambia, the entity designated by the Government pursuant to the Compact to implement the Compact Program.

The Post Compact M&E Plan may be modified or amended based on the agreement between the Government's designated representative and MCC. As spelled out in the MCA-Zambia Program Closure Plan, the designated representative for Post Compact M&E activities is the Economic Management Department in the Ministry of Finance.

[1] https://www.mcc.gov/resources/doc/policy-for-monitoring-and-evaluation

ACRONYM

ASR	Annual Summary Report
CSO	Central Statistics Office
CDC	Centers for Disease Control and Prevention
DQR	Data Quality review
EDAMS	Electronic Data and Management Systems
EMD	Economic Management Department
ERR	Economic Rate of Return
GRZ	Government of Republic of Zambia
IE	Implementing Entity
IEC	Information, Education, Communications
ITT	Indicator Tracking Table
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
MOF	Ministry of Finance
MPR	Mathematical Policy Research
NGO	Non-Governmental Organization
NRW	Non-Revenue Water
PIA	Program Implementation Agreement
SME	Small to Medium Enterprises
WASH	Water, Access, Sanitation and Hygiene

1. OVERVIEW

The Government of the Republic of Zambia (GRZ) is committed to delivering on the promises made to the nation in the Compact signed between the governments of Zambia and the United States in May 2012. As such, measuring and tracking achievements and the impact that the Compact (also referred to as "the Programme") is having on beneficiaries is of great significance, not only during implementation (from November 2013 to November 2018) but also after the 5-year Compact has come to an end as part of MCC requirements. Therefore, this Post Compact M&E Plan picks up on where the final version of the Zambia Compact M&E Plan left off, with modifications to the monitoring indicators, reporting requirements, updates to the evaluation plan, incorporating the findings of Data Quality Review (DQR) and new roles and responsibilities for post-Compact M&E activities.

The Post Compact M&E Plan has been developed by Millennium Challenge Account Zambia (MCA-Zambia) (the Compact's implementing entity) and GRZ's designated representative, the Economic Management Division (EMD)[2] within the Ministry of Finance (MoF), to serve as a tool to plan and manage the process of post-Compact monitoring, evaluating, and reporting progress towards achieving and sustaining Zambia's Compact results. The plan will be managed by MoF's EMD unit and used in conjunction with other reporting and management tools.

The Post Compact M&E Plan serves the following functions:

- Explains in detail what will be (a) Monitored for the various Projects and their Activities and Sub-Activities to determine whether they are/remain on track to achieving their intended results and (b) Evaluated to estimate the impact and determine the cost-effectiveness and sustainability of projects and activities, and the approach of each evaluation.
- Includes all indicators that must be reported to Millennium Challenge Corporation (MCC) and other Compact stakeholders. The Indicator Documentation Table in Annex 1 provides a detailed definition of each indicator, unit of measurement, source of data, responsible entity, and frequency of reporting. Annex 2 identifies indicator baselines and targets
- Serves as a guide for GRZ programme implementation and management post-Compact and a communication tool that allows GRZ and national and international stakeholders to understand the Compact's objectives, the targets the Programme was set to achieve, and progress made towards those objectives and targets.
- Provides data and information to support decisions about post-Compact

[2] In accordance with MCA-Zambia's Board- and MCC-approved Compact Closure Plan, MoF's EMD unit is responsible for ongoing monitoring and evaluation of the Zambia Compact.

programming.

- Discusses post-compact reporting requirements and identifies the individuals and organizations that would undertake monitoring and evaluation activities after compact end date.
- Describes post-compact evaluation activities, and provides a budget framework for post-compact monitoring and evaluation which draws upon both MCC and country resources.
- Documents the role the GRZ will play in results dissemination.
- Provides an example that MoF may draw upon in feeding into the national M&E framework as developed by Ministry of National Development Planning.

The Post Compact M&E Plan is considered a binding document. It may be modified or amended as necessary only with the agreement of both GRZ and MCC.

2. SUMMARY OF PROGRAMME, PROJECTS 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).

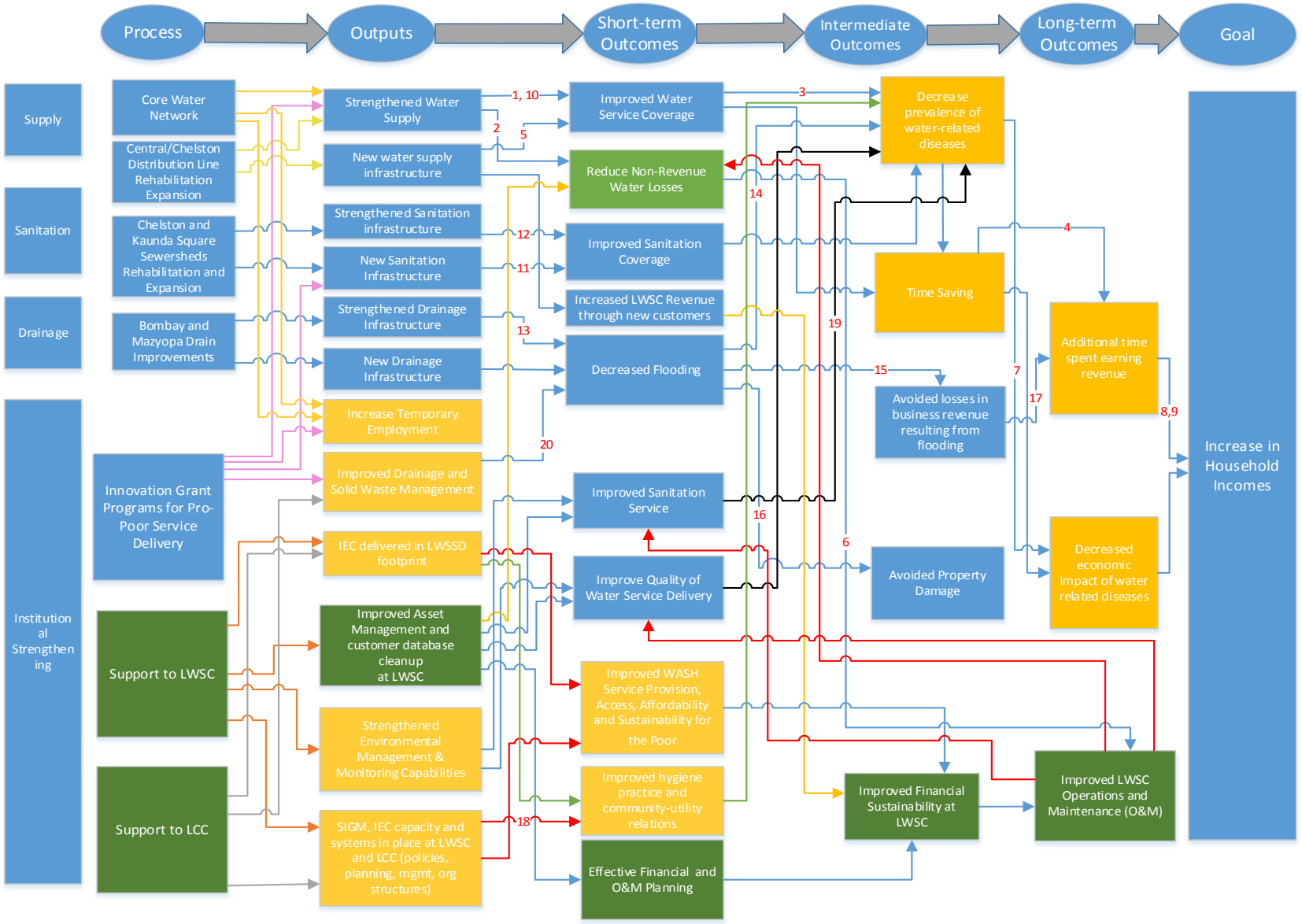
The overall goal of the Compact is to reduce poverty through economic growth in Lusaka by expanding access to, and improve the reliability of, water supply and sanitation, and improving drainage services in select urban and peri-urban areas of the City of Lusaka.

These infrastructure activities, along with Information, Communication and Education (I.EC) 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.

Compact Program Logic[3]



[3] This Program Logic diagram uses color for ease of comprehension. The colors do not signify any meaning.

2.2.1. Explanation of Program 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.

2.2.2 Assumptions embedded in the logic

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 the assumptions explicitly identified early in the programme. 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.

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:

i. The water at point of source is clean (whether household tap or public kiosk)
ii. The water at point of use is clean (meaning effective sanitation practices are used)
iii. 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)
iv. 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.

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

iii. 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:

i. 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.

ii. 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:

i. 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;
ii. 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.

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:

i. Households can afford connection costs;
ii. If the landlord does not connect, tenants gain access in some way;
iii. Rental prices do not increase to the point that the poorer beneficiaries targeted by the Compact from being "priced out";
iv. Tenants are not evicted from houses without due process being followed; and
v. 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: Achieving decrease in flooding due to strengthened drainage infrastructure is dependent upon LCC working on other secondary drains.

Risk: If Government and LCC do not set aside funds to work on other secondary drains, then

the benefit won`t be fully realized.

Risk Monitoring: Development of Drainage Master Plan to be monitored and it should highlight what plans Government/LCC have on the development of secondary drains

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: 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: Improved hygiene practice and community-utility relations will depend upon IEs utilization of strengthened capacities from Technical Assistance

Risk: If IEs such as LWSC and LCC do not implement policies in line with SIGM

and IECs or appoint change champions, then this short term output work be realized.

Risk Monitoring: This will be monitored at institutional level on how IEs incorporate SIGM and IEC into their strategic plans.

19: Decreased prevalence of water related diseases from improved sanitation depends upon:

v. Increase in the uptake of improved sanitation services
vi. Beneficiaries are able to pay for the improved sanitation service

Risk: If Households don`t increase their uptake and afford the services in the long run, then the benefits won`t be realized.

Risk Monitoring: Sewerage connections will be monitored through SCAP office at LWSC beyond CED

20: Decrease in flooding as a result of improved drainage and solid waste management will depend upon the LCC/Solid Waste Management Entity in providing effectives services and also carry out regular cleaning of drains.

Risk: If supply for solid waste management services won`t be created to meet demand, then the decrease of flooding won't be realized as households will continue to through garbage in the drains. Similarly if equipment won`t be made available to LCC for drain maintenance, then this will erode the capacity of the drains.

Risk Monitoring: Monitoring of the creation of the Solid Waste Management Utility and also purchasing of equipment for LCC specifically for drain maintenance.

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.

2.3. The Compact Activities

MCA-Zambia Compact was designed to consist of two activities;

Infrastructure and Institutional Strengthening and multiple sub-activities:

1. Infrastructure Activity (Infra $283.8 million): Interventions for this activity were selected to support the continued future growth of LWSC's ability to better manage Lusaka's water and sanitation sector. As such, a majority of the proposed interventions was focused on rehabilitation of the core water supply network, including those designed specifically to reduce Non-revenue Water (NRW). Additionally this Activity included 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. Additionally, 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 (CP1&2 and CP6): This component included rehabilitation works to the intake/treatment plant at the Iolanda, transmission and distribution centers; strengthening of the water supply network primary distribution backbone for CP1&2; and reduction of unaccounted for water or Non-Revenue Water (NRW) for CP6.

    Contract Package 1&2 was awarded to Denys in December 2015 with a contract value of around $45.953 Million USD. The works done under these contractor packages include rehabilitation of intake structure; rehabilitation of chemical house; rehabilitation of sedimentary tanks, sand filters, pump house and administration building, replacement of pumps; replacement of switch gear all at the Iolanda Treatment plant in Kafue. The aim is to extend the life of the plant by 30 years. Other works completed included rehabilitation of the following water distribution centres; Chawama, Stuart Park East, Stuart Park West, High Court, Mass Media, Lumumba, Waterworks Plant 1, Waterworks Plant 2 and 7C through repair of leaking reservoirs, replacement of pumps, introducing telemetry systems; rehabilitation of buildings and work area; installation of disinfection units among other works.

    CP1&2's objective was to restore the design capacity of the lolanda Water Treatment Plant in Kafue to produce 110 Million Litres/Day or 110,000 Cubic Metres/Day and to create the capacity for Lusaka Water and Sewerage Company (the Utility) to distribute the volumes of water required to meet projected increased demand. This component will substantially be completed by Compact End Date (CED) with minimal works to be completed beyond CED (November 2018 progress as reported by CSE stands at around 92%).

CP1&2 are expected to create 860,000 beneficiaries.

Under CP6, which was initially awarded to Elevo and later to Unik, compact works focused on the rehabilitation of approximately 107km of Lusaka Water and Sewerage Company (LWSC) water supply distribution infrastructure, to replace worn out portions of the network. Fourteen District Metering Areas have being covered at a cost of US$29.9 million, at the end of which physical losses incurred by LWSC through leakages in the network and other losses will be reduced from the current 57% to 25%. This contract is not expected to be completed by CED as only 80.5km out of the targeted 107km have been completed in 14 DMAs with only 10,794 meters installed out of the targeted 56,000. Substantial amount of work are expected to done beyond CED with the revised date of completion set by August 2019. This intervention will result in over 860,000 people in select areas of Lusaka benefitting from the intervention, through improved water supply, quality of water, hours of supply, and greater water pressure.

b. Chelston Distribution Line Rehabilitation and Expansion (CP3 and CP5): This component consisted of extension and rehabilitation of secondary and tertiary networks into the Central and Chelston Branch district metering areas, including the extension of distribution pipes into residential areas to facilitate new household connections, construction of new water kiosks, and rehabilitation of existing kiosks. 317km of distribution network have been completed out of the targeted 325km in Mtendere and Kamanga for CP3 and Kwamwena, Ndeke Vorna valley, Chipata, SOS village and N`gombe for CP5. Boreholes in locations with high quality underwater aquifers, have been drilled to cater for water supply in Kwamwena and Ndeke, while thirty-three closed kiosks, each with two taps have been built in Chipata and Ng'ombe. In addition, a concrete reservoir (800 m3 capacity) in Kwamwena and a 30 meter high elevated concrete reservoir (700 m3 capacity) in Ndeke-Vorna Valley have been constructed. CP5 is expected to be completed by CED while CP3 is going beyond with the revised date of completion set for August 2019.

c. Chelstone and Kaunda Square sewer shed rehabilitation and expansion (CP3 and CP4): This component consisted 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. CP3 is not expected to be completed by CED, though substantial amount of sewer service lines have been done, 71.9km out of the

targeted 82km with all sewer mains constructed (2.2km) and nearly a kilometer of interceptors completed. This has not resulted in the construction of the sewer network and these are the works that will be carried over beyond CED with revised date set to August 2019. The works for CP4, rehabilitation and expansion of Kaunda square waste stabilization ponds was completed and handed over to LWSC and this has increased the carrying capacity from 18,000 to 156,000 households.

d. Bombay and Mazyopa Drain Improvements (CP7&8 and CP10): Under the Drainage component, compact works involved the extension and rehabilitation of the Bombay drainage system in central Lusaka, and rehabilitation of the Mazyopa Drain in Northern Lusaka to accommodate the increased flow from the Bombay Drain. An estimated 188,000 people are expected to benefit in CP7&8 areas; Northmead, Garden, Kabwata site and service, Kabwata, Libala south, Kamwala south, Mandras (Luburma), NIPA, Kamwala residential area, Kamwala business centre and CBD (Intercity, Lamya house, Railway station, Evelyn Hone, ZESCO and Levy park). Additionally, CP10 has resulted in 3,900 beneficiaries from Mazyopa settlement.

   CMC Di Ravenna was engaged in August 2015 to construct and rehabilitate over 21km of the Bombay drain in the city of Lusaka at the cost of $35Million and they are expected to substantially complete before CED and only a small component will be finalized beyond CED (18.7km have been completed out of the targeted 21km). For Mazyopa drain, MCA-Zambia engaged Gabriel A.S Couto at a cost of $17.2million for the 2.6km drain which has been completed and handed over to LCC for regular maintenance.

2. Institutional Strengthening Activity (ISA $26.7 million). In addition to the infrastructure improvements, investments where identified to help support the LWSC and the municipal authority (LCC) which have jurisdiction over infrastructure investments under the LWSSD Project. The Institutional Strengthening Activity (ISA) investments where organized into three sub activities: (a) Support to LWSC;(b) Support to LCC, and (c) Innovation Grants for Pro- Poor Service Delivery. In addition, there where cross-cutting themes such as; (d) Environmental Management, and (e) Social Inclusion and Information, Education, and Communication (IEC).

   MCC's compact investment complemented ongoing and long-standing institutional reform support from the World Bank. ISA was tasked with building

capacity within LWSC and LCC to:

- Institutionalize environmental analysis and monitoring;
- Institutionalize gender mainstreaming and social inclusion and capacity to plan and carry out Information, Education and Communication (IEC) and Sanitation Marketing (SM);
- Develop, implement and manage IEC and SM to support uptake and sustainability of Compact investments;
- Provide capacity for Asset Management for Lusaka Water and Sewerage Company;
- Provide support on non-revenue Water for LWSC;
- Provide support to improve solid waste management and drainage improvements for Lusaka City Council, and
- Provide an innovative grant to demonstrate an innovative approach or technology to improve water use, sanitation and hygiene practices among the poor, strengthen security tenure in community projects and capacity for community based planning; and/or expand opportunities for entrepreneurship and income generating activities related to water, sanitation and drainage.

Longer term outcomes of this activity will include improved financial sustainability of LWSC, operations and maintenance, environmental management and social inclusion of LWSC and LCC, and support of Compact outcomes through the Innovation Grant Program (IGP). The Institutional Strengthening Activity was intended to build the overarching base upon which the Infrastructure Activity can take place. It is argued that the sustainability of the entire LWSSD Project depends on the outcomes of the Institutional Strengthening Activity.

a. Assistance to LWSC: This was focused on strengthening the capacity for LWSC to conduct comprehensive AM planning and execution, environmental management and monitoring, outreach, and pro-poor water-sanitation service delivery. AM Program's assistance to LWSC was a two-phased journey. Whereas phase I was a diagnostic exercise, phase II entirely focused on implementing selected findings from phase I. Phase I centred on the three areas: 1) benchmarked LWSC's AM practices against the ISO standards 2) review of existing AM practices, and; 3) provision of recommendations that improved AM deficiencies at LWSC. Phase II of the assistance to LWSC was delivered through TA, training, knowledge transfer and capacity building via classroom and on-the job training (including team projects and job shadowing activities). Notable achievements of AM TA included; Training of 291 LWSC staff on EDAMS-MMS, development, implementation and integration LWSC AM structure, Strategic Asset Management Plan (SAMP) and system.

b. Assistance to LCC: This focused on strengthening LCC's institutional capacity for maintaining the drainage infrastructure and removal of solid waste, development of a drainage investment master plan and strategic plan and support the establishment of an inter-institutional coordination mechanisms. The drainage master plan intended to guide the management of floods as well.

The objective was to raise the capacity of LCC to effectively and efficiently manage the current and future drainage infrastructure; as well as instituting best business practices, structures and framework to enable LCC to sustainably manage storm water within the city of Lusaka. This TA took a two-phased journey as well, with consultancy exercise implemented during phase I, while phase II was characterized by TA and capacity building activities. Major recommendations included: 1) establishing a new independent utility to manage Solid Waste in Lusaka and this has since been created and awaiting Parliamentary approval to be operational 2) drainage maintenance to remain under LCC with a new dedicated unit created within LCC structure, primarily focusing on maintenance of drainage infrastructure and Compact funds have been used to capacitate this unit with new equipment.

Other notable achievement of this TA included the development of Storm Water Master (SWM) plan that embedded a 25-year planning horizon with a 3-year investment plan attached to it. The objective of the storm water master plan is to address the major challenges related with flooding risks as identified through surveys, interviews, document reviews and stakeholders' engagement, as well as efforts made in the regional benchmarking exercise.

c. Innovation Grant for Pro-Poor Services Delivery (IGP): The IGP initiative financed innovative opportunities and partnerships in the water, sanitation, hygiene, and SWM sub-sectors to complement Compact's infrastructure and technical assistance investments, increasing access of the poor to services while increasing private sector participation in the Compact and created new job opportunities for Zambians. The targeted beneficiaries of the programme included the Zambian and non-Zambian private sector firms, NGOs, Community-Based Organizations (CBO), Faith-Based Organizations (FBO), universities, research institutions, and foundations. IGP program resulted in the creating of 908 jobs (36% females) and 45,105 beneficiaries (60%). The total grant envelope was set at U$6.25 million. Amounts set for the small grants ranged from the minimum of US$30,000 to a maximum of US$100,000 and between US$100,001 and US$2 million for the large grants. Beneficiary institutions that focused on sanitation includes; Afya Mzuri, Peoples Process on

Housing and Poverty in Zambia (PPHPZ) and Water and Sanitation Association of Zambia (WASAZA) whose operations covers selected peri-urban areas of Lusaka; Mtendere, Mandevu, Marapodi, N`gombe and Chipata. Water supply was only implemented by MECB Consulting in Jack compound while the majority of the institutions (Alliance for Sustainable Development, G.P & J Management Services, Keepers Zambia Foundation, L&N Matrix Limited and New Tech Recycling) focused in the area of solid waste management whose operational areas covers most part of Lusaka such as; Chawama, Ng`ombe, Matero, Kamwala, George/Lilanda, Mtendere, Kalikiliki, Kalale, Chunga, Chibolya, Gargen, Chipata, Kalingalinga, Kaunda Square, N`gombe, Industrial area and Central Business District.

d. Environmental Management (cross-cutting): This component has strengthened LWSC's environmental management and monitoring capabilities, specifically as they relate to monitoring effluents from sewer ponds and water quality. Through this TA, the compact capacitated LWSC with an Inductive Coupled Plasma (ICP) Spectrometer which will enable them effectively and efficiently measure heavy metals and other relevant parameters as required by Zambia Environmental Management Agency (ZEMA). This TA has further enabled LWSC comply with ZEMA standards and adhere to all the LWSC effluent discharge licence conditions in that there will be effective monitoring for improved performance

   Additionally the TA delivered capacity building and trainings 10 LWSC staff in the use ICP machine. To effectively manage analytical data and link operations of the three LWSC laboratories namely; Manchinchi, Iolanda and Libala water works, MCA-Zambia procured Laboratory Information Management System (LIMS) software to provide this service. All LWSC personnel trained in the use of ICP were also trained in the application of this software.

e. Social Inclusion and Gender Mainstreaming (SIGM), Information, Education & Communication (IEC), and Sanitation Marketing (SM) (cross-cutting): The central objective of this Technical Assistance (TA) to both LCC and LWSC was to improve Service provision, Access, Affordability, and Sustainability (SAAS) for poor and disadvantaged populations of peri-urban Lusaka. The SIGM, IEC, and SM related activities emerged from the Institutional Strengthening Needs Assessment that looked at the strengths and weaknesses of the social inclusion, gender mainstreaming, IEC and Sanitation marketing frameworks and practices within the LWSC and LCC. The TA activities

intended to 1) institutionalize Social Inclusion and Gender Mainstreaming (SIGM) throughout LCC and LWSC policies, management and organizational systems and improved service delivery to the poor and vulnerable populations. This included strengthening the capacity of the IEs to include the poor (women and men) in approaches associated with the maintenance of the drains and SWM in a manner that is responsive to the conditions that contribute to degrading the drainage infrastructure 2) strengthen the capacity of the IEs to identify IEC needs for water and sanitation, SWM and drainage, and develop and manage IEC systems that promote behavioral change, uptake of services and care of physical assets in low-income peri urban areas 3) implement IEC and SM related activities to CPs 2, 3, 5, 6, 7, 8 and 10 to ensure uptake of Program investments, and promote good hygiene practices[i] 4) monitor and evaluate the efficacy of the implemented IEC and SM activities. The TA was also tasked to support the LWSC in the implementation of the Sanitation Connection Action Plan (SCAP) by working with relevant structures through which the SCAP is being implemented to ensure that all social inclusion and gender related components of the SCAP are integrated in the SCAP implementation process.

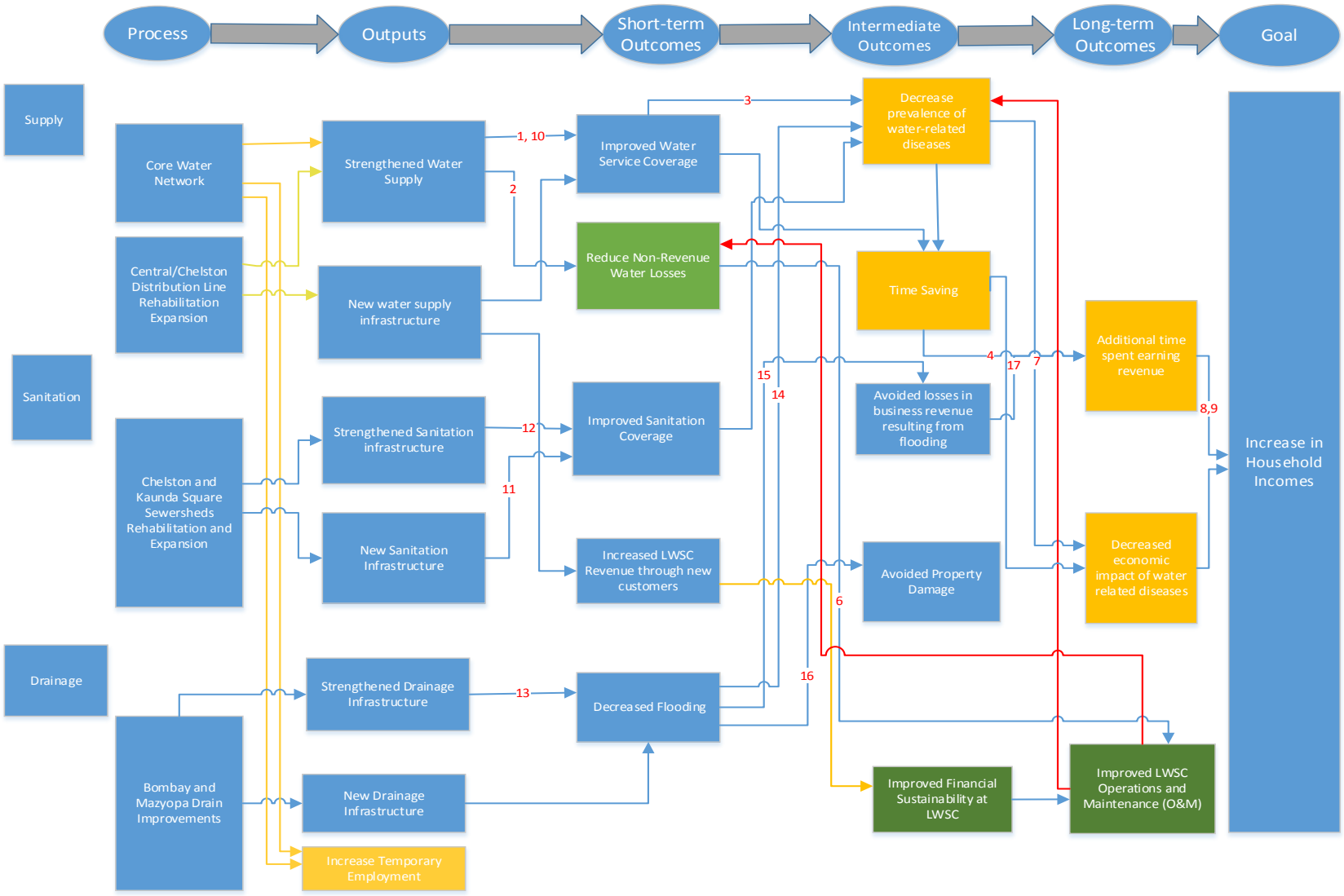
The activities were delivered through TA, advocacy, facilitations, pilots, and capacity building initiatives. The TA for SIGM and IEC/SM followed a four-phased approach by 1) creating an enabling environment for SIGM and IEC/SM, 2) integrating SIGM and IEC/SM structures into the existing structures of the two institutions 3) strengthening the current policy and strategic framework for SIGM and IEC/SM and 4) piloting a management system for SIGM and IEC/SM, including the development of specific policies, strategies, guidelines and other tools for supporting sustainability of TA initiatives. All these were aimed at institutionalizing SIGM, IEC and SM in LWSC and LCC where organizational structures, roles and responsibilities were established for sustaining initiatives.

Apart from the capacity that has been developed within LWSC and LCC regarding uptake of the importance of social inclusion, gender mainstreaming, IEC and SM the following deliverables were developed as tool for continued implementation; advocacy brief, Customer and Community Engagement Guidelines, Social and Gender Policies, Peri-Urban policy, SIGM and IEC Systems Manuals and Flexible Payment Mechanisms Guidelines. Others are SIGM Organizational Structure Brief, MOU between LWSC and LCC on Coordination in Peri-Urban areas and SIGM and IEC Implementation Strategy.

2.4. Activity Logics

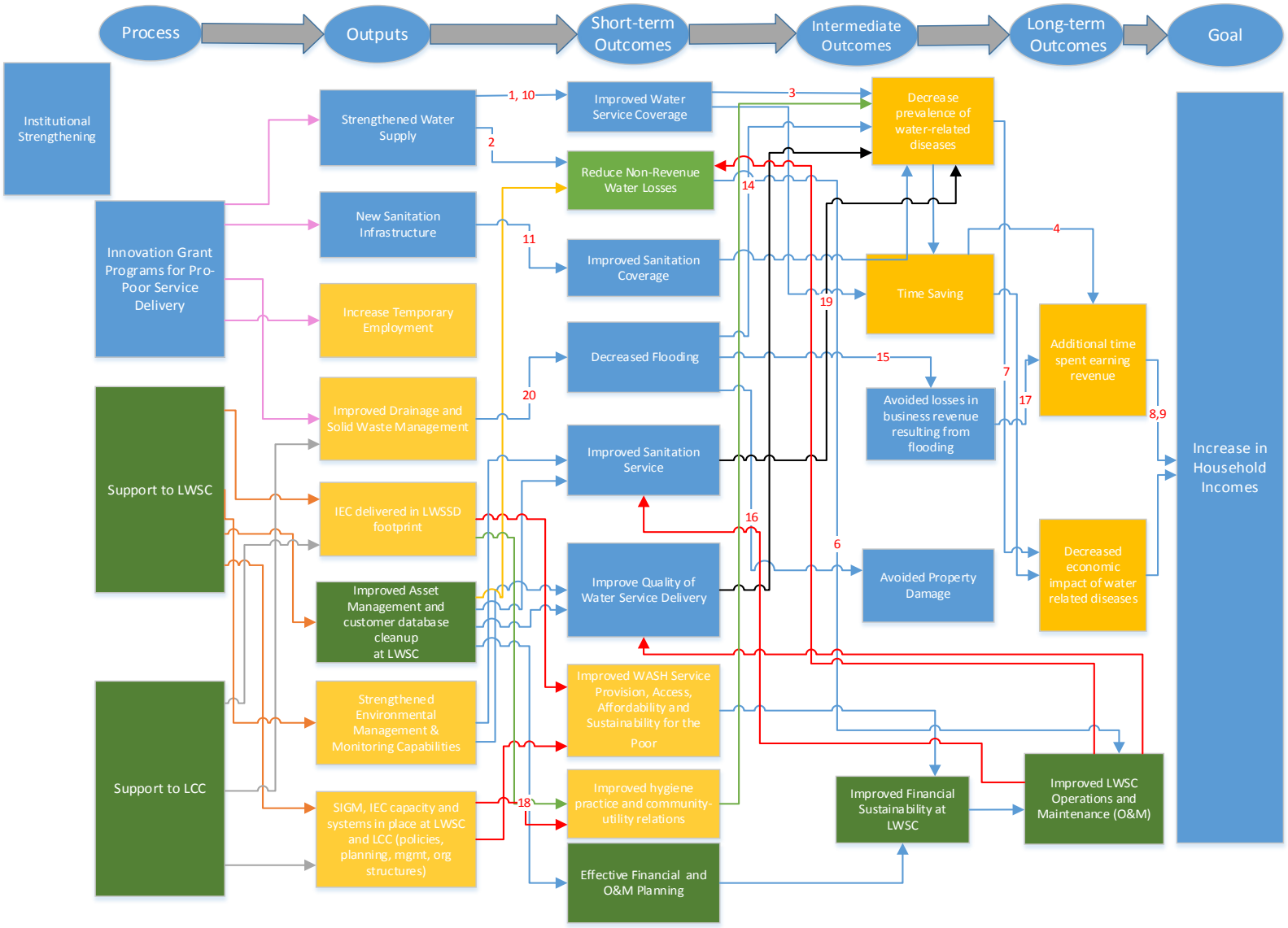
The pathways to measure outcomes and impact of Compact activities was delineated into two logic models, Infrastructure Activity and Institutional Strengthening Activity. These logics show how using MCC investment, project outputs, outcomes and impact will be attained. These logics are shown below:

Infrastructure Activity:



*This logic diagram uses colors for ease of comprehension. The colors do not signify any additional meaning.

Institutional Strengthening



*This logic diagram uses colors for ease of comprehension. The colors do not signify any additional meaning.

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[4]. 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, sanitation and drainage project is estimated 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%.

The benefit streams supporting the investment are health, time savings, non-revenue water, local labor, avoided property damage and avoided loss in value added. The entire ERR calculation is available on MCC's website.

2.5.2. Beneficiaries

Of the beneficiaries noted above, 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.

3. MONITORING COMPONENT

3.1. Summary of Monitoring Strategy

The Post Compact performance will be monitored systematically and progress will be reported regularly through a small set of indicators listed in the indicator tracking table (ITT) and broader updates in the Annual Summary Report (ASR). The analysis will allow the Government of Zambia and MCC to track the sustainability of Compact investments. MCC M&E worked with MCA-Zambia along with the MCC sector experts to select the Post Compact indicators. All indicators were included at the request of a sector expert at MCC to ensure that there was an audience for the Post Compact reports.

All MCC M&E plans are framed and constructed using the program logic framework

[4] https://www.mcc.gov/where-we-work/err/zambia-compact

approach that classifies indicators as process, output, outcome, and goal indicators. This Post Compact M&E Plan only includes indicators at two levels output and outcome as the other two levels are no longer relevant.

- **Outcome** indicators measure intermediate, medium, or long-term effects of an intervention, including the Compact Objectives.
- **Output** indicators measure the direct result of the project activities—most commonly these are goods or services produced by the implementation of an activity.[5] The output indicators presented in the table track the performance of the on-going progress of interventions that were begun under the Compact, but that are continuing into the Post Compact period.

The Indicator Documentation Table provides relevant details for each indicator by Project and can be found in Annex I. It provides descriptions for the indicator structure by specifying each indicator's: (i) title; (ii) definition; (iii) unit of measurement; (iv) level of disaggregation; (v) data source; (vi) method of collection; (vii) the frequency of reporting; and (viii) party or parties responsible. The definition of the outcome indicators were developed in close coordination between the M&E Units of MCC and MCA-Zambia and are derived from Compact documents, the economic analysis, the baseline survey, participatory exercises with stakeholders' participation, from national strategies and sector papers including the Seventh National Development Plan, and statistics published by the Central Statistical Office. The definitions for Outcome and Output indicators are derived from Compact documents, Implementing Entities and implementers' work plans, and MCC external reporting requirements.

The output indicators presented in the Annex I track the performance of the on-going progress of interventions that were begun under the Compact, but that are continuing into the Post Compact period. Outcome indicators measure the long-term effects of an intervention's outputs. Actuals of some outcome indicators included in the Post Compact M&E Plan come from evaluations.

Final achievement on during-Compact indicators can be found on the websites of MCA-Zambia (for up to one year following Compact closure).

For *post*-Compact, the indicators to be monitored are mostly at the outcome and goal level, including selected output indicators for activities not completed by compact end date but handed over to Government designate (MCA-Zambia Successor Entity) (see Annex I). The indicators were jointly established by MCA-Zambia, Implementing Entities (and, where relevant, others in the sector), and MCC. To promote accountability post-Compact, MoF

[5] The indicator levels are formally defined in MCC`s *Policy for Monitoring and Evaluation of Compacts and Threshold Programs.*

has additionally, in liaison with MCA-Zambia and IEs, set targets where feasible for all the indicators in the Post Compact M&E Plan which were derived from ex-ante economic rate of return analysis, other types of analysis, and project planning documents. The targets reflect the underlying assumptions made in program design about what each activity would likely achieve. MCC will work with the PoC at MoF as well as with IEs to track progress towards the set targets.

3.2. Data Disaggregation

The Indicator Documentation Table (Annex I) identifies which indicators should be disaggregated as feasible and cost-effective, based on gender (individuals), age, and other factors. The select disaggregated features identified in Annex I will be reported to MCC in the Post-Compact ITT. Where feasible, the evaluations will identify additional indicators to be disaggregated by sex, age and/or income and methodologies to assess the impact of the project on women, children, and other vulnerable groups.

3.3. Water and Sanitation Connection Monitoring

Since the Zambia Compact was focused on Water and Sanitation infrastructure, connections in the targeted communities would have not been complete at compact end date. For continuous monitoring, a comprehensive computerized and georeferenced monitoring system has been developed to track progress of SCAP intervention in real time. The LWSC SCAP team and the M&E including IT staff at LWSC Head Office have been trained on the utilization and operation of the monitoring system. The monitoring system is currently operational anticipating connections in Mtendere. LWSC will utilize this monitoring system procured by MCA Zambia to monitor water and sanitation connections beyond the compact period. Due to delayed connections, a refresher training will be conducted before compact end date and the LWSC SCAP team will be equipped with the tablets for the data collection. The software developer has been engaged to determine how the monitoring system can be operated and maintained beyond compact period for three years. LWSC will be required to pay the software developer technical assistance fees for the three years. In the post compact period, the SCAP Coordinator shall assume the role and function of coordinating M&E in conjunction with LWSC M&E under Corporate Planning. This monitoring system will be accessed by stakeholders including MCC, LWSC and GRZ beyond the compact end date to measure progress on connections in Mtendere.

3.4. Indicator Documentation, Baselines and Targets

Detailed information on indicators, including definitions, baseline from early in the compact, timing and frequency of post- Compact reporting, units, level, source, and responsible parties for reporting, has been compiled in Annex 1.

Additional indicators (and their related baselines and/or other documentation) may be added in subsequent versions of the Post Compact M&E Plan.

3.5. Social and Gender Analysis

Where appropriate, indicators have been 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.

3.6. Data Quality Reviews (DQRs)

As part of M&E Plan management, MCA-Zambia engaged an external firm, CRISIL Infrastructural Advisory firm from India, to conduct Data Quality Review (DQR) in 2016. The purpose of the DQR was to; conduct review of performance indicators in the Compact's M&E Plan, identify data quality issues impacting the entities who were part of the reporting framework and to provide detailed recommendations for improvement of data quality to inform M&E Plan revision. The major findings of this exercise are follows:

i. Lack of written guidelines to guide indicator reporting for most indicators at LWSC such Non-Revenue Water (NRW), Volume of water produced, collection efficiency, operating cost coverage and metering ratio;
ii. Recording and reporting of indicators such as NRW and water production suffers from multiple issues related to meters, data capture and performance reporting processes, rendering it highly unreliable;
iii. Lack of stronger data validation practices in the reporting framework; and
iv. Definitions of selected indicators were not robust enough.

To address this data quality deficiency, MCA-Zambia conducted Capacity Building at LWSC and across all the grantees under IGP. Through this exercise, M&E trainings was provided to LWSC senior management, middle management, corporate planning and M&E staffs. An M&E manual documented all the estimation and standard procedures for all key performance indicators at LWSC was developed and is currently being utilized by LWSC. Findings and recommendation of DQR process were also incorporated in the final revision of MCA-Zambia M&E Plan which was used as an input in the development of this plan.

As a follow up to DQR, MCA-Zambia in the final year of compact implementation conducted Data Quality Audit (DQA) to evaluate the quality of the data which underpins the M&E plan's indicator tracking table (ITT) and to make recommendations on how to improve the quality of M&E indicators and to ensure the sustainability of data collection systems beyond the Compact. The data quality for certain indicators reported by LWSC was found to be very weak including for indicators such as continuity of service, water production and Non-revenue water. There are relatively minor discrepancies in the water production figures recorded as the information flows through the reporting process. The data quality and reporting of meter ratio, operating cost coverage and collection efficiency is satisfactory. The Data Quality Analysis also found certain strengths and weaknesses with regard to the processes and definitions, data collection, analysis and reporting for the Innovation Grant Program Manager (IGPM), CSE and Cowater. To address this data quality gap, these findings were incorporated in the review of LWSC manual developed during capacity building.

It is hoped that depending in the reporting need post compact, MoF may conduct DQA among the reporting stakeholders to follow up on the implementation of recommendations as identified during the DQR and DQA conducted by MCA-Zambia. This will be necessitated by the need of reporting high quality data to MCC.

3.7. Standard Reporting Requirement

In accordance with MCC's M&E Policy and as laid out in this Post Compact M&E Plan, MoF is responsible for submitting a Post Compact ITT based off the indicators in Annex I and II of this document. Unless otherwise agreed with MCC, MoF will also develop and submit an Annual Summary Report (ASR) to MCC, as per the reporting scheduled noted at the end of the section. This report will be submitted on or before March 31st of each year, starting from 2019 through 2024. MCC specifically, as a key stakeholder, will receive the ASR via an email to the Vice President of the Department of Compact Operations at VPOperations@mcc.gov, with the current MCC M&E Counterpart CCed and the Results Reporting Analyst, with the subject line "Zambia Post-Compact Reporting" and the dates of report coverage.

The post-Compact ITT will have the same format as the Compact ITT only with additional years added to it. MCC will provide the template for reporting by January 31st of each year in which an ASR is due; the template will be developed with MoF EMD input and will be consistent to the extent possible over the years until the end of post-Compact reporting.

The ASR will include the following:

- A summary of any activities undertaken or continued by GRZ post-Compact that relate to the sustainability of Compact investments (including any issues with operations and maintenance of infrastructure) as well as complementary activities undertaken by GRZ or donors.
- A post Compact ITT using the MCC template that include of the indictors included in Annex I of this plan for the preceding calendar year
- Data Quality Review findings related to indicators in the post-Compact M&E Plan.
- Status of outstanding issues for infrastructure components through the end of the defects liability period.

MoF will make public the final version of the ASR, less the ITT, by posting it on MOF's website along with other related reports, particularly on indicators' progress towards targets.

MoF's EMD unit plans to use the progress reported in the ASR and other reports as a basis for other results-reporting and public outreach for accountability and decision-making purposes.

Report	Due Date
Post compact ITT Q1 and Qualitative Forms[6]	31st March 2019
Post compact ITT Q2 and Qualitative Forms	30th June 2019
Post compact ITT Q3 and Qualitative Forms	30th September 2019
Post compact ITT Q4 and Qualitative Forms	31st December 2019
ASR Year 1	31st March 2020
Post compact Annual ITT Year 2 and Qualitative Forms	31st March 2021
ASR Year 2	
Post compact Annual ITT Year 3 and Qualitative Forms	31st March 2022
ASR Year 3	
Post compact Annual ITT Year 4 and Qualitative Forms	31st March 2023
ASR Year 4	
Post compact Annual ITT Year 5 and Qualitative Forms	31st March 2024
ASR Year 5	

4. EVALUATION COMPONENT

While good program monitoring is necessary for program management, it is not sufficient for assessing ultimate results. Therefore, MCC and MCA-Zambia have used different types of evaluations as complementary tools to better understand the effectiveness of the programs. As defined in the MCC M&E Policy, evaluation is the objective, systematic assessment of a program's design, implementation and results. MCC and MCA-Zambia are committed to making the evaluations as rigorous as warranted in order to understand the causal impacts of the program on the expected outcomes and to assess cost effectiveness.

MCC is overseeing three independent evaluations to determine the effect of the Compact on beneficiary populations and institutions, which will continue into the post-compact period. MCA-Zambia oversaw data collection and all in-country management of these evaluations while the compact was active. During the post-compact period, the MoF EMD will provide in-country support for the independent evaluators including convening stakeholders, reviewing key reports, and facilitating results dissemination activities. The results of all evaluations will be made publicly available in accordance with the MCC M&E Policy.

Additionally, MCA-Zambia conducted several special studies to support compact activities. Details of the Independent Evaluations, and the Special Studies are listed below.

[6] See Annex II

4.1 Independent Evaluations (conducted by MCC; ongoing)

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

For each independent evaluation, all relevant stakeholders, including the Government of Zambia, are expected to review and provide feedback to independent evaluators on the evaluation design reports, evaluation materials (including questionnaires), and baseline report (if applicable), and any interim/final reports in order to ensure proposed evaluation activities are feasible, and final evaluation products are technically and factually accurate. The designated representative at the Ministry of Finance is expected to facilitate these presentations and coordinate with local stakeholders, and will be responsible for disseminating the report to the necessary government ministries and entities for their feedback

MCC has contract three independent evaluators: Centers for Disease Control, Mathematica Policy Research and American Institutes for Research. In addition to post compact monitoring, final evaluation results will be published on both MCC and GRZ websites.

Evaluation Name	Evaluation Type	Evaluator	Methodology	Final Report Date
Innovation Grant	Impact and Performance	American Institutes for Research (AIR)	Other (Performance), Difference in Difference Pre-Post	May 2019
Institutional Strengthening	Performance	Mathematica Policy Research (MPR)	Pre-post, Mixed Methods	2022
Water, Sanitation and Drainage Infrastructure	Impact	Center for Disease Control (CDC)	Difference in Difference, Pre-Post, Other (Performance) and Pre-post	2022

4.1.1 Evaluation of Innovation Grant Program

The Innovation Grant evaluation design report by AIR is available here: https://data.mcc.gov/evaluations/index.php/catalog/197 (all finalized reports will also be available here).

This evaluation seeks to provide an innovative grant to community-based organizations, civil society and private sector entities who demonstrate an innovative approach or technology to improve water use, sanitation and hygiene practices among the poor, strengthen security tenure in community projects and capacity for community based planning; and/or expand opportunities for entrepreneurship and income generating activities related to water, sanitation and drainage.

Evaluation Questions

The evaluation will study the following research questions:

1. Did the program achieve its objectives using the implementation model envisioned?
2. Did the IGP adhere to its objectives:
    a. To increase and sustain the access of the poor to quality water and sanitation and improved drainage maintenance through solid waste management?
    b. To enhance the functioning of the water supply, sewerage, and drainage systems?
    c. To demonstrate an innovative approach or technology to improve water use, sanitation, and hygiene practices among the poor?
    d. To identify and provide assistance to innovative partnership arrangements, particularly through private sector engagement?
    e. To provide significant access by women and vulnerable groups to the IGP and its benefits?
    f. To expand opportunities for entrepreneurship and income-generating activities related to water supply, sanitation, and drainage maintenance through solid waste management?
3. Did the grant selection process prioritize interventions based on its key objectives, and was process an efficient and effective way to identify the "best" projects?
4. Is grant oversight sufficient? Is it cost-effective?
5. How can the Innovation Grant Program better mobilize private-sector resources?
6. How can MCC specifically or another organization best replicate this program?

Evaluation Methodology Description

While the performance evaluation of the IGP utilized some quantitative data, the analysis was based largely on qualitative data collected through key informant interviews and small focus group discussions. In addition, interviews and focus groups are ideal instruments to use for planning and evaluating programs because they are open ended and discovery-oriented, which allows an interviewer or facilitator to deeply explore a respondent's feelings and perspectives on a subject. The qualitative data collected through interviews and focus groups were complemented by an analysis of quantitative and secondary source data, including the IGPM's own internal records.

Data Sources

- **Exit survey** of concept note workshop and proposal workshop participants from grant

cycle 2

- **Key informant interviews** (KIIs) with Lusaka City Council (LCC), Lusaka Water and Sewerage Company (LWSC), IGP grantees, and unsuccessful IGP applicants
- **Focus group discussions** (FGDs) with MCA-Z officials, officials from the Innovation Grant Program Manager (IGPM) and the Technical Evaluation Panel (TEP), officials from the IGP Investment Committee, and community beneficiaries
- **Analysis of official program documents** obtained from the IGPM (e.g., TEP reports, the IGP Operations Manual, and grantee progress reports).

4.1.2 Overarching Performance Evaluation of LWSSD Project

This evaluation seeks to assess the LWSSD Project performance in contributing to the Water, Sanitation, and Drainage sector sustainability through its effect on institutions (LWSC and LCC) is being undertaken by Mathematica Policy Research (MPR). MCC is interested in assessing the effectiveness of the LWSSD Project as a whole, with a particular emphasis on the Institutional Strengthening Activity through interventions on the water utility LWSC, and LCC. This Evaluation incorporate data inputs from the two other independent evaluations and minimize redundancy.

Evaluation Questions

1. Where the activities/sub-activities implemented as designed? What were the implementation challenge and success
2. Is there evidence that the interventions have resulted in the outcomes outlined in the program logic?
3. Did the LWSSD project result in a reduction in the implicit subsidies to the water and sanitation sectors by the government? Was the LWSSD project as a whole effective at increasing the operational efficiency and sustainability of LWSC as measured by NRW, collection ratio, and tariff adequacy?
4. How did the use of the Sustainability Agreement, and the Lusaka Water Supply and Sanitation Master Investment Plans by LWSC, MCC, MCA-Zambia, other donors, and the government contribute to additional investments and the overall sustainability of water and sanitation sectors?
5. How successful is LWSC in implementing and maintaining a life-cycle centric approach to asset management?
6. Did the TA to LCC catalyze improved waste management and collection, improved capacity, or long-term sustainability of waste management and drainage operations?
7. To what extent does the IGP as a whole contribute to the project level outcomes and economic benefits regarding water supply, SWM, and sanitation?
8. How were environmental and social considerations incorporated into the LCC's TA contributions to long-term SWM improvements, including sustainability and functionality of drains? How did environmental and social considerations impact effectiveness of LWSC monitoring of water and sanitation services?

9. How effective were Information, Education, and Communication and Sanitation Marketing (IEC/SM) activities during implementation of the infrastructure works in achieving their goals (e.g., connection uptake, maintenance, understanding the water bill and payment management, drainage maintenance, reduction of theft and vandalism, hygiene, health and safety, and local employment)?

10. How did the SIGM and IEC TA contribute to changes in LWSC and LCC policies, structures, planning, staffing, capacities and budgets to 1) provide gender-responsive, appropriate, affordable and sustainable services for the poor and 2) to plan, develop, and manage IEC and SM campaigns that promote behavior change, uptake of services and care of physical assets in low-income peri-urban areas? Do the achieved outputs contribute to project level outcomes and compact objectives?

Evaluation Methodology Description[7]

Guided by the evaluation questions posed by MCC and the augmented theories of change this evaluation was developed in collaboration with the project team, a performance evaluation of the LWSSD project that consists of a qualitative implementation study and an outcome evaluation comprising five mixed-methods studies focused on infrastructure sustainability; financial sustainability; SIGM, IEC, and SM; the combined effects of project activities on beneficiaries; and other investments in the sector will be done. The main goal for the **implementation study** will be to help contextualize the findings of the outcomes evaluation, so we will concentrate on project activities that were expected to lead to better service provision and improved financial sustainability at LWSC, LCC, and the new SWM utility.

To actualize this evaluation, interviews, project documents, and administrative records to document how key sub-activities under both InfrA and ISA were implemented, how implementation was influenced by the context (including the incentives different actors faced and the characteristics of the individuals and institutions involved in the project), how the activities reinforced each other, and the potential for the project's effects to be sustainable.

The second component of the evaluation is an **outcome evaluation** leveraging household survey data from CDC's impact evaluation, primary qualitative data (including observations of infrastructure and maintenance practices), and secondary administrative data sources (including key documents) to explore the effects of project activities on LWSC, LCC, the new SWM utility, and ultimately the households these entities serve. The outcomes evaluation comprises studies on institutional capacities related to infrastructure sustainability; financial sustainability; and SIGM, IEC, and SM plus a beneficiary study at the household level and an investment study of how the LWSSD project influenced priorities and other sources of funding for the sector. The institutional capacity studies will consider whether LWSC, LCC, and the new SWM utility adhere to the best practices recommended and supported through the TA, as well as exploring the ultimate outcomes of interest, including functionality of the

[7] Extract from MPR Evaluation Design Report for LWSSD project

infrastructure; the financial position of LWSC, LCC's drainage unit, and the new SWM utility; and these three organizations' relationship with their low-income customers. At the household level, the beneficiary study will track attitudes and practices related to use of water, sanitation, drainage, and SWM services, but we will not be able to attribute changes to particular aspects of the LWSSD project, since households could be affected by multiple influences (for example, the expansion of the network, improvements in the core network distribution system, and—thanks to the SIGM TA—a better appreciation on LWSC's part of the challenges low-income consumers face). Finally, the investment study will consider how the funding ecosystem for water, sanitation, and drainage in Lusaka has been affected by the LWSSD project—and the creation of the master plans, in particular—and how other sources of funding affect the financial sustainability of the sector.

Data Sources

The evaluation will rely on several data sources for the interim analysis in 2018-2019 and the final analysis in 2021. More details are provided later in this chapter when we discuss each component of the evaluation in detail. At a high level, however, the data sources can be categorized as:

- **Project documents** which we will review in 2018-2019
- **Primary qualitative data** collected by Mathematica in 2018-2019 and 2021
- **Household survey data from the CDC's 2016 baseline and 2019 endline –** a representative household survey in both implementation neighborhoods and control areas
- **Water quality data from the CDC's distribution system monitoring sub-study** collected in 2018-2019
- **Secondary administrative data** compiled quarterly for LWSC's shareholders

The implementation study will mainly rely on the project documents and primary qualitative data whereas the outcome evaluation will use the CDC's household survey and water quality data, the primary qualitative data, and the secondary data from administrative sources data, the primary qualitative data, and the secondary data from administrative sources.

4.1.3 Impact Evaluation of Infrastructure Activity

Infrastructure Activity is being evaluated by the Centers for Disease Control (CDC). This evaluation is designed to measure impacts on water-related diseases and time savings for households and businesses. It comprises of a 12,000 household survey in treatment and control neighborhoods, a traffic study to measure the effects of the drainage sub-activities, and water quality monitoring in households and along the water supply infrastructure. The baseline data collection for the drainage portion is complete, while the other components will be completed within 2017. Baseline reports from all components are expected to be available in early 2018. Aspects of the Infrastructure Activity that are not directly captured

by the CDC evaluation include NRW interventions affecting both the physical and commercial losses.

Evaluation Questions

1. What are the health benefits attributable to each type of Compact activity?
2. What are the current consumption rates of safe versus un-safe water consumption and usage?
3. Do Compact activities lead to an increase in safe water consumption? Are recipients of Information, Education, and Communications (IEC) treatments using effective sanitation habits?
4. How sustainable are sanitation related behavior change?
5. Do households experience an increase in income due to Compact activities?
6. Are households able to afford household connections and water bills?
7. Were subsidy provisions adequate for sanitation connections?
8. What are the current wages and probability of finding work for beneficiaries?
9. What are the time and cost savings/use attributable to each Compact activity?
10. Is there a decrease in the frequency, intensity, and duration of flooding?
11. Is there a decrease in property damage and loss of business due to flooding?
12. Is there a decrease in travel time due to flooding?

Evaluation Methodology Description

The primary quantitative study design is a prospective, cross-sectional intervention-control and pre-post impact evaluation of new water supply and sanitation interventions. We will evaluate the changes in outcome measures between baseline and post-intervention time periods within the intervention areas and compare these measures to any differences observed in the control areas during the same time period. Initial evaluation will consist of reporting pre- and post- proportions of binary indicators and mean change values for continuous variables. Intervention and comparison group differences will be statistically tested using Rao-Scott design adjusted chi square for binary outcomes and design-adjusted linear regression for continuous outcomes. Both design adjusted methods will utilize Taylor series linearization variance estimates, to account for the design effects of cluster sampling. Design effects and intra-cluster correlation coefficients will be reported.

In addition, regression model-based estimates of Difference in Difference (DiD) effects will be conducted on the outcomes of interest. The SEA sampling clusters will be treated as random effects and robust estimates of standard errors will be used. Covariates such as socioeconomic status will be considered. Selection of final statistical models and tests will be determined by the characteristics and distribution of the data.

Data Sources

Baseline Survey	**Project Component Being Evaluated**	**Data Collection Dates**	**Location**	**Surveys Completed**	**Data Collection Firm**
WaSH	Water supply	October	Mtendere	12,512	NORC U. of

Baseline Survey	Project Component Being Evaluated	Data Collection Dates	Location	Surveys Completed	Data Collection Firm
Survey	and sanitation improvements	17th, 2016-October 26th, 2017	East and West, Chipata/SOS, Kamanga, and N`gombe	Households; 4,897 water samples	Chicago/RuralNet Associates
Household Drainage Survey	Drainage improvements	February 1st, 2016-May 6th, 2016	Households along the Bombay drains	3,142 Households	CDC, MCA-Zambia
Business Drainage Survey	Drainage improvements	March 21st, 2016-April 15th, 2016	Kamwala market interior and exterior, business along Bombay drain	587 businesses	CDC, MCA-Zambia
Traffic Drainage Study	Drainage improvements	January 28th, 2016-April 27th, 2016	Traffic intersection points along Bombay drain	93,392 vehicles; 420 total round trips	CDC, MCA-Zambia

4.2 Special Studies (Conducted by MCA-Zambia)

To complement the evaluation portfolio, MCA-Zambia has conducted a number of studies to inform compact implementation vis-à-vis socio-economic profiling, situational analysis and formative. These studies are complete and brief motivation and key findings are described below.

Situation Analysis for Kwamwena, Ndeke/Vorna valley: MCA-Zambia carried out a study in CP5 operational areas; Kwamwena and Ndeke Vorna valley. The purpose of the study was to carry construction status of the houses and also to ascertain the construction status more importantly the number of properties with boreholes. The study also established the household willingness to connect to the water network once constructed.

At the time of the study in 2015, 11,918 properties were listed in both Kwamwena and Ndeke –Vorna valley, with 45% of properties being bare land, 35% and 20% being incomplete and complete housing structures respectively. 17% of properties had boreholes, with the startup cost at K23, 533 while the monthly maintenance cost was around K150. Almost 81% of the households expressed willingness to connect to the water network once it is completed provided the hours of supply will be adequate.

Mtendere socio-economic Census: Socio-economic profile study which took the census approach was conducted in Mtendere, a CP3 intervention area in 2016. The main purpose of the study was; to provide vital information for planning and implementation of Sanitation Connection Action Plan (SCAP) interventions, understand the socio-economic status of Mtendere and create a platform for future monitoring of water and sanitation connection. The study revealed the following;

i. Mtendere has a relatively a large proportion of young household heads ranging between 16years to 97 years with a mean and medium of 39 and 38 years respectively. 74% of the households were male headed with the household size of 5 similar to national average in urban areas.
ii. 97% of the residents were literate and 94% have attended either primary/secondary or tertiary education, hence it is more likely that they will comprehend the consequences of poor sanitation, which in turn should raise the willingness to pay for improved sanitation.
iii. Monthly income was K1, 838 lower than national average urban income of K3,152 (LCMS, 2014). 2% of the income was spend on water while the largest proportion was spend on food/rentals.
iv. Using the international poverty line as a benchmark, the extreme poverty in Mtendere stood at 28%. About 29% of the HHs were moderately poor with the remaining 43% being non-poor.
v. Close to two thirds of households residing in Mtendere are tenants.
vi. 82% of households have access to improved water source, 67% having tap water within their yards. Only 37% were connected to LWSC system while the rest access tap water through either a borehole or water trust.
vii. Generally the ability to pay for water and sanitation services was found to be high using a methodology developed by DANCEE (2002).

SCAP formative research: This research was aimed at assessing the effectiveness and efficiency of Information, Education and Communication (IEC) messaging, sanitation marketing, loan facilities and law enforcement in motivating households to connect to the new sewer network in Mtendere. It is also aimed at making recommendations on how to improve the implementation of SCAP interventions.

SCAP formative research highlighted significant challenges affecting the entire SCAP program including infrastructure delays, confusing messaging and community mistrust due to delayed connections and poor project coordination and management among implementing stakeholders. The study further revealed that, there are also financial barriers being faced by the households to connect to the sewer system. Only 23.7% of properties in Mtendere own a flush toilet – the most expensive component of connecting to the sewer network. The stated willingness to pay (WTP) for a flush toilet is K3, 000, while toilet costs are estimated to be K6,000 or greater. The combination of high construction prices and property owners' low incomes, savings, and WTP make high numbers of additional connections unlikely without financial support.

Henceforth, the study recommended that there is need to ensure that project management facilitates agile response to unexpected challenges, consistent monitoring of interventions, and efficient coordination of stakeholders. A dedicated team in LWSC (SCAP Implementation Unit) should be designated to continue SCAP implementation and funds should be secured from the Government of the Republic of Zambia (GRZ) or other donors to continue SCAP implementation post compact

Jack compound mini-census: The study whose principal focus was to carry out demographic and socio-economic profile of Jack compound, an IGP intervention area was conducted in October 2018. The main purpose was to provide vital and accurate beneficiaries numbers to be included in the close out ERR. The study enumerated 4,796 Households with a total population of 23,836 people (51% female).

5. IMPLEMENTATION AND MANAGEMENT OF POST COMPACT M&E

The EMD unit in MOF, with support and input from MCC, is responsible for the management of the Post Compact M&E Plan. The unit is primarily responsible for coordinating and ensuring quality and accuracy in data collection and reporting on the indicators in this Plan. In addition, the unit provides in-country facilitation of the work of all relevant consultants involved in data quality assessments, survey work, evaluations, and other M&E-related activities. MCC will fund and exercise oversight over evaluations that run into the post- Compact period.

Successful monitoring and evaluation depends on the effective involvement of other MOF staff, other GRZ ministries and agencies providing data for programme monitoring, contractors and other key stakeholders. The EMD unit at MOF will work closely with sector teams to track results and seek input on evaluations and other activities, with its public outreach team to communicate results to key stakeholders, and with relevant government ministries and other stakeholders to support their data collection and reporting efforts and to ensure data quality and accuracy. As part of its overall role as focal point for post compact M&E, the EMD unit will provide technical support to assist these stakeholders in their data collection activities, coach teams as necessary, and issue relevant guidance.

5.1. Responsibilities for Point of Contact

The specific post-Compact responsibilities of MOF's EMD unit – most of which go beyond post-Compact M&E and are specified in the Memorandum of Understanding (MoU) between MCC and MoF include:

- Serve as the primary Government point of contact related to the Compact Monitoring and Evaluation (M&E) activities after Compact close on November 15, 2018;

- Before Compact close on November 15, 2018, collaborate closely with the MCA to

develop a Post-Compact Monitoring and Evaluation Plan. Review and revise the Post Compact M&E Plan as necessary after Compact close.

- As described in the Post-Compact Monitoring & Evaluation Plan, complete the following monitoring and reporting functions:

    - Align post-Compact M&E tasks into the overall set-up for national M&E management, including monitoring databases, reporting systems, surveys and other evaluation data, GIS information, and any other data sources and systems used for the national M&E function;
    - Liaise with Implementing Entities to collect required annual performance data and related documentation for the Lusaka Water Supply Sanitation and Drainage Project and ensure that it is submitted to MCC on time and to appropriate standards of quality, and that they are receiving adequate support to perform their M&E functions;
    - Ensure that data are disaggregated by sex, age and income level, where practicable, and help ensure that gender issues are appropriately incorporated into evaluations as described in the Post-Compact Monitoring & Evaluation Plan;
    - Directly participate in the monitoring of individual Compact components through site visits, review of project reports and primary data, and review of secondary data as described in the Post-Compact Monitoring & Evaluation Plan;
    - If needed, participate in and/or oversee the work of data quality reviewers, assess data quality review results and serve as primary point of contact to implement any recommended changes or corrections, and conduct intermittent data quality checks to provide additional data quality oversight as described in the Post-Compact Monitoring & Evaluation Plan;

- Support the following evaluation, dissemination, coordination, and learning synthesis functions:

    - Conduct synthesis of monitoring and other data to assess Compact effectiveness and whether objectives were met as described in this plan;
    - Conduct technical reviews (and coordinate same by other relevant Government agencies) of all evaluation and survey deliverables, and key project performance deliverables;
    - Facilitate input on evaluation deliverables, and provide official Government responses on evaluations final reports;
    - Facilitate in-country evaluation activities (e.g., writing letters informing Zambian stakeholders of upcoming data collection activities and, where

relevant, encouraging cooperation) and in-country dissemination of evaluation findings;

- Coordinate in-country evaluation results dissemination activities including but not limited to stakeholder workshops and individual meetings.
- Identify opportunities to apply the learning from evaluations to future Government and Compact design and implementation; and
- Liaise with Ministry of Finance and other Government public outreach staff to incorporate Compact results and monitoring data and information into external communication products and to ensure that performance results are communicated to the public (this includes dissemination of evaluation results and facilitation of related in-country presentations and posting reports and public-use data on the Ministry of Finance website

5.2. Responsibilities for MCC

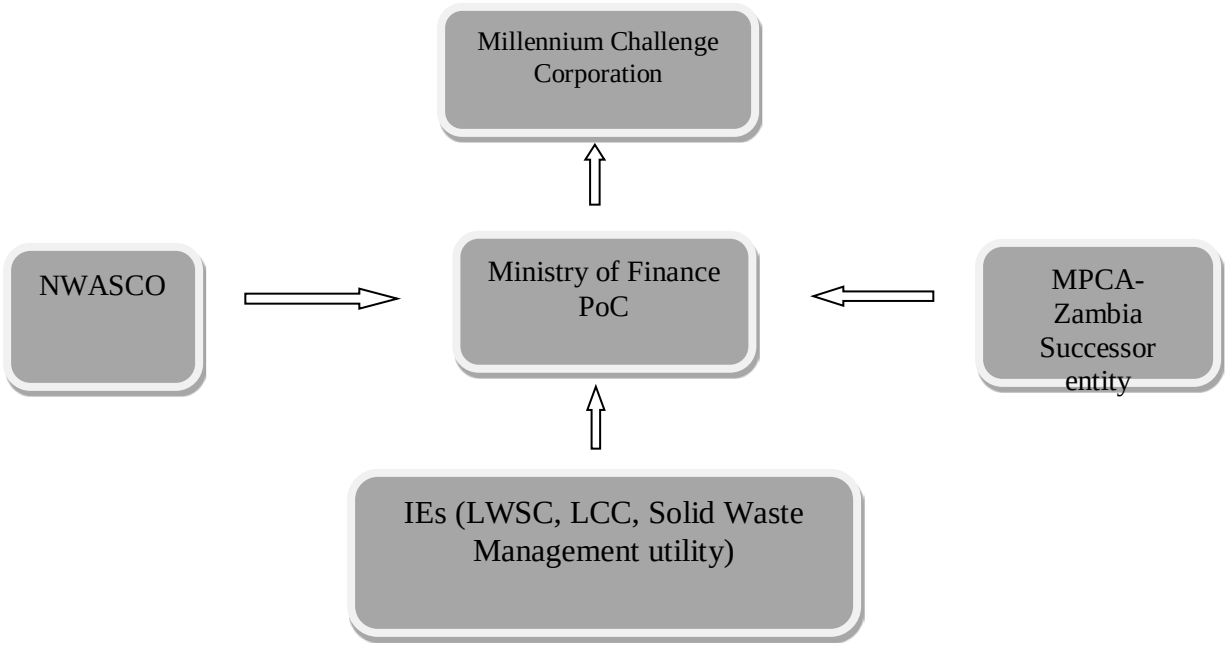
Responsibilities for MCC include:

- Contract and manage independent evaluators and data collectors whose activities extend into the post-Compact period;
- Ensure evaluators conduct stakeholder review of evaluation reports; and
- Provide guidance and training to the country on the detailed requirements for preparing the Annual Summary Report.

5.3. Documents Management

MCA-Zambia hired an archiving firm who is providing archiving services for all documents that have been generated during the implementation of Zambia compact, including M&E documents. The PoC at MoF will have access to these archived documents in case references are needed for the past implementation and/or evaluation documents

5.4. Reporting/Data flow



5.5. Budget

The GRZ-funded component of the budget for post-Compact M&E activities is yet to be developed but will consist of funding for the dissemination of evaluation findings via presentations and other modalities through which Compact results will be reported (e.g., brochures) as well as any data quality reviews that GRZ decides to undertake.

MCC will pay for all Compact-related independent evaluations and related data collection activities that fall into the post-Compact period.

Annex I: Indicator Documentation Table

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
LWSC FINANCIAL PERFORMANCE										
Outcome	Total Annual Operational Revenues	The monetary amount billed and collected annually by the utility for utility service rendered and for other services incidental thereto.	22,330,870	TBA	US Dollars	none	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	LWSC Annual Performance Report (with means of verification being audited accounts) released in March each year
Outcome	Total Annual Operating Cost	Annual expenses, including maintenance costs, and capital costs incurred as part of the water utility's operations.	20,803,870	TBA	US Dollars	none	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	LWSC Annual Performance Report (with means of verification being audited accounts) released in March each year
Outcome	Operating cost coverage	Total annual operational revenues divided by total annual operating costs.	107	109	Percentage	none	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	LWSC Annual Performance Report (with means of verification being audited accounts) released in March each year
Outcome	Non-revenue water	The difference between water supplied and water sold (i.e. volume of water "lost") expressed as a percentage of water supplied.	56.8	45	Percentage	Qualitative explanation required about commercial/ physical losses	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	NRW Baseline of 56.8% for Lusaka compact areas from MCC NRW Consultant.

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Outcome	Metering ratio	Total number of connections with operating meter/ total number of connections, expressed in percentage	68	66	Percentage		LWSC Company Performance Overview Quarterly Report	LWSC	Annual	The input data points are; number of connections with operational metres and the total number of connections as a denominator
Outcome	Collection efficiency	Revenue acquired in the current period (including arrears collected in current period) /Billed Revenue	91	72	Percentage	**none**	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	To be sourced from sale and revenue data.
LWSC SERVICE PROVISION										
Outcome	Continuity of service	Average hours of service per day for water supply.	18 (average for all LWSC coverage areas)	18	Hours per day	none	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	Project areas: Kwamwena, Ndeke, Vorna Valley (CP 5); Mtendere, Chipata, SOS, Ngombe, Jack Compound, 14 DMAs for CP 6; 2-3 impact evaluation control areas; For CP5, 24 hours supply needs to be present.
Outcome	Volume of water produced	Total volume of water produced in cubic meters for the service area, i.e. leaving treatment works operated by the utility and purchased treated water, if any.	23.09	21.34	Million cubic meters	Iolanda plant; and all 120+ boreholes for Lusaka city	LWSC Company Performance Overview Quarterly Report	LWSC	Annual	This indicator will measure volume of water produced from Iolanda and boreholes only for Lusaka district

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Outcome	Water Quality	This indicator will measure; number of samples tested in relation to minimum required and number of tests meeting the national drinking water standards according to NWASCO guidelines	TBA	TBA	Percentage	**none**	LWSC Company Performance Overview Quarterly Report and NWASCO report	NWASCO	Annual	The two types of parameters considered are bacteriological (total and faecal coliforms) and physiochemical (Chlorine residue, pH, turbidity and colour). Chlorine residue test is given prominence under physiochemical because of its relation to the bacteriological aspect of water.
Outcome	Complaints resolution	This will measure the percentage of complaints resolved by LWSC	TBA	TBA	Percentage	none	LWSC Company Performance Overview Quarterly Report and NWASCO report	LWSC	Annual	This indicator is important in gauging customer satisfaction regarding the service received from the utility company. A reduction in the number of complaints could indicate improvement in service delivery and/or that customers are losing confidence in providers not attending to their complaints. Special emphasis may be paid on MCA-Zambia project areas
LWSC OPERATIONS AND MAINTENANCE										
Outcome	Maintenance cost	Proportion of expenditure reserved for maintenance	TBA	TBA	Percentage	none	LWSC Company Performance Overview Quarterly Report and NWASCO sector report	LWSC	Annual	This indicator is critical for sustainability and to ensure that the utility company has developed and are implementing Maintenance Management Systems, Most of the maintenance works carried out should be planned

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Outcome	Maintenance ratio	Measure of the total maintenance-manpower requirement for the upkeep of a system. It is computed by dividing cumulative man-hours expended in direct labor during a given period by the cumulative number of end item operating hours during the same period.	TBA	TBA	Percentage	Planned versus unplanned	LWSC Company Performance Overview Quarterly Report and NWASCO sector report	LWSC	Annual	This indicator is critical for sustainability and to ensure that the utility company has developed and are implementing Maintenance Management Systems, Most of the maintenance works carried out should be planned
Outcome	O&M Costs covered by Collection	The ratio of O/M cost and revenues realized	83	TBA	Percentage	**none**	LWSC Company Performance Overview Quarterly Report	LWSC	Quarterly	Baseline Source: Operating & admin costs (less depreciation & doubtful debts)/ Collection Note: Adequate maintenance is not being budgeted as part of LWCS budget planning. This leads the baseline to be artificially high.
CORE WATER NETWORK EXPANSION (CP 1 & 2 and CP 5)										
Output	Total length of transmission line operational	Length of constructed/rehabilitated transmission line commissioned and in use	0	0	Kilometers	**none**	CSE Progress Report (UWP)	MPCA	Quarterly	The target is includes 62Km for CP1&2 and also the 14km constructed as part of the works for CP5
PHYSICAL NON-REVENUE WATER REDUCTION (CP 6)										
Output	Number of meters installed/replaced for reduction of physical non-revenue water. Target is 32,500 meters.	Total Number meters installed or replaced in 14 district metering areas in Lusaka.	0	17,074	Number	DMA	CSE Progress Report (Suereca/ Veolia)	NRW consultant/ LWSC	Quarterly	Target is 32,500 meters. Replacement of meters in CP6 physical NRW neighborhoods (14 DMAs). These are Rhodes Park, New Kabwata, Chelston, Avondale, Matero, Kabulonga/ Sunningdale, Northmead, Garden, Emmasdale Bank Houses, Chienje South, Marropodi,

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
										Chawama/ Kuomboka, Kabwata Estates, Munali to Chelston.
Output	Total length of pipes replaced to reduce physical non-revenue water. Target is 101 km.	Total length of old pipes in kilometers to be replaced in 14 district metering areas in Lusaka.	0	83.7	Kilometers	DMA	CSE Progress Report (Suereca/ Veolia)	NRW consultant/L WSC	Quarterly	Target is replacement of 101 km of pipes in 14 physical NRW DMAs (10" bigger pipe)
WATER NETWORK EXTENSIONS TO CUSTOMERS (CP3 AND CP 5)										
Output	Length of new water distribution network to customers constructed in Mtendere and Kamanga* - include qualitative question about section handover in ASL.	Total pipe length of the distribution network for water supply in Mntendere and Kamanga. This should include all different sizes of new pipes laid. Sewer pipes are not included. Contract target for 93.9 km.	0	337.2	Kilometers	Length constructed and handed over/operational	CSE Progress Report (UWP)	CSE	Quarterly	Total contracted length to be contructed in Mtendere and Kamanga is 93.9 km. Contract (CP3) includes eleven sections for water supply network in residential areas in both neighborhoods. Ten sections are in Mtendere (section 1-10); Kamanga is one section only (section no. 14). Refer to CP3 Map
SEWER NETWORK EXTENSIONS TO CUSTOMERS (CP3)										
Output	Total length of sewers constructed (Tertiary) to customer properties in Mtendere.* - include qualitative question about section handover in narrative	Total Length of sewer pipes constructed excluding secondary interceptors and primary mains. This includes sections 1-9.	0	74.7	Kilometers	Length constructed and handed over/operational	CSE Progress Report (UWP)	MPCA	Quarterly	Contract (CP3) sections 1 through section 9. Target length for all sections is 78.3 km. Refer to map in M&E Plan text

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Output	Total length of interceptors constructed (Secondary) connecting Mtendere properties to sewer mains.* - include qualitative question about section handover in narrative	Total length of interceptors constructed (secondary sewer pipes) carrying wastewater from Mtendere to mains on the way to Kaunda Square Ponds	0	0.9	Kilometers	Length constructed and handed over/operational	CSE Progress Report (UWP)	MPCA	Quarterly	Contract (CP3) sections 11 and 12. Target length for both sections is 3.8 km. Refer to map in M&E Plan text
Output	Length of sewer mains constructed (Primary) carrying wastewater to Kaunda Square Ponds* - include qualitative question about section handover in narrative	Total length of mains constructed (primary main sewer pipes which carry wastewater from sewer interceptors to Kaunda Square ponds). These are sections 13 and 15.	0	2.4	Kilometers	Length constructed and handed over/operational	CSE Progress Report (UWP)	MPCA	Quarterly	Contract (CP3) sections 13 and 15. Target length for both sections is 5.2 km. Refer to map in M&E Plan text
WATER AND SEWER CONNECTIONS (CP3 AND CP5)										
Output	Sewer connections coverage for properties in Mtendere to tertiary sewers	Percentage of properties that are connected to the sewer network in Mtendere as customers of LWSC.	0	0	Percentage	none	SCAP implementation progress report	LWSC/ SCAP monitoring system	Quarterly	Reported via SCAP monitoring system. Total number of properties is 8,713, excluding churches, and schools. Each property may have multiple water closets. Within CP3, these are in sections 1-9.
Output	Metered water connections to properties in LWSC customer database	Percentage of properties that are connected to a metered LWSC water connection in project areas	0	799	Percentage	Disaggregate by neighborhood	EDAMs and SCAP monitoring system	LWSC/ M&E team	Quarterly	Disaggregate by Mtendere (9625 properties); Kamanga (xx properties); Ndeke-Vorna Valley (5,325 properties; and Kwamwena

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
										(6,593 properties).
Output	Decommissioning of pit latrines and septic tanks in Mtendere	Percentage of pit latrines and septic tanks in Mtendere that have been decommissioned to comply with the Public Health Act	0	0	Percentage	none	SCAP implementation progress report	LCC/ Public Health Dept.	Quarterly	LCC is the enforcement body for decommissioning latrines. Total number of latrines/ septic tanks in Mtendere is 6,988
Output	Percentage of kiosks constructed and operational in Ngombe, Chiapata, SOS, and Jack Compound	These are new kiosks that have been constructed using MCA-Zambia funds. Kiosks must be connected by LWSC to be made operational	0	35	Number	Ngombe, Chipata, SOS, Kamanga, and Jack Compound	CSE Progress Report (UWP)	LWSC/ peri urban office and MECB	Quarterly	Compact funds supported construction of kiosks in Ngombe (15), Chiapata (16), SOS (2), Kamanga (5) and Jack Compound (30).
BOMBAY AND MAZYOPA DRAINAGE IMPROVMENTS (CP7&8)										
Output	Length of drains fenced	Total length of the drain fenced off to prevent access by the public	0	0	Kilometers	none	CSE Progress Report (UWP)	MPCA	Quarterly	Compact target was 6.46km, Due to vandalism, much of this
Output	Length of drains covered	Total of length of drains covered with concrete	0	0.108	Kilometers	none	CSE Progress Report (UWP)	MPCA	Quarterly	Target for compact was 0.75km and only approximately 0.1km was reportedly completed by CED

Indicator Level	Indicator Name	Definition	Baseline	CED data point	Unit of Measure	Disaggregation	Primary Data Source	Responsible Party	Frequency of Reporting	Additional Information
Output	Number of crossings constructed	Number of crossings contracted both pedestrians and vehicle	0	0	Number	none	CSE Progress Report (UWP)	MPCA	Quarterly	65 crossings were targeted as part of compact investments

Annex II: Data Collection Qualitative Forms

Data Collection Form I: Zambia Post Compact Reporting by MPCA
Qualitative Monitoring form
This form is to be completed during the reporting period to accompany quantitate data submission for completion of the Indicator Tracking Table on a quarterly or annual basis
Reporting Period: **Year _____ Quarter_____**
Name of Respondent: _____ Designation_____
This report will be complete based on the CSE Monthly and Weekly progress report

Section A: Indicator Update

Indicator Name	Unit of Measure	Status	Target (This should be based on contractual target)	Comments of Performance (Especially for non-achievement of the target)
CORE WATER NETWORK EXPANSION (CP 1 & 2 and CP 5)				
Total length of transmission line operational				
PHYSICAL NON-REVENUE WATER REDUCTION (CP 6)				
Number of meters installed/replaced for reduction of physical non-revenue water. Target is 32,500 meters.	Number			
Total length of pipes replaced to reduce physical non-revenue water. Target is 101 km.	Kilometers			
Total length of new pipes installed tto reduce physical non-revenue water. Target is 156 km.	Kilometers			
WATER NETWORK EXTENSIONS TO CUSTOMERS (CP3 AND CP 5)				
Length of new water distribution network to customers constructed in Mtendere and Kamanga* - include qualitative question about section handover in ASL.	Kilometers			
SEWER NETWORK EXTENSIONS TO CUSTOMERS (CP3)				

Indicator Name	Unit of Measure	Status	Target (This should be based on contractual target)	Comments of Performance (Especially for non-achievement of the target)
Total length of sewers constructed (Tertiary) to customer properties in Mtendere.* - include qualitative question about section handover in narrative	Kilometers			
Total length of interceptors constructed (Secondary) connecting Mtendere properties to sewer mains.* - include qualitative question about section handover in narrative	Kilometers			
Length of sewer mains constructed (Primary) carryign wastewater to Kaunda Square Ponds* - include qualitative question about section handover in narrative	Kilometers			
WATER AND SEWER CONNECTIONS (CP3 AND CP5)				
Sewer connections coverage for properties in Mtendere to tertiary sewers	Percentage			
Metered water connections to properties in LWSC customer database	Number			
Decommissioning of pit latrines and septic tanks in Mtendere	Number			
Percentage of kiosks constructed and operational in Ngombe, Chiapata, SOS, and Jack Compound	Percentage			
BOMBAY AND MAZYOPA DRAINAGE IMPROVMENTS (CP7&8)				
Length of drains fenced	Kilometers			

Indicator Name	Unit of Measure	Status	Target (This should be based on contractual target)	Comments of Performance (Especially for non-achievement of the target)
Length of drains covered	Kilometers			
Number of crossings constructed	Number			

Section B: Livelihood Restoration

MPCA should make contact with each of the 118 livelihood Project Affected Persons (PAPs) over the course of every 6-12 weeks so that they do not lose contact. Use the information gathered from the phone calls to fill out the table below.

Indicator	Cohort 1 (total 51)	Cohort 2 (total 24)	Cohort 3 (total 43)	Total (118)
Number of PAPs contacted by cohort in monitoring review period				
Number of PAPs who reported making over 1500 Zambia kwacha				
Number of PAPs who reported still operating livelihood business				
Number of PAPs who reported increased savings				
Any other noteworthy items from follow up with PAP: (qualitative or quantitative)				

Section C: Overall program outlook

SN	QUESTION	STATUS	COMMENTS
	Comments on status works based on updated program of works		
	Has the program of work been revised during this reporting period? If revised state the major reason		
	According to updated program of work, when is the forecasted date of completion of works		

	Based on the latest CSE progress report, For completed section, what proportion has been handled over to be operational?		
	Major challenged as identified as threat to completion of works(This can be inferred from the CSE and PM reports)		

Data Collection Form II: Zambia Post Compact Reporting by NWASCO

Qualitative Monitoring form

This form is to be completed during the reporting period to accompany quantitate data submission for completion of the Indicator Tracking Table on a quarterly or annual basis

Reporting Period: **Year _____ Quarter_____**

Name of Respondent: _____ Designation_____

This report will be completed based on the prevailing NWASCO sector annual report

SN	QUESTION	STATUS	COMMENTS
	During this reporting period are all corporate documents in place for LWSC (Strategic plan, Investment Plan, Approved budget and audited accounts). If not in place provide reasons		
	According to board charter for LWSC, are they having scheduled board meetings?		
	Is the expenditure toward board meeting within minimal levels as outlined in NWASCO sector report on corporate governance		
	What is your overall assessment of LWSC governance status?		
	Comments on the planned versus unplanned maintenance regime at LWSC. Are they adequately providing maintenance for all the assets according to the measures outlined by NWASCO?		
	What proportion of the overall budget is allocated toward maintenance		
	Comments of LWSC tariff progress during this reporting period.		

Data Collection Form III: Zambia Post Compact Reporting by LWSC

Qualitative Monitoring form

This form is to be completed during the reporting period to accompany quantitative data submission for completion of the Indicator Tracking Table on a quarterly or annual basis. This should be accompanied by LWSC Quarterly or Annual Performance Report. Refer to Annex I of Post Compact M&E Plan for details on indicators

Reporting Period: **Year _____ Quarter_____**

Name of Respondent: _____ Designation_____

Section A. Indicator Reporting

Indicator Name	Unit of Measure	Status	Target (This should be based on LWSC strategic plan or corporate plan)	Comments of Performance (Especially for non-achievement of the target)
Total Annual Operational Revenues	US Dollars			
Total Annual Operating Cost	US Dollars			
Operating cost coverage -	Percentage			
Actual Revenues	ZMW			
Non-revenue water	Percentage			
Metering ratio	Percentage			
Collection efficiency	Percentage			
Continuity of service (This should be disaggregated by DMA/zone) CP3; Mtendere & Kamanga CP5; Kwamwena, Ndeke Vorna valley, Ng`ombe, Chipata SOS CP6; 13 DMAs as follows; 1. New Kabwata 2. Chestone 3. Avondale 4. Northmead 5. Chawama Kuomboka	Hours per day			

Indicator Name	Unit of Measure	Status	Target (This should be based on LWSC strategic plan or corporate plan)	Comments of Performance (Especially for non-achievement of the target)
6. Chilenge south 7. Marrapodi 8. Kabwata estate 9. Matero 10. Garden 11. Emmasdale Bank houses 12. Rhodespark 13. Kabulonga-Sunningdale				
Volume of water produced	Cubic meters			
Water Quality	Percentage			
Customer complaints	Number			
Maintenance ratio	Percentage			
O&M Costs covered by Collection	Percentage			

Overall comments on performance_____

_____

_

_____

Section B. Social Inclusion, Gender Mainstreaming and IEC for LWSC

SN	QUESTION	STATUS	COMMENTS
	Social and Gender Coordinator and IEC Focal Point still assigned?		
	Number of Gender Committee meetings held annually Number of IEC Technical Working Group meetings held annually		
	% of LWSC managers/% of LWSC staff who are women		
	Amount of budget allocation for SIGM/IEC implementation strategy (amount, and as a proportion of total LWSC budget) by objective (1 through 5) and by year.\ Establishment of SIGM/IEC KPIs in LCC performance monitoring framework		
	Peri-Urban Department: - Rate for non-standard sewer connection fee in peri-urban areas (2018 baseline: 197 Kwacha at kick-off of Peri-Urban Policy). - Rate for non-standard water connection fee in peri-urban areas (2018 baseline: 197 Kwacha). - Number of customers reached by IEC and sanitation marketing campaigns/outreach under the Peri-Urban department. - Number of water and sanitation disconnections, disaggregated by areas with and without micro-payment mechanisms Lipila Pangono Pangono (any baseline data available from years 2013 to 2018?) - .		
	Commercial Department: - Is the flexible micro-payment mechanism Lipila Pangono Pangono still active in Mtendere? Is it available in other Lusaka areas? If yes please describe the areas of intervention. - Is SMS billing still available? - Number of customers that use micro-payment mechanisms. Number of customers that use		

	SMS billing. - Number of customers in billing arrears disaggregated by with and without micro-payment options (any baseline data available from years 2013 to 2018?) - Number of customers in billing arrears, disaggregated by PUP and Non PUP areas (before and after SMS billing implementation)		
	Space for narrative supplement on SIGM/IEC strategy implementation and outcomes		

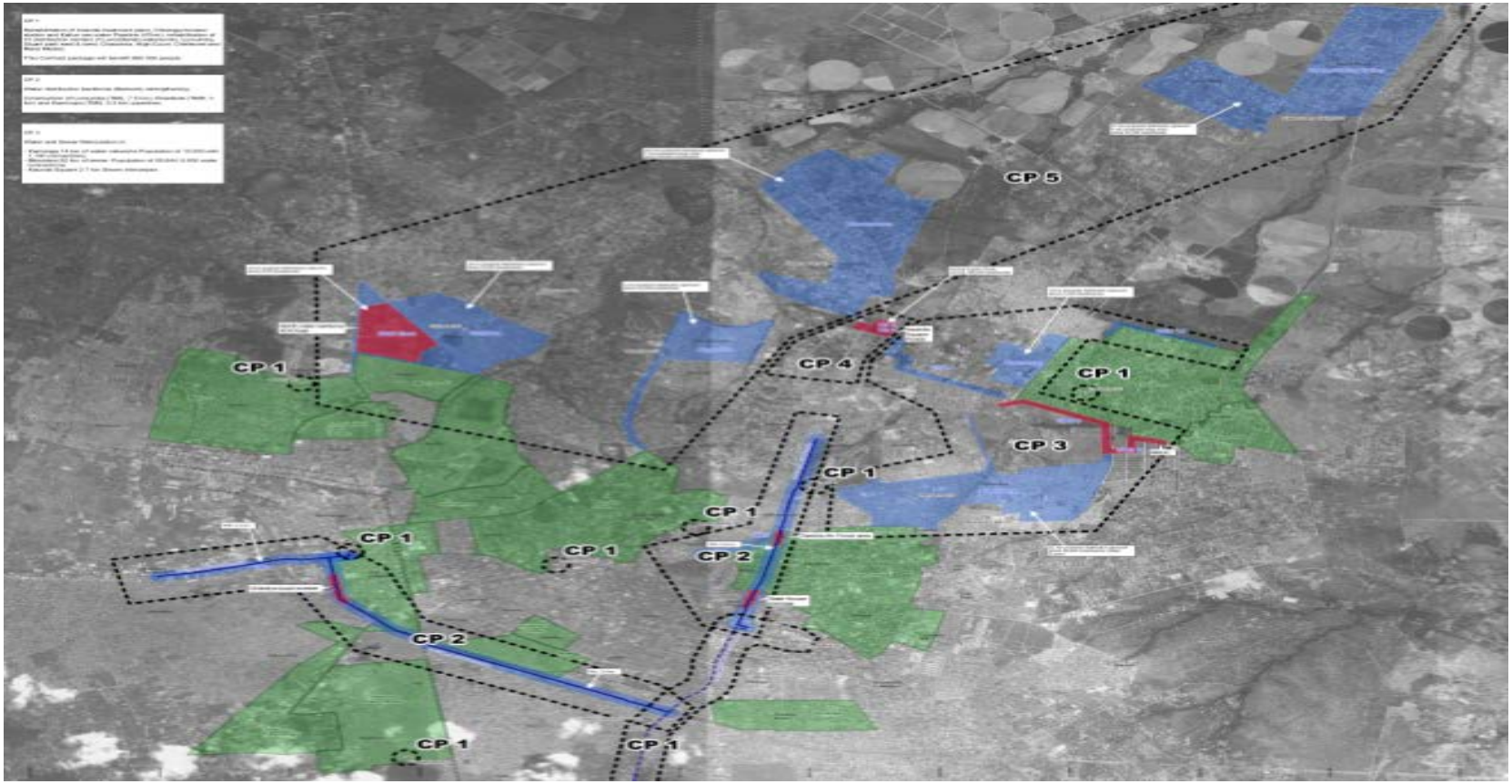
Data Collection Form IV: Zambia Post Compact Reporting by LCC/ MPCA
Qualitative Monitoring form
This form is to be completed during the reporting period to accompany quantitate data submission for completion of the Indicator Tracking Table on a quarterly or annual basis
Reporting Period: **Year _____ Quarter_____**
Name of Respondent: _____ Designation_____

SN	QUESTION	STATUS	COMMENTS
	Is LCC allocating enough resources to the maintenance of drains? Proportion of the budget toward to drains maintenance (This should be based in accordance with financial guiding document)		
	LCC allocation of human resources to policing the drains (State police and local community members		
	Availability of equipment in drain maintenance. Provide a list of equipment		
	Any program which LCC has put in place to prevent residents in throwing solid waste in the drains		
	Is the solid waste management in entity in place? If not yet in place, what is the expected date when it will be fully operational		
	How is LCC utilizing the developed storm water master plan in the improvement of drainage and flooding in the city		

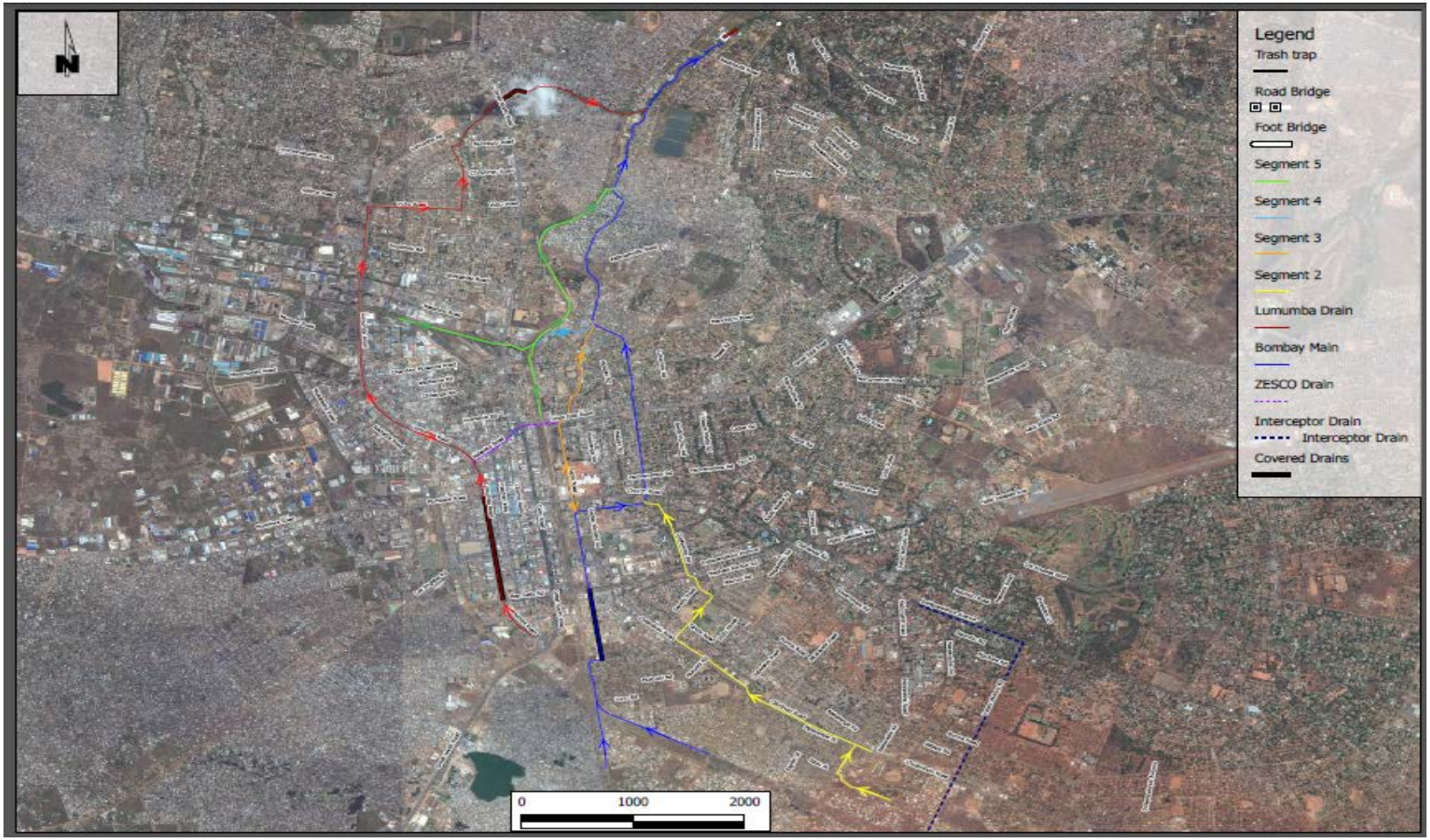
Section B. Social Inclusion, Gender Mainstreaming and IEC

SN	QUESTION	STATUS	COMMENTS
	Number of Gender Focal Points Number of IEC Focal Points		
	Number of SIGM technical working group meetings held annually Number of IEC technical working group meetings held annually Number of SIGM/IEC trainings held annually (by target group—Councillors, WDCs, Constituency Development Fund Committee, Zone Development Committee—and by year)		
	% of LCC managers/% of LCC staff who are women % of WDC decision makers/members who are women		
	Amount of budget allocation for SIGM/IEC implementation strategy (amount, and as a proportion of total LCC budget) by Outcome (I through V, internal and I through II, External) and by year. Establishment of SIGM/IEC KPIs in LCC performance monitoring framework		
	Number of IEC campaigns by topic, beneficiaries reached and year (Peri-Urban, and Housing and Social Services Units)		
	Space for narrative supplement on SIGM/IEC strategy implementation and outcomes		

Annex III: Maps for MCA-Zambia Infrastructure Project areas



Map 1: *The map shows Contract Packages related to water and sanitation infrastructure activities.* ***CP 1*** *focused on rehabilitation of Iolanda treatment plan, Chilanda booster station and Kafue raw water transmission pipeline and rehabilitation of 10 distribution centres.* ***CP 2*** *- water distribution backbone (network) strengthening through the construction of Lumumba and Kamloops pipelines.* ***CP3*** *– Water and sewer reticulation in Mtendere and Kamanga including Kaunda Square sewer interceptor.* ***CP4*** *– Construction of Kaunda Square waste stabilization ponds. CP 5 – new water reticulation systems in Kwamwena and Ndeke-Vorna Valley, and water network expansion, household connections and water kiosk in SOS Village, Chipata and Ng'ombe Compounds.* ***CP 6*** *(Shaded in green) – Non-revenue water reduction interventions including replacement of worn out pipes, pipe leakages, strengthening of meter management and improvements in measurements of production and billing*



Map 2: *The maps highlights the drainage infrastructure construction packages.* ***CP 7*** *covering Thorn Park and Garden Compound areas.* ***CP8*** *covers drainage construction south of Great East Road including Evelyn Hone, Madras, and Kamwala.* ***CP 10*** *covers drainage construction North of Kasangula road in Mazyopa area. Note that* ***CP 9*** *(Lumumba drain (in red)) was de-scoped.*