THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WATER AND IRRIGATION

LVWATSAN-MWANZA Project

Immediate Investment Plan (IIP)

Abbreviated / Resettlement Action Plan (A/RAP) for Contract 1: Extension and Rehabilitation of Water Supply and Wastewater Systems in Mwanza City

PUBLIC FINAL INTERIM REPORT

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May 2017

MOTT MACDONALD

LVWATSAN – Mwanza

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Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA)

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List of Abbreviations

ARAP	Abbreviated Resettlement Action Plan
AFD	French Development Agency
BP	Bank Procedure (World Bank)
DED	Detailed Engineering Design
DN	Distribution Network
DoE	Department of Environment
EIB	European Investment Bank
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management/Monitoring Plan
EU	European Union
EUR	Euro
GRM	Grievance Redress Mechanism
GoT	Government of Tanzania
HDPE	High Density Polyethylene
ID	(Pipe) Identity
IIP	Immediate Investment Plan (for Mwanza and three satellites)
LS	Lender's Supervisor
LVWATSAN	Lake Victoria Water and Sanitation (Project)
MCC	Mwanza City Council
MEO	Mtaa Executive Officer
MoWI	Ministry of Water and Irrigation
MWAUWASA	Mwanza Urban Water Supply and Sanitation Authority
NEMC	National Environment Management Council
NGO	Non-governmental Organization
O&M	Operation and Maintenance
OP	Operational Policy (World Bank)
PMC	Project Management Consultant (for LVWATSAN)
PMU	Project Management Unit (for LVWATSAN)
PS	Pump Station
RMF	Resettlement Management Framework
RPF	Resettlement Policy/Planning Framework (for LVWATSAN)
SEP	Stakeholder Engagement Plan (for LVWATSAN)
STIP	Short-term Investment Plan (for Mwanza)
TD	Tender Document(s)
WEO	Ward Executive Officer
WSDP	Water Sector Development Project
WST	Water Storage Tank

Glossary

A/RAP	Document in which the responsible competent authority or project party describes the impact of involuntary resettlement and specifies the procedures that will be followed to identify, evaluate and displace or compensate Project Affected People, and defines the actions to be undertaken during all phases of displacement or compensation. A RAP is required in case more than 200 people area adversely affected; an ARAP for 200 people or less – both documents have in principle the same structure. A RAP requires more socio-economic information on the affected people.
Census	Field survey carried out to identify and determine the number of Project Affected Persons as a result of land acquisition and related impacts. The census provides the basic information necessary for determining eligibility for compensation, resettlement and other measures emanating from consultations with affected communities and the local government institutions.
Compensation	Refers primarily to the cost of payment for expropriated land (including trees and crops that cannot be harvested), housing, structures and other fixed assets, including assets acquired for temporary project use. It includes the costs incurred to directly acquire substitute properties as well as the cost of acquiring resettlement sites. Compensation applies to vendors, enterprises, and other commercial operations, as well as residential units (households).
Cut-off Date	Date of completion of the census and assets inventory of persons affected by the development. Persons occupying the area after the cut-off date are not eligible for compensation and/or resettlement assistance. Similarly, fixed assets (such as built structures, crops, fruit trees, and woodlots) established after the date of completion of the assets inventory, or an alternative mutually agreed on date, will not be compensated.
Grievance Redress Mechanism (GRM)	The A/RAP contains a GRM based on policies and procedures that are designed to ensure that complaints or disputes about any aspect of land acquisition, compensation, resettlement and rehabilitation are being addressed. This mechanism includes a procedure for filing of complaints and a process for dispute resolution within an acceptable time period.
Involuntary resettlement	Refers to (a) physical displacement (i.e. physical relocation of residence or loss of shelter), and/or (b) economic displacement (i.e. loss of assets or access to assets that leads to loss of income sources or means of livelihood) as a result of project-related land acquisition or restriction of access to natural resources. Resettlement is considered involuntary when affected individuals or communities do not have the right to refuse land acquisition resulting in displacement. Involuntary resettlement can be caused by environmental degradation, natural disasters, conflicts or development projects. Even if the

	resettlement is prompted by public safety concerns (such as natural hazard-induced displacement), it is still considered involuntary if the resettled population has no choice to remain at their location. Involuntary resettlement is associated with loss of housing, shelter, income, land, livelihoods, assets, access to resources and services, among others. These losses occur as a consequence of declaring a public purpose in cases of: (a) land acquisition, (b) expropriation or restrictions on land use based on eminent domain, (c) forfeiting of a livelihood/subsistence strategy dependant on the use of natural resources, and/or (d) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail. Conversely, resettlement is considered voluntary when affected persons have the right to refuse land acquisition or engage in open market transactions. Voluntary resettlement implies that the people involved: (i) are fully and a priori knowledgeable about the project and its implications and consequences; (ii) agree freely to participate in the project; and (iii) have the option to agree or disagree with the land acquisition, without adverse consequences imposed formally or informally by the state.
Land acquisition	Process whereby a person is compelled by a government agency to alienate all or part of the land that person owns or possesses to the ownership and possession of the government agency for public purpose in return for compensation. It includes purchases or leasing of land and purchases or leasing of access rights (way-leave).
Project Affected Person (PAP)	PAPs are defined in the RPF as all persons who lose as a consequence of the LVWATSAN – Mwanza Project ownership of and or part of their physical assets, which include their homes, tenancy, productive land, commercial properties, income earning and subsistence opportunities, cultural sites, communities, as well as social and cultural networks and activities. The impacts may be permanent or temporary. This include all members of the household (women, men, girls, boys, incl. Several generations in the case of extended households), the owner and employees of a business, tenants, land owners, and share croppers, informer settlers (i.e. lacking former titles)holders of customary land rights, informal business operators and their employees / assistants.
Resettlement Planning Framework	Provides guidelines for development of appropriate mitigation and compensation measures for the impacts caused by the project activities whose exact locations are not known prior to project appraisal. The RPF is intended for use as a practical tool to guide the preparation of A/RAPs for sub-project activities during implementation of the project.

Acknowledgement

The Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA) would like to acknowledge the assistance and guidance received for compiling this A/RAP Report for the proposed extension and rehabilitation of water supply and wastewater systems in Mwanza City.

As it is not known at this stage whether ≤200 (ARAP) or >200 (RAP) people will or may adversely be affected by the proposed project works under this contract, the present report is tentatively called an ‘A/RAP’ report.

Executive Summary

The LVWATSAN – Mwanza Project (2014-2020), implemented and financed by the Ministry of Water and Irrigation (MoWI), and co-financed by the European Investment Bank (EIB) and the Agence Française de Développement (AFD), aims at protecting the Lake Victoria environment and wellbeing of the population in the Lake Basin. The Project has several components, one being the preparation and implementation of an Immediate Investment Plan (IIP) for Mwanza City. Implementation of the IIP is through a number of contracts, one being Contract 1: extension and rehabilitation of water supply and wastewater systems in Mwanza City. Contract 1 implementation commenced in early-March 2017 (contract signing followed by mobilization) and is currently expected to have been completed in December 2019 (including 12 months defects period).

The aim of this Interim A/RAP report is to provide (i) an assessment of the currently known Project Affected People (PAP) resulting from the Contract 1 works, (ii) an oversight of the compensation requirements, and (iii) outlining the areas of the works where construction may commence as there are no PAPs (pending checks and confirmation by the Supervising Consultant).

The package of Contract 1 project interventions in Mwanza City consists of two main components: water supply works and wastewater works, and each component includes a number of rehabilitation and extension sub-components, as follows.

Water Supply – Extension: The works will be carried out in seven (7) areas, i.e. Kitangiri, Nyasaka, Mjimwema/Nyakabungo, Capri Point, Bugarika, Nyegezi and Makongoro. In these areas in total 71 km of HDPE (68 km) and steel pipes (3 km) will be installed, as well as 162 km of small diameter distribution pipelines for customer connections. Furthermore, eight (8) water storage tanks will be constructed on hilltops, and four (4) pump stations will be built. Most works require trench excavation and backfilling or site clearance and removal of excavated spoils.

Water Supply – Rehabilitation: These works will be conducted in three (3) areas, i.e. in Makongoro, Nyakato and along Kenyatta road, and comprise the replacement of approximately 20 km of existing pipes that are in poor condition, as well as trench excavation and backfilling works.

Wastewater – Extension: Existing sewers will be extended over short distances in four (4) areas, i.e. in Mabatini A & B, in Kilimahewa, in Isamilo and in Igogo. In total 3.9 km of corrugated HDPE pipes with DN 225-300 mm will be installed in or along main roads. Some of these will connect the simplified sewerage pipe systems, that will be installed in unplanned settlements under a separate contract, Contract 4a of the project, to the city's sewerage network. Other works under this sub-component include the laying of 2 km of customer connections, and construction of inspection chambers.

Wastewater – Rehabilitation: Along Kenyatta and Makongoro Road in total 410 m of corrugated HDPE pipes (300-630 mm) will be replaced, as well as 16 m of steel pipe (700 mm).

For some of the works, such as water storage tanks and pump houses, plots of land have been or still have to be acquired, while other plots have been and are merely waiting to be formally handed over or

released. Supporting data on these transactions is being collected and analyzed by the PMU but considerable data is still missing.

Chapter 3 of this report provides an analysis of the applicable policy and legal framework. Land acquisition is mainly governed by the Land Act No. 4 (1999) and Village Land Act No. 5 (1999), and following Regulations (2001).

Site conditions in most of the interventions areas are characterized by hilly and rocky terrain that is densely populated. Houses and other structures have been built close together, often encroaching on existing road reservations reason why there is little space to excavate trenches and lay pipes. The variable rocky terrain may require in some cases heavy duty equipment (e.g. blasting), imposing potential danger and damage to life and property than some less intrusive means.

Many people in Mwanza live in unplanned settlements. These settlements, apart from lacking basic infrastructure such as roads, schools and water supply, are located on steep rocky hills where providing basic sanitation is difficult. In recent times housing in Mwanza City has extended further and further up these hills in an uncontrolled manner. This has created numerous problems such as improper wastewater disposal. In such areas conventional sewer systems are difficult to establish and maintain due to the rocky nature, steep slopes, problematic pipe alignments due to uncontrolled house layouts, etc. As the works will be implemented in a large number of locations, collecting specific socio-economic data on each locality has been challenging and time-consuming. Therefore, at the time of writing data has been collected from selected locations only, i.e. from other components of the LVWATSAN program.

Community information meetings have been organized by the PMU in the majority of the planned Contract 1 project sites, where communities were informed on the upcoming project activities and their views and concerns were discussed and recorded. In general, there was an overwhelming appreciation with and eagerness to start the works. One of the first steps were to establish within each community a mechanism with which any grievances associated with the works will be redressed.

The requirements for PAP identification and preparation of (Abbreviated) Resettlement Action Plans (A/RAP) has been described in detail in the Resettlement Planning Framework (RPF) for the project. However, some of the guidance provided in the RPF is not feasible under the present conditions. One of the constraints experienced is that contrary to RPF assumptions, the Design Consultant has not provided detailed maps that depict the exact locations of where the interventions will take place. Particularly the water supply pipe systems have been indicated in the design in too small a scale, from which in most cases it is not possible to see where the pipes will be put (e.g. on the left or right side of the road, or in the middle), and which plots or properties will or may be affected. Therefore it is not possible at this stage to identify all PAPs for these systems.

What is needed is Contractor involvement in this process: he has to decide, together with the Supervising Consultant (SC), and PMU were the pipes will be laid, and in consultation with landowners/users, to avoid or minimize the number of PAPs as much as possible. This needs to be done by carefully considering the final construction methods and sequencing of works, as this may also impact the number of PAPs. Therefore, this report should be considered as a guide for the SC to finalise once details of construction methods and sequencing, as well as precise routing and marking of the new infrastructure, as proposed by Contractor/SC are known in all areas.

In the absence of detailed design maps showing exact pipe locations, the PMU has conducted a PAP Risk Area survey resulting in the identification of four classes of potential PAP risk areas; results have been entered in a digital PAP Risk Area Data Register (Appendix 9), which, meanwhile, has been handed over to the SC. This register aims at alerting on possible problem areas during detailed planning and construction of the works, and to look for alternative non- or less impacting options as may be possible. A

tentative Work Plan for the Contractor and Supervising Consultant, to help sequencing of the works, is provided in Appendix 10.

With respect to the land plot requirements for the above-ground construction works, Table 7.3 summarizes relevant particulars; these are all water supply extension works, i.e. 8 Water Storage Tanks (WST) and 4 Pump Stations (PS), 12 facilities in total.

Required plot size have been extracted from the Tender Documents, Volume IV – Bill of Quantity, of April 2016. Largest plot size is 1,063 m^2, equivalent to an imaginary square plot of about 32 by 32 m; smallest plot is 120 m^2 (equiv. to approx. 11 x 11 m).

Three (3) of the four (4) PS will be built within existing MWAUWASA premises and do not require land acquisition, compensation or handing over.

Lands for all nine (9) other structures will have to be acquired from or handed over by the current owner/user of the land. In three (3) of those 9 cases a cash compensation payment has already been made; in one (1) case an alternative plot of land will be given to the landowner. In two (2) of these cases a compensation payment in cash is still outstanding, and in the three (3) remaining cases it is not known whether a compensation payment or alternative land will be provided.

In seven (7) of the 9 cases, supporting documents have been provided or found, however in not any of the cases it is known whether compensation has been or will be made in compliance with the *Land Assessment of the Value of Land for Compensation Regulations of 2001* and the MoWI-endorsed *Resettlement Planning Framework* (RPF) which includes among others the requirement of setting a cut-off date and land to be valued by a government valuer, and reported upon, approved by the Chief Valuer.

For eight (8) of the 9 facilities that are not yet owned by MWAUWASA a formal land deed tile is being obtained, and for one (1) it is not known whether this is the case.

Accidental damage which may occur during construction works, for example to structures such as buildings, infrastructure, trees, fences, etc. will be dealt by the Contractor in collaboration with the developer, and cannot be considered within the framework of the present report due to the unknown about whether this will happen and if so, where and when.

The RPF requires that compensation under the project is to be provided in accordance with Tanzanian law, particularly the 1967 Land Acquisition Act and 1999 Land Act and the above-mentioned Regulations. i.e. being cash equivalent to the market value. All valuations for acquisition of land plots for the project have to comply to this requirement.

The RPF states that "*all estimates of compensation will be based on Replacement Cost Methods. Nationally set values for crops and fruit trees by the Ministry of Lands, Housing and Settlements are used as the basis for crop values. The Comparative method of valuations which is sometimes referred to as the Direct Capital Comparison method (DCCM) is used and in absence of the market evidences the Replacement Cost Method (RCM) is adopted. Under the later method, Depreciated Replacement Cost is equated to the Market value of the subject property.*"

EIB Standard 6 requires that the Promoter is to offer to the affected persons an informed choice of either compensation in kind or monetary compensation at the outset. As long as any outstanding compensation payments are pending, the areas concerned will be off limits to contractors until at least the valuation process has been approved, including by the householders themselves (with compensation agreed).

Further sections of the present report detail institutional responsibilities and operational procedures, requirements for the grievance redress mechanism that is being set up in each town, as well as arrangements for implementation, monitoring and reporting on the A/RAP activities.

The next steps for finalization of the A/RAP process for Contract are as follows:

STEP 1 – Decision on final alignment of the pipelines – The final location of the pipes of the water supply networks will have to be decided upon, ideally by a combined party of the Contractor, SC, PMU, as well as the local community involved.

The wastewater works will be constructed mostly within existing road reservations (usually the middle of a road). Apart from unavoidable but temporary full or partial road closure, and disruption of traffic flow, these works are not expected to affect people's properties or businesses and therefore it is not expected that compensation payments will need to be paid.

STEP 2 – Identification of PAPs – By the SC and PMU.

STEP 3 – Setting the Cut-off Date and Valuation of Assets of PAPs and reporting – By the Valuer, report to be approved by the Chief Valuer (Dar es Salaam). One or more Valuers are to be engaged to value the identified affected property along the pipe alignments as well as on all nine (9) plots required for the aboveground water extensions works (water storage reservoirs and pump stations). Report findings to be included in the Final A/RAP report for this Contract 1.

STEP 4 – A/RAP Report review and approval – As per the RPF requirements, the A/RAP report will be forwarded to the Mwanza City government for review and approval.

Once satisfied with the A/RAP report, the Mwanza City government will forward the report on together with their recommendations to the Ministry of Land, Housing and Settlements and the MoWI for their endorsement and final approval.

Compensation and resettlement plans (contracts) will be binding under statute, and will recognize that customary law governs land administration and tenure in the rural/village areas.

Further review and approval steps are given MoWI's notification of 15 February 2017, that are presented in Appendix 7.

STEP 5 – Compensation Payments – Compensation is finally handed to the beneficiary or the body responsible for resettlement i.e. the provincial water authority for payment to the PAP. All payments and transfers in kind will be made in the presence of the affected party and the city authorities. Note that some of the compensations for land take for construction of the water storage tanks have already been made.

All compensation and social assistance that project affected persons are eligible for, needs to be offered and completed prior to any land acquisition takes place.

STEP 6 – Monitoring and Evaluation – Monitoring will be ongoing from the outset. Early commencement of monitoring is essential in order that any issues are raised early on in the project.

Meanwhile, construction may commence on all sites after confirmation has been received from the SC that there are no PAPs associated with these works.

1. Introduction

1.1 Background – Lake Victoria Water and Sanitation (LVWATSAN)

The Lake Victoria Water and Sanitation (LVWATSAN) Initiative was launched in 2004 by the ministers responsible for water from Kenya, Tanzania and Uganda with the aim of achieving the Millennium Development Goals (MDG) for water and sanitation in secondary centres within the Lake Victoria Basin.

The Water Sector Development Programme (WSDP; 2005-2023) established under the Ministry of Water and Irrigation (MoWI), under which LVWATSAN resorts, is the main financing mechanism for the water sector in Tanzania. Its past five year programme has foreseen almost USD 1 billion of funding for the WSDP. An Environmental and Social Management Framework (ESMF) and a Resettlement Management Framework (RMF) for the programme were prepared and completed in 2006.

1.2 LVWATSAN – Mwanza Project Preparatory Studies

Following a request from the ministers in 2009, the European Investment Bank (EIB) launched a project formulation study in 2010, with the aim to develop plans to scale up the UN-Habitat-promoted LVWATSAN Initiative to the major settlements of Kisumu in Kenya, and Mwanza, Musoma and Bukoba in Tanzania together with three smaller satellite towns around Mwanza, i.e. Misungwi, Magu and Lamadi. This study, concluded by Atkins in August 2012, resulted in a Project Formulation Report (PFR) covering the six fore-mentioned Tanzanian shore towns. Volume 3 of the PFR deals with the proposed project interventions in Mwanza City. Supplementary studies were conducted by R-Solve, the findings of which are reflected in the Supplementary Engineering Report (SER, August 2012). Both the PFR and SER include sections on preliminary perceived environmental and social impacts of the interventions, which were regarded as mostly positive.

EIB's Environmental and Social Datasheet, of 5 February 2013, concluded for the LVWATSAN project that "the majority of the investments will need to be subjected to Environmental and Social Impact Assessments (ESIAs) at town level, with development of Resettlement Action Plans at intervention level tailored in accordance with the spatial footprint as ultimately determined".

1.3 LVWATSAN – Mwanza Project Implementation

Implementation of the LVWATSAN project, the Project, started in October 2014, with the engagement of a Detailed Engineering Design (DED) consultant, COWI, followed by UN-Habitat being responsible for community liaison and starting in February 2015, and finally, a Project Management Consultant (PMC), Mott MacDonald, commencing in April 2015. Meanwhile, Halcrow had been contracted by EIB to develop a project-specific Resettlement Policy (Planning) Framework (RFP) in late-2014, whereas UN-Habitat was entrusted with the task to develop a project-specific Stakeholder Engagement Plan (SEP) – the resulting RPF and SEP, meant to guide Project implementation, were endorsed by the MoWI on 8 January 2016.

Key deliverables of the COWI/DED consultant (October 2014 – early-2017) included the following:

- **Immediate Investment Plan (IIP) / Mwanza City –** i.e. a study report and tender documents for planned interventions in Mwanza City for (i) sanitation in selected schools and public places; (ii) water supply extension and rehabilitation of pipelines; (iii) simplified sewerage and sewer rehabilitation and extensions.

- **IIP/Satellites Investment Plan –** study report and tender documents for planned [immediate] water supply, wastewater and sanitation interventions in Misungwi, Magu and Lamadi.
- **Master Plan for Mwanza City –** a water supply, wastewater and sanitation strategy for Mwanza and satellites covering the period 2015-2040 and including the Short-term Investment Plan (STIP) for proposed funded works and the Long-term Investment Plan (LTIP) for unfunded works.

Meanwhile for the various project components contracts have been developed as is outlined in Table 1-1.

Table 1-1. Construction contracts of the LVWATSAN – Mwanza Project (as per April 2017)

Nr*	Contract	Contract implementation period **
1	IIP/Mwanza: extension and rehabilitation of water supply and wastewater systems	May 2017 – December 2019
2	IIP/satellites: extension and rehabilitation of water supply systems and construction of faecal sludge treatment plants	May 2017 – June 2020
3	STIP/Mwanza: extension and rehabilitation of water supply and wastewater systems	November 2017 – November 2020
4a	IIP/Mwanza: simplified sewerage in three pilot areas in Mwanza City, including scaling up	March 2017 – March 2020
4b	IIP/Mwanza: sanitation in schools and public places	November 2016 – March 2020
-	Bukoba – sewerage systems	August 2017 – March 2019
-	Musoma – sewerage systems	June 2017 – January 2019

* Contract 1 to 4: mainly funded by EIB; Contract Bukoba & Musoma mainly funded by AfD
** As per JIP-planning of April 2017

As one of the requirements of the Tanzanian government and the financing EIB, various environmental and social documents are to be prepared for these contracts. For Contract 1, the focus of the present report, the PMC prepared and submitted to the National Environment Management Council (NEMC) a draft so-called Environmental and Social Management Plan (ESMP) in February 2016. NEMC subsequently concluded based on its review of the ESMP in April 2016 that the works would not result in serious impacts and therefore gave its no-objection to fund spending on the works. On 1 September 2016 NEMC issued its formal approval of the ESMP.

Another requirement of the Tanzanian government and the EIB is to ascertain whether the works require a (Abbreviated) Resettlement Action Plan (A/RAP) as specified by the Tanzanian government-endorsed Resettlement Planning Framework (RPF) that has been developed for the LVWATSAN – Mwanza Project. Of particularly importance herein EIB's 2013 Social Standard 6 on Involuntary Resettlement [1] and the World Bank's Involuntary Resettlement Policy (OP/BP 4.12), as the development partners involved agreed to apply the World Bank Safeguard Policies in the project.

The present document is the required A/RAP report for Contract 1. As it is not known at this stage whether ≤200 (ARAP) or >200 (RAP) people will or may adversely be affected by the proposed project works under this contract, the present report is tentatively called an 'A/RAP' report.

1.4 LVWATSAN – Mwanza Project Funding

The Project is financed under the European Union (EU) Africa Infrastructure Trust Fund within the overall context of the EU and Africa Strategic Partnership. The European Investment Bank (EIB) and the *Agence Française de Developpement* (AFD) have signed two loan agreements with the Republic of Tanzania for

[1] EIB, 2013, Environmental and Social Handbook, Volume 1. EIB Environmental Standards, Luxembourg.

an amount of EUR 45m each for the financing of 86% of the investment costs associated to the extension and upgrading of water supply and sanitation in Mwanza City and satellite towns (Misungwi, Magu, Lamadi), as well as sewerage systems in the towns of Bukoba and Musoma. The total Project cost is estimated at EUR 104.5m, including EUR 14.5m provided by the Tanzanian government.

1.5 Scope of the Present Report and Methodology

Objective – The present report deals *exclusively* with Contract 1: *rehabilitation and expansion of water supply and wastewater systems in Mwanza City* of the Immediate Investment Plan. The main objective of this A/RAP report is to provide a plan for resolving the displacement, resettlement and or compensation issues of the works and for ensuring that PAPs are not made worse off than they were before the commencement of this project. It is intended to be an agreed commitment by the involved parties, which guides the implementation of resettlement and/or compensation action for the affected persons and involved institutions.

Scope – The scope of this A/RAP report is that it:

- Based on the RPF states the agreed principles that apply to resettlement and/or compensation;
- Identifies, as far as possible, people currently using or living within the proposed corridor of impact and who will negatively affected;
- Describes the legal and institutional framework for dealing with displacement;
- Provides a general socio-economic profile of the project affected persons living in or using the RoW;
- Estimates the nature and magnitude of displacement;
- Sets out the criteria used to determine eligibility for resettlement, compensation and/or other assistance and what entitlements are due to different categories of DPs and for different types of losses;
- Indicates how affected assets of individual DPs are valued;
- Describes how resettlement and/or compensation entitlements will be delivered, including procedures, responsibilities and timing;
- Describes mechanisms for maximizing stakeholder participation and for airing grievances and redress;
- Provides an indication of the costs involved for resettlement of eligible PAPs.

Prior to and after submission by COWI of the final designs (in April 2016) the proposed sites were visited, concerned stakeholders were consulted, and possible impacts were assessed. Reporting took place in January-March 2017.

Methodology – The starting point for preparing the present A/RAP report was to study the design prepared by the Design Consultant COWI, for which the latest version of April 2016 was used. It was found however, that although the design provides maps of where the interventions will be located, these maps, particularly for the alignment of the water supply distribution and sewerage collection networks, are indicative only, and do not show precisely where these pipes will be located (e.g. on which side of a road) – and because of this it was not possible to determine PAPs based on the design maps only.

To counteract this omission, the E&S team embarked on a drive- and walk-by of all intervention sites (distribution networks, water storage reservoirs, and sewerage pipes), usually in the company of a MWAUWASA engineer who could indicate where the interventions (pipes) are most likely going to be installed or replaced. This then helped in identifying those structures and people that will be negatively affected by the works, and to what extent. It is to be noted however, that the final decision on where exactly all interventions will be located is still to be taken by a combined party including the contractor, the supervising consultant, MWAUWASA, PMC and last but not least the communities involved. This latter exercise is expected to considerably increase or reduce the number of Project Affected Persons by the project works, so the present draft report must be considered as an interim report only.

In conducting this A/RAP a participatory approach was adopted whereby key stakeholders including communities where the project is implemented, and involved institutions, were consulted. Various methods were employed by the study team in order to collect relevant information. Various documents were reviewed such as LVWATSAN project documents, subject related documents like policies and acts, the RPF and profiles of respective district councils.

Interviews using semi / structured questions were applied to gather socio-economic information from identified PAPs particularly where the project involved land take or affected properties. A tool for these interviews was a questionnaire which was complemented by a consent statement from PAPs (provided in Appendix 1). Also community leaders and representatives from relevant organizations were consulted and their views and opinions about the implementation of the project have been taken into account.

Public meetings with beneficiary communities were conducted in order to obtain their views, concerns and suggestions for improvement during implementation. Summaries of these meetings are presented in Appendix 2; full meeting minutes, including signed participants lists, all in hand-writing and Swahili, are available with PMU.

Upon visiting the various institutions concerned the E&S team collected documents that proof landownership or otherwise release of the land and handing over such sites to MWAUWASA for LVWATSAN project development; those of relevance that were collected are provided in Appendix 6.

1.6 Principles for Guiding the Preparation of this A/RAP Report

EIB's Environmental and Social Handbook (2013) provides policies, principles and standards which set out the context for the protection of the environment and human wellbeing, and which is aligned to international best practice.

Volume I of the Handbook presents ten (10) Environmental and Social Standards, of which Standard 6: Involuntary Resettlement is of particular relevance to the LVWATSAN – Mwanza Project. In undertaking A/RAP, Standard 6 states among others, the following objectives:

- Avoid or, at least minimize, project-induced resettlement whenever feasible by exploring alternative project designs;
- Avoid and/or prevent forced evictions and provide effective remedy to minimize their negative impacts should prevention fail;
- Ensure that any eviction which may be exceptionally required is carried out lawfully, respects the rights to life, dignity, liberty and security of those affected who must have access to an effective remedy against arbitrary evictions;
- Respect individuals', groups' and communities' right to adequate housing and to an adequate standard of living, as well as other rights that may be impacted by resettlement;
- Respect right to property of all affected people and communities and mitigate any adverse impacts arising from their loss of assets, or access to assets and/or restrictions of land use, whether temporary or permanent, direct or indirect, partial or in their totality. Assist all displaced persons to improve, or at least restore, their former livelihoods and living standards and adequately compensate for incurred losses, regardless of the character of existing land tenure arrangements (including title holders and those without the title) or income-earning and subsistence strategies;
- Uphold the right to adequate housing, promoting security of tenure at resettlement sites;
- Ensure that resettlement measures are designed and implemented through the informed and meaningful consultation and participation of the project-affected people throughout the resettlement process; and,
- Give particular attention to vulnerable groups, including women and minorities, who may require special assistance and whose participation should be vigilantly promoted.

- Compensation, resettlement and rehabilitation entitlements will be provided in accordance with Tanzania law and procedures as a minimum but will include additional measures to meet EIB's Environmental and Social Standard / World Bank requirements, where appropriate.

1.7 Cut-off Date

The cut-off date determines the eligibility of persons and their properties/assets. It represents the actual date that the affected assets at a particular site were inspected and recorded during the census survey. Assets like land, trees, buildings and other structures which are created or acquired by individuals or groups after the cut-off date, will not be eligible for compensation.

Due to the fact that on many locations it is not clear as yet where the interventions will be located, and therefore that PAPs cannot be identified yet, no cut-off date has been set for the works. This will need to be done by the Valuer once all PAPs have been identified (see Chapter 7 and Chapter 8).

1.8 Disclosure of A/RAP Document

For transparency, this A/RAP document shall be made available and disclosed to relevant stakeholders, inter alia, MWAUWASA, and local governments. Disclosure provides an opportunity for the public and PAPs to be aware and raise complaints, if any to the relevant authority and seek responses or clarifications with regard to disclosed A/RAP document.

2. Description of the Contract 1 Works

2.1 Data Sources

The extension and rehabilitation of water supply and wastewater system works under Contract 1 have been described in the following documents:

- **Immediate Investment Plan, Study Report Final – December 2015 (COWI)**
- **Immediate Investment Plan, Appendices – November 2015 (COWI)**

This report, and its separate volume with appendices, analyses the existing water supply and wastewater systems in Mwanza City, presents the design considerations and agreements reached, and proposes the water supply and wastewater works that will be implemented as part of the IIP for Mwanza City.

- **Tender Documents: Immediate Investments in Mwanza City: water supply, wastewater and sanitation – April 2016 (COWI)**

These consist of five volumes as follows:

  - Volume I – Bidding Procedures
  - Volume II – Technical Specifications
  - Volume III – Conditions of Contract and Contract Forms
  - Volume IV – Bill of Quantity
  - Volume V – Drawings

- **Tender Documents: Addendum 1 – April 2016 (COWI)**

This Addendum provides changes in Volume I, III and V of the Tender Documents, however for the purpose of the present report these are not of relevance.

2.2 Main Contract Components

Contract 1 consists of a number of 'bills' that are spelled out in Volume IV of the Tender Documents, Bill of Quantity, and these bills are numbered from A to F as listed in Table 2-1.

Table 2-1. Main bills in the Bill of Quantity (Vol IV) of the Tender Documents of April 2016

Nr	Bill	Relevance for the present A/RAP report (Y/N)
A	Preliminaries and Generals	No
B	Water Supply Works	Yes
C	Wastewater Works	Yes
D	Supply of O&M Equipment	No
E	Miscellaneous Works	No
F	Day Works and Provisional Sums	No

Only bill B and C are of relevance to the present A/RAP report; all other bills (A, D, E and F) comprise activities or items that will not or that reasonably speaking cannot be expected to result in any people that will or may be negatively affected by the contract interventions. The following sections deal therefore with Bill B (water supply works) and Bill C (wastewater works) only. Each of these bills contains a large number of items (e.g. pipes of a certain length and diameter; volume of concrete or earthworks; system parts, etc.) but only those items are mentioned in the following sections that, again reasonably speaking, possibly or potentially could result in Project Affected People (PAP).

2.3 Bill B: Water Supply

Bill B of the Contract distinguishes extension (enlargement) and rehabilitation (replacement of parts) of existing water supply systems.

2.3.1 Extension Works

These works comprise extension to six (6) hilltop areas, where people are living but who do not have piped water supply. Infill pipes will be constructed in the Makongoro area to narrow the reticulation and improve the supply.

Table 2-2. Main components of the water supply extension works of Contract 1

Item	B1 Kitangiri	B2 Nyasaka	B3 Mjimwema / Nyakabungo	B4 Capri Point	B5 Bugarika	B6 Nyegezi	B7 Makangoro infill	Total
HDPE pipe (m)	11,130	19,690	9,150	1,200	12,580	12,610	2,000	**68,360**
Steel pipe (m)	510	840	300	180	180	960	180	**3,150**
Cust pipe (m)	16,800	31,600	53,250	1,300	36,350	22,250	1,000	**162,550**
Trench exc cust (m^3)	6,048	11,376	19,170	468	13,086	8,010	360	**58,518**
Trench exc pipes (m^3)	11,205	19,749	9,102	1,385	12,285	13,658	2,056	**69,440**
Water Tank (nr)	1	1	1	1	1	1		**6**
Load from site (m^3)	423	460	690	98	310	690		**2,671**
Water Tank 2 (m^3)		1			1			**2**
Load from site (m^3)		460			602			**1,062**
Pump Station (nr)	1	1		1		1		**4**
Load from site (m^3)	182	182		24		182		**570**

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

In the seven areas listed in Table 2-1 in total more than 68 km of HDPE and more than 3 km of steel pipes will be installed, ranging in diameter from DN (diameter nominal) 50-250 mm. Most of these pipelines, if not all, will be buried in normal soil, rock, tarmac and gravel roads in trenches up to 1.5 m deep, and backfilled with excavated or imported material. It is foreseen that in total 70,000 m^3 will need to be excavated for these pipes.

An additional 162 km of narrower DN25 HDPE piping (25 mm) will be needed for customer connections, for which an additional 58,000 m^3 needs to be excavated to create at least 600 mm wide and deep trenches.

In total eight (8) Water Storage Tanks (WST), ranging from 45 m^3 to 1,200 m^3, will be built in the seven areas concerned, as well as four (4) Pump Stations (PS). Each of these constructions will require land plots (usually rocky hilltops) that measure between 120 m^2 and 1,063 m^2 – which is comparable to imaginary plots of 11x11 to 33x33 m, respectively. Excavation works on these construction sites would

result in another 1,630 m^3 of excavated material that need to be transported from the sites and deposited elsewhere.

Area-wise the following main components will be implemented.

(a) Hilltop extension areas – The six hilltop areas that have been agreed with MWAUWASA for urgent connection are:

- **Kitangiri:** Gravity from the existing Kitangiri tank to serve low areas and pumping to a proposed storage tank to serve high areas. Total lengths of non-customer (HDPE and steel) pipelines: 11,640 m. Construction of one (1) 500 m^3 reservoir, and one (1) Pump Station – see Table 2-3.
- **Nyasaka:** Pumping from the existing DN200 pipeline at Nyasaka area to two new storage tanks located at Nyasaka and Zenze sub-wards. Total lengths of non-customer (HDPE and steel) pipelines: 20,530 m. Construction of two (2) 600 m^3 reservoirs, and one (1) Pump Station – see Table 2-4.
- **Mjimwema/Nyakabungo:** Gravity from the existing DN300 DI pipe from Nyanshana storage tank to supply directly the Nyakabungo distribution lines and to the proposed storage tank at Mjimwema area. Total lengths of non-customer (HDPE and steel) pipelines: 9,450 m. No PS required. Construction of one (1) 1,200 m^3 reservoir – see Table 2-5.
- **Capri Point:** Taping on the existing DN150 near the Capri Point water treatment plant and pump to a proposed storage tank in Capri Point. Total lengths of non-customer (HDPE and steel) pipelines: 1,380 m. Construction of one (1) 45 m^3 reservoir, and one (1) Pump Station – see Table 2-6.
- **Bugarika:** Gravity line from the existing DN300 DI pipe from Nyanshana located near Bugando tank to the proposed two tanks, one located at the village centre and the other on a small hill in Bugarika area. Total lengths of non-customer (HDPE and steel) pipelines: 12,760 m. No PS required. Construction of two storage tanks, one of 800 m^3 and the other for 300 m^3 – see Table 2-7.
- **Nyegezi:** Pumping to a proposed storage tank to supply the area. Taping the Nyegezi tank outlet pipe DN500 near the Nyegezi tank. Total lengths of non-customer (HDPE and steel) pipelines: 13,750 m. Construction of one (1) 1,200 m^3 reservoir, and one (1) Pump Station – see Table 2-8.

(b) Infill pipes

Beside the replacement of existing pipes in the Makongoro zone, it is planned to install 2,000 m of infill pipes aiming at reducing length of customer connection pipes often responsible for major quantity of Non-Revenue Water (NRW) – see Table 2-9.

Total estimated water supply extension cost: EUR 3,650,000.

Total new customers: some 20,000 households.

Table 2-3. B1: Main components of the water supply extension works for Kitangiri

Nr	Item	Unit	Total
1	HDPE pipe DN60 to DN160	M	11,130
2	Steel pipe DN65 to DN150	M	510
3	HDPE pipe DN25 for customer connections	M	16,800
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	6,048
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, rock and gravel road	m^3	11,205
5	Reinforced concrete Water Storage Tank - 500 m^3 , plot size 656 m^2 (= about 25 x 26 m)	-	1
5a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	423
6	Pump Station, plot size 330 m^2 (about 18 x 18 m)	-	1
6a	Load surplus excavated material and remove from site	m^3	182

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-4. B2: Main components of the water supply extension works for Nyasaka

Nr	Item	Unit	Total
1	HDPE pipe DN50 to DN200	M	19,690
2	Steel pipe DN80 to DN200	M	840
3	HDPE pipe DN25 for customer connections	M	31,600
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	11,376
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, rock, tarmac and gravel road	m^3	19,749
5	Site 1: Reinforced concrete Water Storage Tank - 600 m^3 , plot size 708 m^2 (= about 26 x 27 m)	-	1
5a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	460
6	Site 2: Reinforced concrete Water Storage Tank - 600 m^3 , plot size 708 m^2 (= about 26 x 27 m)	-	1
6a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	460
7	Pump Station, plot size 330 m^2 (about 18 x 18 m)	-	1
7a	Load surplus excavated material and remove from site	m^3	182

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-5. B3: Main components of the water supply extension works for Mjimwema & Nyakabungo

Nr	Item	Unit	Total
1	HDPE pipe DN63 to DN250	M	9,150
2	Steel pipe DN80 to DN250	M	300
3	HDPE pipe DN25 for customer connections	M	53,250
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	19,170
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, rock and gravel road	m^3	9,102
5	Reinforced concrete Water Storage Tank for Mjiwema - 1200 m^3 , plot size 1063 m^2 (= about 32 x 33 m)	-	1
5a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	690

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-6. B4: Main components of the water supply extension works for Capri Point

Nr	Item	Unit	Total
1	HDPE pipe DN63 to DN110	M	1,200
2	Steel pipe DN50 to DN100	M	180
3	HDPE pipe DN25 for customer connections	M	1,300
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	468
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, rock, tarmac and gravel road	m^3	1,385
5	Reinforced concrete Water Storage Tank - 45 m^3 , plot size 346 m^2 (= about 18 x 19 m)	-	1
5a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	98
6	Pump Station, plot size 120 m^2 (about 10 x 12 m)	-	1
6a	Load surplus excavated material and remove from site	m^3	24

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-7. B5: Main components of the water supply extension works for Bugarika

Nr	Item	Unit	Total
1	HDPE pipe DN63 to DN250	m	12,580
2	Steel pipe DN100 to DN250	m	180
3	HDPE pipe DN25 for customer connections	m	36,350
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	13,086
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, rock, tarmac and gravel road	m^3	12,285
5	Site 1: Reinforced concrete Water Storage Tank - 300 m^3 , plot size 576 m^2 (= about 24 x 24 m)	-	1
5a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	310
6	Site 2: Reinforced concrete Water Storage Tank - 800 m^3 , plot size 818 m^2 (= about 28 x 29 m)	-	1
6a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	602

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-8. B6: Main components of the water supply extension works for Nyegezi

Nr	Item	Unit	Total
1	HDPE pipe DN63 to DN250	m	12,610
2	Steel pipe DN200 to DN250	m	960
3	HDPE pipe DN25 for customer connections	m	22,250
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	8,010
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, rock and gravel road	m^3	13,058
5	Site 1: Reinforced concrete Water Storage Tank - 1200 m^3 , plot size 1063 m^2 (= about 32 x 33 m)	-	1
5a	Load excavated materials wheel deposit it in spoil heaps away from site.	m^3	690
6	Pump Station, plot size 330 m^2 (about 18 x 18 m)	-	1
6a	Load surplus excavated material and remove from site	m^3	182

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-9. B7: Main components of the water supply for Makongoro infill

Nr	Item	Unit	Total
1	HDPE pipe DN63 to DN90	m	2,000
2	HDPE pipe DN25 for customer connections	m	1,000
3	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	360
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, tarmac and gravel road	m^3	2,056

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

2.3.2 Rehabilitation Works

The rehabilitation works comprise the following components:

- Replacement of pipes (B8-10)
- Replacement of valves, hydrants and meters (B11)

- Replacement of mechanical equipment (B12)
- Replacement of electrical equipment (B13).

For the purpose of the present A/RAP report only pipe replacements are considered because the other components (B11-13) cannot expected to impose any negative impact on people.

The main pipe replacement works for existing water supply systems and related items agreed for IIP are as is indicated in Table 2-10.

Table 2-10. Main components of the water supply rehabilitation works of Contract 1

Item	B8 Makongoro	B9 Nyakato	B10 Kenyatta Road	Total
HDPE pipe (m)	8,280	5,950	1,540	**15,770**
Customer HDPE pipes (m)	4,000			**4,000**
Trench excavation for customer connections (m^3)	1,440			**1,440**
Trench excavation pipes (m^3)	8,029	2,308	1,779	**12,116**

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

In total 15.7 km of OD (outside diameter) 63-315 mm piping will be replaced, requiring the excavation of more than 12,000 m^3 of soil/rock, as well as 4 km of customer piping DN25 (requiring another 1,440 m^3 trench digging). Area-wise these works comprise the following:

- **Makongoro zone:** 8,280 m pipe replacements. Replacement of the existing old pipeline with different sizes (OD50 to 90) with bigger diameters pipeline (OD63 to 160) – see Table 2-11
- **Nyakato zone:** 5,950 m pipe replacement. Replacement of the existing OD225 HDPE pipeline with OD315 HDPE pipeline – see Table 2-12.
- **Kenyatta Road (Mkuyuni zone):** 1,540 m pipe replacement. Replacement of the existing OD250 PVC pipeline with OD250 HDPE pipeline – see Table 2-13.

Table 2-11. B8: Main components of the water supply pipe replacement for Makongoro

Nr	Item	Unit	Total
1	HDPE pipe DN90 to DN200	m	8,280
3	HDPE pipe DN25 for customer connections	m	4,000
3a	Trench excavation for customer connections not less than 600 mm width and 600 mm depth	m^3	1,440
4	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, tarmac and gravel road	m^3	8,029

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-12. B9: Main components of the water supply pipe replacement for Nyakato

Nr	Item	Unit	Total
1	HDPE pipe DN315	m	5,950
1a	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, tarmac and gravel road	m^3	2,308

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-13. B10: Main components of the water supply pipe replacement for Kenyatta Road

Nr	Item	Unit	Total
1	HDPE pipe DN250	m	1,540
1a	Pipeline trench excavation, bedding, backfilling with imported material, compaction, road reinstatement and landscaping – total up to 1.5 m deep in normal soil, tarmac and gravel road and road access	m^3	1,779

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

2.3.3 Total Costs

Total costs for the water supply extension and rehabilitation works (Bill B) under IIP for Mwanza City were estimated in COWI's Study Report of December 2015 at EUR 7,493,000.

2.4 Bill C: Wastewater

Bill C of the Contract distinguishes extension (enlargement) and rehabilitation (replacement of parts) of existing sewerage systems.

2.4.1 Extension

(a) Sewers

Sewers will be extended to areas where simplified sewerage will be installed with the potential of connecting up to 80,000 people:

- Mabatini A (school): 1.73 km of pipe, 37,000 people and Mabatini B (police station): 0.45 km of pipe, 2,100 people – see Table 2-14.
- Kilimahewa 0.84 km of pipe, 9,600 people – see Table 2-16.
- Isamilo: 0.9 km of pipe, 17,500 people – see Table 2-15.
- Igogo 0.45 km of pipe, 14,000 people – see Table 2-17.

Table 2-14. C1: Main components of sewer pipeline extension at Mabatini A & B

Nr	Item	Unit	Total
1	Corrugated HDPE pipe ID225 & ID300	m	2,181
2	Heavy duty CI manhole	pcs	47
3	uPVC pipe OD140 house connections incl. fittings, 10 m per connection	m	1,000
4	Trench excavation	m^3	4,100
5	Excavate, supply and install precast inspection chamber (connection manhole) with concrete manhole cover	pcs	174

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-15. C2: Main components of sewer pipeline extension at Kilimahewa

Nr	Item	Unit	Total
1	Corrugated HDPE pipe ID225	m	843
2	Heavy duty CI manhole	pcs	17
3	uPVC pipe OD140 house connections incl. fittings, 10 m per connection	m	400
4	Trench excavation	m^3	1,710
5	Excavate, supply and install precast inspection chamber (connection manhole) with concrete manhole cover	pcs	70

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-16. C3: Main components of sewer pipeline extension at Isamilo

Nr	Item	Unit	Total
1	Corrugated HDPE pipe ID300	m	907
2	Heavy duty CI manhole	pcs	22
3	uPVC pipe OD140 house connections incl. fittings, 10 m per connection	m	400
4	Trench excavation	m^3	1,800
5	Excavate, supply and install precast inspection chamber (connection manhole) with concrete manhole cover	pcs	88

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

Table 2-17. C4: Main components of sewer pipeline extension at Igogo

Nr	Item	Unit	Total
1	Corrugated HDPE pipe ID225	m	452
2	Heavy duty CI manhole	pcs	12
3	uPVC pipe OD140 house connections incl. fittings, 10 m per connection	m	200
4	Trench excavation	m^3	990
5	Excavate, supply and install precast inspection chamber (connection manhole) with concrete manhole cover	pcs	40

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

(b) Network Rehabilitations

- Installation of a new pipe along the Kenyatta road to connect two manholes and further replace existing pipeline with a large pipe along the NSSF Tower towards the roundabout.
- Rehabilitation of cracked manholes and replacement of manhole covers.
- Installation of a new pipe at Makongoro/Balewa to avoid polluting the river with sewage near central pump station. Further, and an additional pipe is added to replace the entire rusty steel pipe.
- Supply of interceptors for house connections for trapping sand before it enters the sewer pipeline along Rufiji and Mkanyenye.

Table 2-18. C5: Main components of sewer pipeline replacement in Kenyatta and Makongoro Road

Nr	Item	Unit	Total
1	Corrugated HDPE pipe ID300 and ID600	m	392
2	HDPE PE pipe OD630	m	18
3	Steel pipe DN700	m	16
4	Heavy duty CI manhole	pcs	10
5	Trench excavation	m^3	1,600
	Excavate, supply and install precast inspection chamber (connection manhole) with concrete manhole cover	pcs	

Source: IIP/Tender Documents Contract 1: Bill of Quantity (Vol IV, April 2016)

(c) Grit Chambers

Removal of grit with grain size >0.25mm. Two channels will be constructed in parallel:

- Capacity of grit chamber at Kirumba with two channels in operation, width 1.15 m, length 6.0 m.
- Capacity of grit chamber at Mwanza South with two channels in operation, width 0.9 m.

(d) Pump Station Rehabilitations

- Supply and installation of one new pump at each pump station of same type and capacity as the existing ones.
- Supply and installation of three new check valves in each pump station.
- Supply and installation of manometer and flow meter at Central PS.
- Rehabilitate outlet control chamber at Central PS.

(e) Wastewater Treatment Plant Rehabilitation

- Proper installation of polyethylene sheet liner in one pond at the plant.
- Removal of sludge from the anaerobic ponds to sludge drying beds

(f) O&M Equipment

- Flow meter for installation in sewers – 100 l/s
- Mobile submersible sludge pumps 150 mm, 60 m^3/h, 35 m
- Mobile (diesel) dewatering pumps 100 mm, 75 l/s / 10 m and 40 l/s /20 m
- Mobile (diesel) generator 40 kVA
- Rotor machine
- Trailer mounted sewer jetting machine
- Safety equipment: safety belts, gas detector, eye protector, coats, gloves etc.

- Rodding sticks
- Portable grass cutting machine and mobile grass cutting machine

2.4.2 Costs

Total costs for the wastewater works (Bill C) under IIP for Mwanza City were estimated in COWI's Study Report of December 2015 at EUR 2,077,000.

2.5 Phasing and Timing

Timing of the works for Contract 1 is presented in Figure 2-19. As can be noted, 'pipe route marking', essential for PAP identification, has not started yet which had at time of writing of this report already resulted in a delay of two (2) months.

Table 2-19. Timing of the works for Contract 1

4 #01 (ICB): IIP MWZ WS&WW	987 day	Wed 09/03/16	Wed 04/12/19
4.1 #01 Pre-tender Preparation	52 days	Wed 09/03/16	Fri 13/05/16
4.2 #01 Tender Period	33 days	Fri 13/05/16	Tue 28/06/16
4.3 #01 Tender Evaluation	83 days	Tue 28/06/16	Tue 18/10/16
4.4 #01 Negotiation and Mobilisation	115 day	Thu 24/11/16	Fri 28/04/17
4.5 #01 IIP MWZ WS & WW RAP & Valuation	125 day	Mon 30/01/17	Wed 19/07/17
4.5.1 Pipe route marking	7 days	Mon 30/01/17	Mon 06/02/17
4.5.2 PAPs identification	7 days	Tue 07/02/17	Tue 14/02/17
4.5.3 Interim A/RAP preparation	23 days	Wed 15/02/17	Fri 17/03/17
4.5.4 Interim A/RAP Review and Approval of non PAP affected area	22 days	Mon 20/03/17	Tue 18/04/17
4.5.5 Final PAPs Census & Valuataion of affected assest by LGAs	10 days	Thu 25/05/17	Wed 07/06/17
4.5.6 Updating of A/RAP following SC/Contractor modifications	1 wk	Thu 25/05/17	Wed 31/05/17
4.5.7 Final A/RAP Submitting to MoWI	0 days	Wed 07/06/17	Wed 07/06/17
4.5.8 A/RAP Revew & Approval by MoWI	10 days	Thu 08/06/17	Wed 21/06/17
4.5.9 Release of fund and compensation process	7 days	Thu 22/06/17	Fri 30/06/17
4.5.10 Monitoring & reporting of the A/RAP implementation	13 days	Mon 03/07/17	Wed 19/07/17
4.6 #01 IIP MWZ WS & WW ESMP	396 day	Thu 25/05/17	Thu 29/11/18
4.6.1 Monitoring of & reporting on ESMP implementation	18 mon	Thu 25/05/17	Thu 29/11/18
4.7 #01 18m Construction & 12m Defects	660 day	Thu 25/05/17	Wed 04/12/19
4.7.1 #01 (ICB) IIP WS&WW Construction	396 day	Thu 25/05/17	Thu 29/11/18
4.7.1.1 Non PAP affected areas (duration assumed)	14 mon	Thu 25/05/17	Mon 30/07/18
4.7.1.2 PAP affected areas (duration assumed)	4 mons	Tue 31/07/18	Thu 29/11/18
4.7.2 #01 (ICB) IIP WS&WW Defects	12 mon	Fri 30/11/18	Wed 04/12/19

Source: Joint Implementation Plan (JIP), April 2017

3. Policy, Administrative and Legal Framework

3.1 Tanzanian Government

Development and implementation of the LVWATSAN – Mwanza Project is a response to a number of international and national policies adopted by the Government of Tanzania that have been outlined in other project documentation, such as:

- Agenda 21 of the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992;
- National Environmental Policy of 1997;
- National Water Policy of 2002;
- National Land Policy of 1997;
- National Human Settlement Development Policy of 2000.

These have resulted in or trigger a number of laws, relevant for LVWATSAN, including and chronologically the following:

- Land Ordinance of 1923;
- Land Acquisition Act of 1967;
- Graves Removal Act No. 9 of 1969;
- Wildlife conservation Act of 1974;
- Local Government (District Authorities) Act Cap 287 of 1982;
- Land Act of 1999;
- Village Land Act of 1999;
- Land Regulations (including assessment of the value of land for compensation) of 2001;
- Land Disputes Courts Act No. 2 of 2002;
- Occupation health and Safety Act No. 5 of 2003;
- Environmental Management Act Cap 191 of 2004;
- Urban Planning Act No. 8 of 2007;
- Land Use Planning Act No. 6 of 2007;
- Water Resources Management Act No. 11 of 2009;
- Water Supply and Sanitation Act of 2009;
- Public Health Act of 2009.

The most relevant for the present A/RAP report are elaborated upon in the following sections.

3.2 Constitution and Key Policies and Acts

Constitution – Provides for basic rights of the country's people, including the rights of citizens to own property and disallows the deprivation of one's property held in accordance with the law, unless the owner is fairly and adequately compensated. Article 24 (1) says: Every person is entitled to own property and has a right to the protection of his/her property held in accordance to the law". The sub-article (2) further provides that;

"….. it shall be unlawful for any person to be deprived of property for the purposes of nationalization or any other purposes without the authority of the law which makes provision for fair and adequate compensation".

National Land Policy of 1997 – Provides guidance and directives on land ownership and tenure rights (equitable distribution of land, access to land by all citizens, rights in unplanned areas) and taking of land and other land based assets. The policy and the Land Laws emanating from it stipulates organization and procedures for valuing assets, delivery of compensation and land disputes resolution. The overall aim of the policy is to promote and ensure a secure land tenure system in Tanzania that protects the rights in land and resources for its entire citizen. It addresses the various and ever-changing land use needs in Tanzania and in this context, the policy is relevant to LVWATSAN – Mwanza project.

National Water Policy of 2002 – Its objective is to develop a comprehensive framework for sustainable management of the national water resources. In this case the policy recognizes the need to protect water sources from pollution and environmental degradation as well as equitable uses among sectors. The policy recognizes the role of agriculture as one of the key sectors in country's socio-economic development.

Land Act Nr. 4 of 1999 – Provides basic legal requirements in relation to land other than village land, the management of land, settlement of disputes and related matters. The Land Act seeks to achieve the following objectives:

- To ensure that existing rights and recognized longstanding occupation or use of land are clarified and secured by the law
- To facilitate an equitable distribution of and access to land by all citizens
- To regulate the amount of land that any one person or corporate body may occupy or use
- To ensure that land is used productively and that any such use complies with the principles of sustainable development.

The Act demands that any person or institution whose right of occupancy or recognized long-standing occupation or customary use of land is revoked or otherwise interfered with to their detriment should be paid full, fair and prompt compensation. In addition, the Land Act (Section 151) states that the Minister "may create rights of way which shall be known as public rights of way" to serve for the purpose of the proposed development. Regarding the application for a Way-Leave the Act establishes that:

- Except where the Commissioner is proposing of his own motion to create a Way-Leave, an application from any ministry or department of Government, or local authority or public authority or corporate body shall be made to the Commissioner;
- The applicant shall serve a notice on:
- All persons occupying land under a right of occupancy over which the proposed Way-Leave is to be created, including persons occupying land in accordance with customary pastoral rights,
- All Local Government Authorities (LGA) in whose area of jurisdiction the proposed Way-Leave to be created is located,
- All persons in actual occupation of land in an urban and peri-urban area over which the proposed Way-Leave is to be created and,
- Any other interested person.

Section 156 of the Act requires compensation to be paid by non-governmental corporate bodies, institutions or groups of persons to any person for the use of land of which he/she is in lawful or actual occupation. These include:

- Any damage suffered in respect of trees, crops, and buildings,
- Damage due to surveying or determining the route of that Way-Leave and,
- Acquisition of land for the purpose of a Way-Leave.

As far as the proposed LVWATSAN project will require land for construction of water intakes, sludge treatment plants and way-leave for water pipes distribution, all anticipated damages have been accommodated in this A/RAP.

Land Regulations of 2001 – Provide guidance on the issue of compensation and according to Section 10 (1) of the Land (Compensation Claims) Regulation 2001, compensation shall take the form of:

- Monetary compensation,
- Plot of land of comparable quality, extent and productive potential to the land lost,
- A building or buildings of comparable quality, extent and use comparable to the building or buildings lost,
- Plants and seedlings and,
- Regular supplies of grain and other basic foodstuffs for a specified time.

The Regulation defines the basis for calculating compensation or any land being the market value of such land. The assessment of the value of land and any improvements will be done by a Qualified Valuer and verified by the Chief Valuer of the Government or his/her representative.

In addition, the Regulation defines affected persons that are eligible for compensation / resettlement if some of their properties are affected by a proposed development:

- Holder of right of occupancy,
- Holder of customary rights and who is moved or relocated because his/her land becomes granted to another person,
- Holder of land obtained as a consequence of disposition by a holder of granted or customary right of occupancy but which is refused a right of occupancy and,
- Urban or peri-urban land acquired by the President.

If the person does not agree with the amount or method of payment or is dissatisfied with the time taken to pay compensation, s/he may apply to the High Court for redress. If proved justifiable, the High Court shall determine the amount and method of payment, determine any additional costs for inconveniences incurred, and order the plaintiff to be paid accordingly.

Land Disputes Courts Act No. 2 of 2002 – Every dispute or complaint concerning land shall be instituted in the Court having jurisdiction to determine land disputes in the given area (Section 3). The Courts of jurisdiction include:

- Village Land Council
- Ward Tribunal
- District Land and Housing Tribunal
- High Court (Land Division)
- Court of Appeal of Tanzania.

The Act gives the Village Land Councils powers to resolve land disputes involving village lands (Section 7). If the Council fails to resolve the dispute, the matter can be referred to the Ward Tribunal as established by the Land Act (1999) and the Village Land Act. If any dispute will arise because of this project, the provisions of this Act shall be observed.

Land Assessment of the Value Compensation – Regulations of 2001 – These regulations made under S.179, (the Land Assessment of the value of land for Compensation) Regulations, 2001 and which became operational in May 2001 provide assessment of compensation on land to be based on the following:

- Market value of the real property;
- Disturbance allowance which is a percentage of market value of the acquired over 12 months;
- Transport allowance calculated as the cost of 12 tons hauled over a distance not exceeding 20 km;

- Loss of profit or accommodation based on business audited accounts;
- Accommodation allowance which is equivalent to the rent of the acquired property per month over 36 month's period;
- Methodology of valuation of the lost assets, mode of payment, dispute resolution mechanisms;
- Agencies responsible for expropriation and implementing resettlement (including an assessment of their institutional capacity to conduct those activities);
- Gaps, if any, between national laws and other donor agencies and the mechanisms to bridge those gaps.

The other criteria include loss of profit on accommodation based on business audited accounts and accommodation allowance equivalent to the rent of the acquired property per month over a 36 month period.

The SEP and RPF provide guidance on grievance redress mechanisms and procedures that should be used for third-party settlement of disputes that may arise from resettlement. The proposed procedures are based on existing judicial recourses and traditional mechanisms for dispute settlement.

Land Acquisition Act of 1967 – Gives powers to the President to take land for public purposes when in the public interest it is necessary to do so.

The **Local Government (District Authorities) Act No. 7 of 1982** and **Local Government (Urban Authorities) Act No. 8 of 1982** stipulate the functions of District / Urban councils. Issues of land are included as objectives of functions and therefore part of the mandates of local government in their respective areas.

The prices for cash crops will be determined as the average value over the previous year, corrected for inflation. The prices for subsistence crops will be determined as the highest value over the previous year, corrected for inflation. Crop values will be determined based on a combination of staple foods and cash crops. Specifically, the 80/20 ratio of land that a farmer typically has in food crops and cash crops is used to determine the chances s/he would lose food crop rather than a cash crop income. Another way of valuing agricultural production is through the value of stable crops to be taken as the highest market price reached during the year. This is based on three factors:

(i) Although most farmers grow staple crops mainly for home consumption, they always have the option of selling these crops to take advantage of the market;
(ii) Farmers most often purchase cereals when they have run out, during the "hungry season" when prices are high. Compensating at a lower value might put the individual or household at risk.
(iii) Averaging the highest price of stable foods yields a high per hectare value that reimburses for the vegetables and other foods that are commonly inter-cropped with staples, but are almost impossible to measure for compensation.

Graves Removal Act No. 9 of 1969 – Provides for the removal of graves from land required for public purposes. Subject to section 3 of this Act, where any land on which a grave is situated is required for a public purpose, the Minister may cause such grave and any dead body buried therein to be removed from the land and, in such case, shall take all such steps as may be requisite or convenient for the reinstatement of the grave and the re-interment of the dead body in a place approved by him for the purpose.

3.3 EIB's Environmental and Social Standards / World Bank Involuntary Settlement

The LVWATSAN – Mwanza project activities are mainly subject to EIB's Environmental and Social Standards (6) / World Bank's OP 4.12 on Involuntary Resettlement since the majority of the project is financed by the European Investment Bank (EIB) and the Agence Francaise du Development (AFD). The policy aims at ensuring that PAPs are compensated, assisted in resettlement and in their efforts to improve

their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. According to the World Bank OP 4.12, involuntary taking of land may result in:

- Relocation or loss of shelter;
- Loss of assets or access to assets; or
- Loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or
- The involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons

The overall objectives of the policy on involuntary resettlement are the following:

- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs;
- Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons relocated by the Project to share in Project benefits. Relocated persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs;
- Relocated persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of Project implementation, whichever is higher.

The World Bank Operational Policy 4.12 (paragraphs 15 and 16) recognizes that while non-landowners may have no right to compensation for the loss of land that they are occupying, they should be provided with certain resettlement measures, provided that they occupy the project area prior to a specified cut-off date. Such measures include compensation of crops or assets on land only excluding compensation of affected land, where appropriate to ensure that their livelihood is at least restored or improved regardless of ownership.

This A/RAP has been implemented as per the World Bank Operation Policy 4.12 on Involuntary Resettlement that includes effecting compensation at full replacement cost to eligible PAPs unlike the Rules of the GoT which only consider market value and or depreciation of assets.

3.4 Alignment of Tanzanian Laws and EIB Standards

As outlined in Section 1.3, above, the Project's Resettlement Planning Framework (RPF), formally endorsed by the Ministry of Water and Irrigation (MoWI) on 8 January 2016, is elaborating on national laws, mainly the Land Act, EIB's Standard 6, and the 2015 Resettlement Management Framework (RMF) of the MoWI which takes into account the Word Bank's OP/BP 4.12 on involuntary resettlement. The RPF for LVWATSAN will apply throughout the preparation and implementation of the project. The RPF provides among others:

- Key social impacts related land acquisition that were identified during project preparation;
- Guiding principles reflecting the policies of the Government of Tanzania, EIB and World Bank;
- Overview of national policy and laws on land rights and acquisition;
- The institutional framework and organizational responsibilities over social safeguards and operationalization of the various provisions outlined in the RPF;
- Guidance on implementation of the RPF;
- A synopsis of the main stakeholders involved in the project;
- Overview of socio-economic requirements for any land acquisition
- Methods for valuing assets and eligibility criteria for compensation, including an entitlement matrix;
- Overview of budgets and sources of funding;

- Monitoring and evaluation framework.

3.5 Project Administration and Institutions

The institutions responsible for the implementation of these instruments are the Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA), the Bukoba Urban Water and Sanitation Authority (BUWASA) and the Musoma Urban Water and Sanitation Authority (MUWASA). The MoWI has oversight and quality control roles during implementation of the project.

Other key organizations that are involved in the preparation and implementation of the project are these:

- Regional and District Commissioners
- District Councils
- Wards and Village Authorities
- Tanzania Regional Roads Agency.

4. Socio-economic Baseline Data

4.1 Mwanza

Mwanza is in size the second largest town in Tanzania and is the Regional Headquarters for Mwanza Region. Mwanza is the key industrial and commercial centre in north-western Tanzania. In addition to many light and service industries, Mwanza accommodates large water-intensive industries including textile mills, leather tanning factories, bottling industries, vegetable oil factories, fish processing plants, soft drink manufacturers and cosmetic/soap factories. There are numerous institutions including hospitals, dispensaries and health centres as well as many primary and secondary schools and a university.

The Mwanza urban area comprises two districts i.e. Nyamagana and Ilemela. According to the countrywide 2002 census, the area of the two districts including rural and semi-rural areas had a population of 476,000. The census in 2012 stated that the population had reached 706,000. Located on the southern shores of Lake Victoria, some 72% are supplied with water and 23% are using sewerage services from MWAUWASA, the Mwanza Urban Water and Sewerage Authority.

The city is characterised by gently undulating terrain with isolated hill masses and rock inselbergs. It is also characterised by well-drained sandy loamy soil generated from coarse grained cretaceous rock. The vegetation cover is typical savannah with scattered tall trees and tall grass. Administratively, the city is run by councillors under leadership of the Lord Mayor. However, the day-to-day administration of the city is by the City Director, assisted by heads of departments and sections.

Many people in Mwanza live in unplanned settlements. These settlements, apart from lacking basic facilities like roads, schools and water, are located on steep rocky hills where providing basic sanitation is difficult. In recent times housing in Mwanza City has extended further and further up the hills in an uncontrolled manner. This has created numerous problems such as improper wastewater disposal. In such areas conventional sewer systems are difficult to establish and maintain due to the rocky nature, steep slopes, problematic pipe alignments due to uncontrolled house layouts, etc.

4.2 Socio-economic Environment in Pilot Areas

The socio-economic conditions in three LVWATSAN - Mwanza Project pilot areas have been studied and documented by UN-Habitat in the following publications:

- *Baseline Survey for Sanitation Component of EIB-AfD Project (Kilimahewa A, Kilimahewa B, Mbugani, Igogo: Mwanza Tanzania) – Draft Report* (107 pp), May 2015
- *Participatory Community Mapping and Community Led Self Enumerations in Mwanza Informal Settlements* (63 pp) – Draft, undated

The number of households, families and people living in the these pilot areas as recorded during a community self-mapping program organized by UN-Habitat is presented in Table 4-1.

Table 4-1. Population in the three pilot areas as recorded during a community self-mapping exercise

Name of Settlement	Total # of households numbered	Total number of Families	Average# of families per house/Structure	Total Number of Persons	Average # of persons per house/structure
Nyamanoro (Kilimahewa)	912	2,157	2.3	7,284	7.9
Mbugani (Unguja)	992	2,685	2.7	8,168	8.2
Igogo (Kwimba)	439	1,669	3.8	5,101	11.6
Total	*2,343*	*6,511*	*2.9*	*20,553*	*9.2*

Source: UN-Habitat - undated

Key findings as stated in UN-Habitat's Baseline Survey report are the following:

- *"Poverty rates. Absolute poverty rates in the three informal settlements are significantly higher than the national average.*
- *Formal access to water supply in the three counties was optimal as majority of the household could water from their neighborhood.*
- *Over 88% of households in the region have incomes below the traditional poverty line of $1.25 per day. This indicates that many of the households in the region operate at a very rudimentary subsistence level.*
- *Households rely on multiple sources of income to support their endeavors. A large portion, however, still rely on outside remittances to fund their activities particularly under emergency situations.*
- *The majority of the households in our survey (over 90%) had a mobile phone.*
- *Formal sector penetration for credit is still low in the region at about 35%. Almost 70% of households had primary level of education.*
- *Challenges to increase access to water and sanitation services included uncertain climatic conditions, lack of conventional security, limited knowledge of business/income generating activities and high poverty rates.*
- *Although reasonable interest rates were perceived to be important, fast loan processing was identified as the most important product characteristic for households in Mwanza informal settlement. Preferred banks included NMB, CRDB and*
- *Access to formal sewerage system in all the three informal was lacking or nonexistence and only available households living near the main roads.*
- *Sanitation levels in schools was low as many schools share limited latrines with one or more schools.*
- *Hygiene levels in schools were low as existence of hand washing facilities was very limited and few schools had access to it."*

Based on these key findings UH-Habitat recommended the following to increase access to finance in the project region:

- *"The project should develop a comprehensive targeted initiative to support the very poor households in the region that constitute over 88% of the total population (those earning less than $1.25 per day)*
- *In all the project regions, Mbugani, Igogo, Kilimahewa A, Kilimahewa B, large segments of the adult population are surviving on casual employment and self-employment from. A key aim for this project should be to permanently remove a segment of this population from poverty by improving their access sanitation facilities. The project aim should be to pilot specific initiatives that can be scaled up over time and allow a large segment of this population to access better water and sanitation services."*

UN-Habitat's Participatory Community Mapping Report concluded:

"Mwanza informal settlements just like any other informal settlement are not an exception to the slum deprivations of water, sanitation, insufficient living area, security of tenure and poor structural quality of the dwellings. However, observation as well as results from household baseline has shown that at least 74% of the total slum populations has permanent structure houses, which makes Mwanza slums an exemption.

Accordingly, the priorities of informal settlers are derived from their deprivation and lack of basic needs. In all the informal settlements of Mwanza namely Kilimahewa, Kwimba and Unguja neighborhoods, the list of agreed priorities include the urgent need for adequate safe drinking/piped water, toilets and drainage facilities (improved sanitation facilities), improved accessibility (roads), proper solid and liquid waste management, environmental sanity, land tenure, decent housing, commercial and service establishments as well as community facilities.

Main challenges include lack of sewerage system and infrastructures, lack of water and water provision infrastructures, inaccessibility i.e. no roads, waste and storm water stagnation onto the ground, poor toilet facilities, poor sanitation and hygiene practices, poor standard of septic and soakage pits, disposal of solid waste in the streets, un-healthy and poor sludge management, environmental pollution, lack of awareness on environmental sanitation and protection, littering, lack of temporary solid waste collection sites, open defecation, deforestation, poor toilet facilities and lack of storm water drainage system.

The suggested solutions include construction of sanitation and water supply distribution network, sensitize and educate community on sanitation and hygiene, allocate areas for temporary solid waste collection sites, construction of access roads, enforce the environmental laws, introduction of community cleaning programs, mobilization of community to build temporary toilets among others.

Key findings shows that the most urgent needs include provision of water and sanitation; the need for proper sludge management and solid waste handling and disposal, the need for accessibility through improved roads and paths. Though adequate housing for some informal settlers is a great need, most people have permanent structures. Again security of land tenure was rarely noted as an issue although it is a key determinant of access to public services in an urban setting.

In summary, the three neighborhoods of Kilimahewa, Kwimba and Unguja are made up of 20 553 people which provide shelter to 6,511 families. There is a total of 2,343 houses, with an average number of families per house/structure of 3, whilst the average number of persons per house/structure. Considering the living conditions of the whole community, this is a typically poverty stricken settlement especially when we focus on the quality of living conditions, drainage, sanitation and water facilities. With a strong participation of all who are involved, a likely solution to these issues may be reached."

4.3 Land Ownership and Tenure Systems in Tanzania

All land in Tanzania is nationalized and it is public land vested the President as a trustee on behalf of all citizens. There are three (3) types of land in Tanzania, namely;

1. General land – vested under the President of United Republic of Tanzania and administered by the Land Commissioner;
2. Reserved land – this is mainly under the authority of institutions like National Parks, Game Reserves, etc.;
3. Village land – This is mainly demarcated for the established village and administered by the respective village governments.

Within these types of land, there are several forms of land tenure such as right of occupancy, recognized long standing occupancy, customary tenure and illegal land occupancy.

4.3.1 Formal Tenure – Right of Occupancy

The government permits the leasehold on land and individuals can apply for a formal right of occupancy and pay annual rent fee. The right of occupancy is granted by the President for three (3) different periods of 33 years, 66 years, and 99 years.

4.3.2 Informal Tenure – Recognized Long Standing Occupancy

This form applies to individuals in the urban or per-urban areas that occupy land for a period of not less than three (3) years. In this regard, these persons deem rights of occupancy as residential licensees.

4.3.3 Informal Tenure – Customary Tenure

This form primarily exists in the demarcated villages and is administered by a village government.

4.3.4 Informal Tenure – Illegal Occupancy

Individuals that occupy land in rural areas for a period of not less than three (3) year deem the right of occupancy.

4.4 Topography and Land Use

The locations for the proposed works (water supply extension and rehabilitation of pipelines) are generally on sloping rocky terrain, and have sandy loamy soils that are well-drained. Most of the proposed works (water supply extension and rehabilitation works) are typically located in densely populated and informal settlements. Existing water supply pipes that will be rehabilitated or extended are mostly located underground, usually on the reserves of the existing roads with few laid in the mid of the existing roads.

5. Stakeholder Consultation

5.1 Stakeholder Engagement during ESMP Preparation

Public consultation activities were conducted by the consultant in the period June-November 2015: all targeted interventions sites were visited and local residents, local authorities (city and municipality councils, ward leaders) were consulted by providing them with relevant information on the project and the proposed interventions, obtaining their views on possible issues and their involvement in planning and operation of the planned facilities. Issues discussed with the consultees included the perceived positive impacts (water supply, improved sanitation conditions, the possibility of improved roads for operation and maintenance of the systems, increased property value, employment and skills) as well as their concerns. The latter included expected hindrance from the construction works, such as noise, dust, soil pollution and soil erosion; improper interference of workers with residents particularly the youth; and influx of infected workers (HIV/AIDS risks). To the extent possible these concerns have been addressed in the design and management plans. The consultations also resulted in that privately owned land plots on which three of the water tanks will be built have been released, and made available for the constructions.

People and organizations consulted, as well as minutes of consultation meetings and land release letters were included in the ESMP, in its appendices 3, 4 and 5, respectively.

5.2 Stakeholder Consultation after ESMP Preparation

Further stakeholder consultation in the targeted Contract 1 implementation areas in the period November 2016 to January 2017. The following activities were carried out.

The preparation of the A/RAP was participatory involving various stakeholders i.e. persons and institutions that have interest in the planning and execution of the project, including those positively and negatively affected. The stakeholders consulted were officials from Mwanza City Council, Ilemela Municipal Council, Ward Councilors, WEOs, MEOs and the project communities. The stakeholder consultations helped in the determination and identification of impacts and their significance as well as mitigation measures as represented in the Table 5-1 below.

Various approaches were employed by the E&S team during the stakeholders' consultation process. These include consultative and participatory meetings, interviews, discussions and administering of questionnaires. For proper project information dissemination, the E&S team in conjunction with MWAUWASA organized an advocacy meeting with project community leaders at MWAUWASA Water Treatment Plant, Capri Point Grounds aiming at introducing the project to these leaders for easy conveying the information to their respective communities. Subsequently, consultative meetings were held at the community levels for receiving their views and concerns regarding the project (see Figure 5-1 and 5-2 for pictures of community consultations, GRM Members as part of the consultation exercise).

Among others, the public meetings conducted entailed the following:

- Inform PAPs about the project activities, impacts and project period;
- Identifying potential PAPs and their consent on voluntary land take by the project;

- Establish Grievance Redress Mechanism (GRM) Committee which is gender sensitized amongst the community members.

During the meetings, the E&S team explained what was entailed in the project proposal and envisioned social and environmental impacts. After presentations, questions and opinions were invited from the participants. In general there was no dissenting opinion about the proposed project. At the end of meetings it was confirmed that all participants in principle agreed with the proposed project.

The minutes of the meetings were prepared and signed by the village government chairmen/persons and the E&S team. For clarity and understanding of the meeting proceedings by the local community, the minutes were prepared in Kiswahili. Summaries of the meetings conducted are presented in Appendix 2.

Table 5-1. Comments and responses during consultative meetings

	View /Concerns from the Community	Remark/Action by the Consultant
1	Easy access to safe and clean water	The community will receive reliable water supply after the completion of the WS rehabilitation.
2	Short distance e.g. for women to fetch water	Time saving for other activities.
3	Labour force (employment)	The project will provide the temporary jobs to the local residents and hence, enhance the local economy.
4	Increase customers connections to the water supply (distribution) network	The main objective of LVWATSAN is to increase the coverage of water provision to the people.
5	People who will voluntarily release their portions of lands have to be prioritized for free in-house connection	The contract has considered free and full supply of materials, installations and connection to new customers about 3,231.
6	Existing water system at Capri-Point is sufficient; the new WS system has to extend to some areas with little or no WS network	The design has put into consideration for this project design alternative.
7	The project period for the contract 1: WS and WW Ext. and Rehabilitation Works	The original contract period is 12 months (works) and 6 months (defects). However, this period may be subject to contract extensions due to unforeseen events/other reasons.
8	The probability of getting water to other areas while the tank location is within Nenetwa (low level in elevation) you could put it near Kilimahewa area which will ensure enough water supply	The tank location (Nenetwa) has proper pressure command to all water points as per design, decision on where to locate tank is a technical issue tank can be miles away and yet available pressure will be sufficient to consumers in the targeted area.
9	The land owner for the proposed ST location has not yet compensated	The land acquisition for the proposed ST location is on-process by borrower/MWAUWASA. PMC will assist in follow-ups the land acquisition procedures as per RPF.
10	Multiple incidences of water related diseases/water borne diseases e.g., typhoid, diarrhoea, cholera, etc due to inaccessibility to clean and safe water	The accessibility to safe & clean water will prevent the eruption of these diseases.
11	The loss of land for the proposed pipeline route when crosses the farms/plots	The proposed pipeline route reserve is about 2 ft or 600mm in width and depth of not more than 1m. The other activities may continue after pipeline route being laid.
12	The minor affected properties e.g., building annexes, verandas, etc	The community agreed to release the route reserves without compensation for the proposed pipeline route. These affected persons to sign the consent forms for voluntarily allowing the project.
13	Community leaders participation in the project	The meeting advised the leaders to fully participate in the project.
14	Dissemination of the project information to the entire community as some could not attend the introductory meetings	The endorsed meeting minutes to be circulated into several meetings at mtaa levels for the proper understanding of the project by the community.
15	What can be done to control the water price as it might turn to be a burden to most community members fail to buy water	Water tariffs is normally regulated by the responsible authority (EWURA) with the involvement of all stakeholders therefore the project can not in any way lead to increase of tariffs without public notice and concert.
16	Traditional low-impact technologies (heat/fire) may be used to crush rock	Good point, to be considered by the Contractor as an alternative to use in sensitive areas.

Figure 5-1. Consultation meetings that were conducted for the preparation of the present report


Consultative meeting at Kitangiri community


Acceptance of project by Kitangiri community


Consultative meeting at Nyegezi community


Acceptance of project by Nyegezi community


Consultative meeting with Nyakato community


Consultative meeting with Mjimwema community

Figure 5-2. Establishment of Grievance Redress Mechanism committees


GRM Committee for Bugarika WS Ext. Project


GRM Committee for Mji Mwema WS Ext. Project


GRM Committee for Nyasaka WS Ext. Project (Only Kangaye “A” Community)


GRM Committee for Kitangiri WS Ext. Project


GRM Committee for Nyegezi WS Ext. Project

6. PAP Assessment

6.1 PAP Definition

The MoWI-endorsed Resettlement Planning Framework (RPF) of January 2016 defines *Project Affected People* (PAP) as:

> *"All persons who lose as a consequence of the LVWATSAN-Mwanza Project ownership of and/or access to all or part of their physical assets, which include their homes, tenancy, productive lands, commercial properties, income earning and subsistence opportunities, cultural sites, communities, as well as social and cultural networks and activities. The impacts may be permanent or temporary. This includes all members of a household (women, men, girls, boys, incl. several generations in the cases of extended households); the owner and employees of a business; tenants; land owners and share croppers; informal settlers (i.e. lacking formal titles); holders of customary land rights; informal business operators and their employees/assistants."*

This means that in principle all people living in the targeted Contract 1 implementation areas might potentially be affected by the project interventions: *positive* – by improved water supply and health and sanitation conditions, and *negative* – as people may lose permanently or temporarily access to part of their land or be affected in their businesses, even if they do not possess a formal title for the land that they are using or occupying.

Potentially there is an issue here in that MWAUWASA engineers accompanying PMC staff during field verification activities, and consulted Mwanza town planners as well, tend to consider people that illegally or without a land tile occupy a plot of land are not entitled to compensation – which contradicts the RPF (Section 8.1.3, page 46).

6.2 Project Activities That May and May Not Generate PAPs

As outlined in Section 2.2, above, only interventions that are part of Bill B (water supply) and Bill C (wastewater) may potentially result in people being negatively affected by the works, particularly those that take space, either above, on or below the ground surface, and either temporarily or permanently. These interventions comprise the following:

1. Installation of all distribution pipe systems, including manholes and inspection chambers, whether for water supply or sewerage, as these may cut through physical assets or affect access. Most of these systems will be buried underground and therefore the impacts will in most cases be temporary.
2. Construction of water storage tanks and pump stations as these structures require a plot of land up to a 1,000 m^2, which would be equivalent to a plot of about 30x30 m. Most of these plots are located on inhabited rocky hill tops (the water tanks) that usually cannot be considered as 'productive lands' but occasionally these plots are being used to some extent for some form of subsistence.
3. Temporary storage or permanent deposits of excavated materials (sandy soil, rock, discarded pipes and equipment) in case these sites affect physical assets or access.
4. Construction sites and workers' camps and parking lots of vehicles and machinery in case these affect physical assets or access.

It is not expected that the very substantial lengths of customer pipe connections will result in any PAPs as these pipes are all of a small diameter (25 mm) and most of these pipes will be buried in customer plots themselves, and therefore in the framework of the present report these are not further considered.

It is assumed that the Contractor will temporarily store or permanently dispose of excavated materials on sites that have been designated or decided upon by MWAUWASA and/or other local authorities and that such sites are chosen in a way that physical assets of and access for people, whether temporarily or permanently used, will not be affected.

Construction sites are expected to result in substantial impacts, mostly traffic disruption, which needs to be managed by the Contractor, and supervised by the Supervising Consultant, in a way as to minimize or avoid such impact as much as possible. Likewise, workers' camps and vehicle parking lots are to be selected in a way that physical assets and access will not be affected.

This means that the key interventions that may potentially result in PAPs are the installation of pipe systems and the construction of water storage tanks and pump stations. All other activities and items of the Contract 1 bills are reasonably speaking not expected to result in people being affected.

6.3 RPF and Design Limitations

With respect to the pipe systems and water storage tanks and pump stations that will be constructed under Contract 1, the MoWI-endorsed Resettlement Planning Framework (RPF) of January 2016 and the COWI designs and tender documents of April 2016 show for the assessment of PAPs a number of significant limitations.

The agreed and endorsed RPF states among others the following:

- *"Once the final engineering designs are complete a census will be undertaken in the project affected area. The final designs should identify broadly where there will be land acquisition and affected persons. The cut-off date for eligibility of compensation assistance will be set once the census begins".*
- *"Once the final designs and cut-off date have been agreed, the process of gathering data on affected persons will take place".*
- *"Where a sub-project triggers the need for a RAP this will be prepared by the relevant Water Utility Company".*
- *"All compensation and social assistance that project affected persons are eligible for, needs to be offered and completed prior to any land acquisition takes place".*
- *"The constructions cannot start if the RAP has not been fully implemented".*

Limitations of COWI's designs include:

- Contrary to statements in the RPF, the final designs/tender documents (FD/TD) do not indicate where there will be land acquisition and affected persons.
- The FD/TDs do not indicate precisely where the constructions will be located, particularly the water supply and sewerage networks. Although the main routing of these systems is indicated in the FD/TDs, these do for example not indicate whether the pipes will be laid on the right or left side of the road, or anything in between.
- Moreover, the FD/TDs do not describe the methodology with which these distribution networks will be constructed, for example whether or not blasting techniques will be used to create trenches with required depth in the rocky terrain, and of relevance especially in Mwanza City as blasting implies high risks for PAPs.

Therefore, the exact routing of the distribution network pipes and the methodologies used will be decided by the Contractors, and this means that PAPs can only be determined during the construction phase.

Hence A/RAPs can only be finalized during construction and therefore the procedure outlined in the RPF (preparing and implementing A/RAPs prior to construction) is deemed unfeasible.

6.4 Information Required to Identify PAPs

To be able to identify PAPs for the kind of interventions that will be conducted for Contract 1, particularly the distribution networks, detailed maps are needed showing the location of houses, land ownership (plot boundaries), public paths, planned location of pipes, chambers, steps, path crossings, etc. in a large scale (e.g. 1 : 100), construction methodology, excavation spoil disposal sites. Although during the EIB/AFD progress mission of early-December 2016 it was decided and agreed that COWI would prepare detailed such design maps and issue these in early-January 2017, at time of writing this A/RAP report these maps had not been received as yet.

6.4.1 Preliminary Census Survey Data Register

Meanwhile, in the absence of detailed information on where the pipe systems will be installed, PMC has conducted a preliminary PAP survey during which all planned pipe routes have been walked, and four (4) PAP risk classes for all pipe lengths have been determined. Information has been stored in a digital Data Register that will be shared with and handed over to the Contractor and Supervising Consultant as soon as these have been mobilized.

This data register was developed by the E&S team by walking along all pipe sections (Start-to-End Nodes as per COWI design) with the help of handheld GPS and blown-up A0 pipeline layout maps. This process helped in the identification of PAP risk areas for all WS extension and rehabilitation works of Contract 1.

6.4.2 Risk Level Classification

The following PAP risk levels for areas where the Contract 1 WS works will be carried out were distinguished:

- **High Risk –** Pipeline through narrow passage between existing buildings - potential cracks/demolition when rock blasting/vibration is applied (red highlighted)
- **Medium Risk –** Pipeline crossing people's plots or lands leading to loss of land or assets (blue highlighted)
- **Low Risk –** Pipeline crossing households/commercial premises within road reserve (green highlighted)
- **No Risk –** No households/business premises nearby (grey highlighted)

6.4.3 Final Decision on Location of Pipelines

Once Contractor and Supervising Consultants have been mobilized (expected for March 2017) a joint party consisting of the Contractor, Supervising Consultant, MWAUWASA and PMC's E&S team need to decide in close consultation with the local communities concerned where exactly the pipes will be installed, and in such a way that PAPs are as much as possible avoided, or negative impacts minimized.

6.5 Impact Scenario's and Compensation Requirements

The MoWI-endorsed RPF presents four (4) impact scenarios that may be triggered by the project interventions in the Contract 1 project sites (Table 6-1).

Note is taken of the fact that the RPF is inconsistent as its Table 8-3 in Chapter 8 erroneously states that for Scenario 2 a RAP *is* required, while the RPF states elsewhere that no RAP is needed.

Whether the less-than-10% rule applies is not easy to assess as documented information on plot boundaries may not be readily available, and/or people may not have a land tile (yet) so that individual plot boundaries cannot be determined. However, as most plots that may be affected are of substantial dimensions whereas pipe diameter is relatively small, it is expected that most cases are within (i.e. less

than) the 10% rule. This would not require the preparation of a RAP (>200 persons affected) or ARAP (< 200 persons affected).

Table 6-1. Impact scenarios and RAP requirements

Impact Scenario	Level of impact	Conclusion
Scenario 1 Pipelines run through land underground, temporary affect of small portion of plot, no existing structures affected	Minor (less than 10% of land affected)	RAP not required
Scenario 2 Pipelines run through land over ground, permanently affecting a small portion of plot, no existing structures affected, income not significantly affected	Minor (less than 10% of land affected	RAP not required
Scenario 3 Water treatment works or other water + sanitation structure significantly affecting plot and income, no existing structures affected	Significant (more than 10% of the land affected and where it is no longer viable	RAP required
Scenario 4 Water treatment works or other water + sanitation structure significantly affecting plot and income, existing structures affected	Significant (more than 10% of land affected and / or physical assets affected	RAP required

Source: MoWI-endorsed RPF, January 2016

However, the RPF provides in its Section 8.1.3 compensation requirements for lost land (minor, less than 10% affected), and distinguishes two options:

- ***Option 1: Right of occupancy, recognized long standing occupancy, or customary land tenure –*** *"Where less than 10% of the land is acquired, project affected persons and households with right of occupancy, recognized long standing occupation, customary land tenure, or claims to land that are recognized by the national laws would receive cash for the land and crops using replacement cost methodology."*

- ***Option 2: Illegal occupancy – "****Affected people that are occupying the land illegally (i.e. squatters, but not all informal settlements are living illegally) are eligible for the replacement cost of the affected crops and compensation for lost income but not the land itself."*

The question is here thus whether residents have right of occupancy or whether they are occupying the land illegally. To be able to answer this question, and to identify compensation needs, it is needed to determine:

- Where exactly the constructions will be established (outcome of the Contractor's survey)
- Whether the land occupant has land rights or is illegally occupying the lands (to be done by ….?)
- How much land is lost per land occupant (by an independent valuer), and
- The compensation needs (by an independent valuer).

Whatever the outcome of this assessment it will be clear that resolving the above would be a laborious and time-consuming process, which -as per RPF requirements- as long as this has not been concluded would stop the Contractor from proceeding with his construction activities.

6.6 Compensation for Other Assets

Potential other forms of compensation that are being considered in the RPF and that may be provided to PAPs as a result of the project interventions are included in Table 6-2, below. Based on the assessment presented it is concluded that no compensation will be needed to any of the PAPs.

Table 6-2. Forms of compensation as stated in the RPF

RPF section	Compensation for lost or affected	Likely applicability in the Contract 1 implementation areas
8.1.3	Land	Occasionally
8.1.4	Crops	Occasionally
8.1.5	Physical property	Occasionally
8.1.6	Income generation of non-land based businesses	Occasionally
8.1.7	Relocation costs	Unlikely
8.1.8	Community losses	Unlikely
8.1.9	Sacred sites	Unlikely
8.1.10	Unoccupied land	Occasionally, particularly plots for water storage tanks and pump stations
8.1.11	Vulnerable people	Possibly
8.1.12	Inflation	Possibly if compensation in cash is delayed

7. Preliminary PAP Results

7.1 General

This Chapter presents the preliminary results from the identification of PAPs associated with the implementation of the Contract 1 interventions, i.e. those resulting from the extension and rehabilitation of water supply and wastewater systems in Mwanza City. Results are presented in the same order as components given in COWI's Tender Documents of April 2016.

The following sections summarize -to the extent possible at this stage- the identified PAPs and land requirements for each project work, status of landownership, and compensation arrangements made or required. Further detail on works, PAPs, and land acquisition is provided in Appendix 5. Supporting documents have to the extent possible and available been collected and are presented in Appendix 6.

PAPs identified within the present report are individuals, usually the family head. As the RPF considers family members also as PAPs this will -in most cases- increase the number of PAPs accordingly. However, based on an average family size of 5-6 in Tanzania, it is assumed that the total number of PAPs associated with the Contract 1 project works in Mwanza City will not exceed 200, i.e. the limit below of which an ARAP suffices. [2]

Damage caused during construction works – Accidental damage which may occur during construction works, for example to structures such as buildings, infrastructure, trees, fences, etc. will be dealt by the Contractor in collaboration with the developer, and cannot be considered within the framework of the present report due to the unknown about whether this will happen and if so, where and when.

7.2 PAP Risk Areas

7.2.1 Water Supply Extension and Rehabilitation Works

As noted earlier, due to the lack of detailed design maps that depict the exact location of particularly the pipe systems in Mwanza City, it was not possible to determine PAPs on the basis of the design information alone. Therefore, the E&S Study Team embarked on a PAP risk area survey in the company of an engineer of MWAUWASA; results are presented in Appendix 9.

Distribution networks were to the extent necessary and possible driven-by and/or walked-by, and all water storage reservoir and pump station sites were visited. Four (4) classes of risk levels were determined (Section 6.4.2 and Table 7-1).

[2] The difference between an ARAP and RAP report is explained on page 90 of the RPF: both have the same structure (but "appropriate and proportionate to the magnitude of resettlement impact provoked") but in the case of an ARAP only a summary of socio-economic data is required.

Table 7-1. Preliminary results of PAP risk area survey in Contract 1 WS project intervention sites

Risk level	WS Extension Project Sites (% of km of pipe lengths)							WS Rehabilitation Project Sites (% of km of pipe lengths)		
	B1 – Kitangiri	B2 – Nyasaka	B3 – Mjimwema /Nyakabungo	B4 – Capri Point	B5 – Bugarika	B6 – Nyegezi	B7 – Makongoro Infill	B8 – Makongoro Zone	B9 – Nyakato Zone	B10 – Kenyata Road
Lengths in km	11.6	20.5	9.4	1.4	12.8	13.7	2.0	8.3	5.9	1.5
High Risk – Pipe through narrow passage between buildings	2	0	6	0	0	0	?	1	0	0
Medium Risk – Pipe potentially passing peoples plots	10	36	3	0	10	27	?	22	21	0
Low Risk – Pipe potentially through people's plot within road reserve	71	59	91	65	85	68	?	77	79	100
No Risk – No households/premises nearby	17	5	0	35	5	5	?	0	0	0
Total	***100***	***100***	***100***	***100***	***100***	***100***		***100***	***100***	***100***

Source: PMC Preliminary Census Survey Data Register, November 2016

PAP High Risk areas were only recorded in three (3) of the ten implementation areas, i.e. in Kitangiri, Mjimwema/Nyakabungo and Makongoro Zone. This is due to the fact that pipes will or may be installed in narrow passageways between buildings, and for example in rocky terrain. Under such conditions it needs to be determined first where and how precisely the pipes will be installed and whether any sort of heavy duty equipment or blasting is required. As was noted by residents in the concerned Kitangiri area, resident use traditional low-impact methods to crush rock, i.e. by using heat/fire. Engaging local people that master this methodology would increase project ownership, limit damage and reduce cost, however this method may be time-consuming as compared to Contractor's conventional construction methods.

In all ten implementation areas, the majority of the pipe systems will be installed in areas that are classified as Low Risk, for example because houses or other buildings have encroached into the road reservation and are in the way of where the pipe needs to be laid. An alternative could be to lay the pipe on the other side of the road (in case there is sufficient space), or inside the road – which would downgrade that spot or area to a No Risk zone.

As building and population density in Mwanza City is generally high, all sites need to be rechecked and it is to be decided where exactly the pipes will be installed before the final PAPs are identified.

7.2.2 Wastewater Works

The wastewater works will be constructed in five locations (Table 7-2). All will be installed mostly within existing road reservations (usually the middle of a road). Apart from unavoidable but temporary full or partial road closure, and disruption of traffic flow, these works are not expected to affect people's properties or businesses and therefore it is not expected that compensation payments will need to be paid.

Table 7-2. Preliminary results of PAP risk area survey in Contract 1 WW project intervention sites

Risk level	WW Extension Project Sites (% of km of pipe lengths)				
	C1 – Mabatini A & B Extension	C2 – Kilimahewaa Extension	C3 – Isamilo Extension	C4 – Igogo Extension	C5 – Kenyata & Makongoro Road Rehabilitation
Lengths in km	2.18	0.84	0.91	0.45	0.39
High Risk – Pipe through narrow passage between buildings	0	0	0	0	0
Medium Risk – Pipe potentially passing peoples plots	0	0	0	0	0
Low Risk – Pipe potentially through people's plot within road reserve	0	0	0	0	0
No Risk – No households/premises nearby	100	100	100	100	100
Total	***100***	***100***	***100***	***100***	***100***

Source: PMC Preliminary Census Survey Data Register, November 2016

7.3 Water Supply Works – PAP Survey Summaries

This section provides summaries of the preliminary PAP assessment that has been conducted in each of the project sites. Further detail is provided in Appendix 5 on PAPs and landownership; in Appendix 6 in supporting documents; in Appendix 9 on the PAP Risk Area Data Register; and in Appendix 10 on recommended scheduling of the construction works.

It is proposed that Contactors start with those areas that are either identified as no-risk or low-risk PAP areas, provided that no people or their assets will be adversely affected by the works (to be checked and confirmed by the Supervising Consultant). This will provide time to resolve any PAP issues in higher risk areas, if any, but no works will be implemented in any specific area as long as PAP issues (including payment of compensation, and the reporting on these) have not adequately been settled.

7.3.1 B1 – Kitangiri WS Extension

Location – In the NW of the city, varying terrain: flat, hilly, steep, rocky. Southern part densely populated, northern part sparsely.

Distribution Network (11.2 km) – About 71% of the total pipeline system to be installed is considered as a low-risk area with houses or other buildings in or near existing road reserves and 17% considered as no-risk areas as these are open spaces with not any houses or buildings nearby. About 2% (approximately 0.2 km) of the pipeline coverage is identified as a high-risk area as the proposed pipeline route will or may traverse through narrow passages between buildings and the rocky nature of the terrain where blasting or use of heavy duty equipment for the excavation works may cause cracks or other damage. Such risks will be reduced if low-impact construction methodologies are used, for example the traditional way of cracking rock by use of heat/fire. The community has suggested this method, and this would also provide some local income if residents are engaged by the contractor for this work.

About 10% of the new pipeline system to put in place is identified as medium-risk area as the proposed pipeline route will or may run through people's plots/farms, and/or existing fences. Potential PAPs will be identified by a combined party of PMU/PMC/SC/Contractor and alternative no-impact routing of pipes will be considered. If alternatives are not possible then people affected will either have to sign a no-claim statement (Appendix 1) or compensation is to be provided.

Water Storage Tank (500 m^3) in *Ibanda Ju* – The land plot required has been released to MWAUWASA reportedly but two people claim user rights which would require compensation. A formal land title deed proving ownership has not been provided yet.

Pump Station, Kitangiri – The PS will be built within the fence-enclosed existing MWAUWASA premises, meaning that no PAPs are associated with this work.

7.3.2 B2 – Nyasaka WS Extension

Location – In the NE of the city, northern part steep terrain; western part more densely populated than the east; eastern part on gently sloping terrain.

Distribution Network (20.5 km) – About 59% of the new WS system to be built is considered as low-risk with houses or other buildings within or near existing road reserves, and 5% as no-risk as due to open space with not any houses or buildings nearby. About 36% is identified as medium-risk area as the proposed pipeline route will or may traverse through people's plots and farms. Potential PAPs in this medium-risk area will be identified by the joint party of PMU/PMC/SC/Contractor and no-impact alternatives will be considered. If PAPs cannot be avoided then these need to either sign a no-claim statement, or receive compensation.

Water Storage Tank 1 (600 m^3), Nyasaka "B" – The previous landowner/user has been compensated by cash payment in mid-2016, and the plot has been released to MWAUWASA however a formal title deed has not been provided as yet.

Water Storage Tank 2 (600 m^3), Zenze – The previous landowner has been compensated by cash payment in September 2015, and land has been handed over by the local government to MWAUWASA, but a formal land title deed has not been provided as yet.

Pump Station, Nyasaka – The site for this PS is located within a fence-enclosed plot of land that is owned by the local catholic church, however the land acquisition is still in process.

7.3.3 B3 – Mjimwema /Nyakabungo WS Extension

Location – In the northern central part of the town, densely populated in hilly and rocky terrain, some parts are steep.

Distribution Network (9.4 km) – About 91% of the WS system to be installed is considered as low-risk area with houses or other buildings within or near existing road reserves. About 6% of the new pipelines will be laid in high-risk areas as the proposed pipeline route traverses through narrow passage between buildings while the ground is rocky and construction with high-impact equipment may cause damage. About 3% of the new system is identified as medium-risk as the proposed pipeline route may go through people's plots or farms. Potential PAPs located in the high- and medium-risk areas will be identified during the party of PMU/PMC/SC/Contractor that will decide on pipe routing and consider no-impact alternatives, and if this is not possible PAPs are either to sign a no-claim statement or be provided with compensation.

Water Storage Tank (1,200 m^3), in *Nenetwa* area – The current landowner has agreed to release the land but the land acquisition is still in process.

7.3.4 B4 – Capri Point WS Extension

Location – Peninsular in the western part of the city surrounded by Lake Victoria, steep and rocky, with large residential plots, hotels and company premises.

Distribution Network (1.4 km) – About 65% of the pipe that will be laid is considered as low-risk with houses or other buildings within or near existing road reserves and 35% is considered as no-risk due to open space with not any houses or buildings nearby.

Water Storage Tank (45 m^3), Capri Point – Apart from the location itself, a few hundred m south of the existing MWAUWASA premises in Capri Point there is currently no information on current landownership, or the status of land acquisition as may be required.

Pump Station, Capri Point – The PS will be constructed within the existing MWAUWASA premises at Capri Point, i.e. beside an existing water storage tank. This means that no PAPs are involved and that land acquisition is not necessary.

7.3.5 B5 – Bugarika WS Extension

Location – In the southern central part of the city; especially the northern part is densely populated; terrain gently sloping to rocky-steep; southern part is low to medium densely populated.

Distribution Network (12.8 km) – About 85% of the pipeline system to be installed is considered as low-risk with houses or other buildings within or nearby existing road reserves and 5% as no-risk (open space with no any houses or buildings nearby). About 10% of the new system is identified as medium-risk as the proposed pipeline route will or may traverse through people's plots/farms, and/or existing fences. Potential PAPs will be identified by the PMU/PMC/SC/Contractor and alternative routings will be considered, and if these are not feasible PAPs need to sign a no-claim statement or need to be compensated.

Water Storage Tank 1 (300 m^3), in *Bugarika Bendera* – The previous landowner/user has been provided with a compensation payment in March 2016, but a land title deed has not been provided yet to MWAUWASA.

Water Storage Tank 2 (800 m^3), in Bugarika – Agreement was reached in March 2016 between the local Ward Office and MWAUWASA to release the land and MWAUWASA has paid the survey costs. The land title deed process is ongoing.

7.3.6 B6 – Nyegezi WS Extension

Location – In the SE fringes of the city, variable terrain, with in the NW and SW part pockets with high population density.

Distribution Network (13.7 km) – About 68% of the new pipeline system will be constructed in low-risk areas with houses or other buildings within or nearby existing road reserves and 5% in no-risk areas as there are on open space with not any houses or buildings nearby. About 27% of the system is identified as medium-risk area (potentially traversing through people's plots or farms). Potential PAPs will be identified by PMU/PMC/SC/Contractor and alternative routings will be considered, or PAPs need to sign a no-claim statement or need to be compensated.

Water Storage Tank (1,200 m^3), at *Utemini* area – Various handing over letters have been issued, i.e. between the previous landowner/user and the local ward office, and of the latter to MWAUWAS, i.e. in the period October-December 2015, but it is not clear whether any compensation has been provided. The process of issuing a land title deed to MWAUWASA is still ongoing.

Pump Station, Nyegezi – The location of this PS is inconsistently indicated in the detailed design (i.e. *east* of the existing Nyegezi tank on the location map, and *west* of the tank on the detailed layout plan) but the site lies apparently within the existing and fence-enclosed MWAUWASA premises, which implies that there are no PAPs. No relevant landownership documentation for this work has been found.

7.3.7 B7 – Makongoro WS Infill Extension

Location – In the western part of the city near Rock City mall and the national stadium, and west of the airport road, medium population density, gently sloping terrain.

Distribution Network (2.1 km) – The detailed design enclosed in the Tender Documents of April 2016 does not provide information on where the HDPE DN63-90 (2 km) and steel DN100-250 (180 m) pipes will be installed and therefore a preliminary PAP assessment could not been conducted as yet.

7.3.8 B8 – Makongoro Zone WS Replacement

Location – As B7, in the western part of the city near Rock City mall and the national stadium, and west of the airport road, medium population density, gently sloping terrain.

Distribution Network (8.3 km) – About 77% of the pipelines to be replaced is considered as a PAP low-risk area with houses or other buildings within or nearby existing road reserves. About 1% is identified as high-risk as there is one building annex above the proposed replaceable pipeline that is to be demolished if there is no change of the existing pipeline route. About 22% of the pipeline coverage was identified as medium-risk as the proposed replaceable pipeline will or may traverse through people's existing plots. Potential PAPs will be identified by PMU/PMC/SC/Contractor and alternative routings will be considered, or PAPs need to sign a no-claim statement or need to be compensated.

7.3.9 B9 – Nyakato Zone WS Replacement

Location – In the central eastern part of the city, south of the Mwanza-Musoma road, on gently sloping terrain, with some steeper sections and rocky outcrops (e.g. Igoma Water Storage Tank); medium population density.

Distribution Network (5.9 km) – About 79% of the pipeline coverage is considered as low-risk area with houses or other buildings within or nearby existing road reserves. About 21% of the pipeline coverage is identified as medium-risk area as the proposed replaceable pipeline will or may traverse through people's existing plots. Potential PAPs will be identified by PMU/PMC/SC/Contractor and alternative routings will be considered, or PAPs need to sign a no-claim statement or need to be compensated.

7.3.10 B10 – Kenyatta Road WS Replacement

Location – Along Lake Victoria in the central western part of the town, on flat terrain along the main Mwanza-Shinyanga road.

Distribution Network (1.5 km) – The entire stretch is considered as a low-risk area with houses or commercial buildings as there is sufficient space available to lay the pipes. Due to the high traffic intensity along the main Mwanza-Shinyanga road and industrial premises the Contractor needs to plan and execute the works in such a way that access to each individual plot may partially is guaranteed at all times.

7.4 Status Summary of Land Plots Required for the WS Extension Works

Table 7.3 summarizes relevant particulars of the land plots that will be required for the above-ground facilities; these are all water supply extension works, i.e. 8 water storage tanks and 4 pump stations, 12 facilities in total.

Required plot size stems from the Tender Documents, Volume IV – Bill of Quantity, of April 2016. Largest plot size is 1,063 m^2, equivalent to an imaginary square plot of about 32 by 32 m; smallest plot is 120 m^2 (equiv. to approx. 11 x 11 m).

Three (3) of the four (4) PS will be built within existing MWAUWASA premises and do not require land acquisition, compensation or handing over.

Lands for all nine (9) other structures will have to be acquired from or handed over by the current owner/user of the land. In three (3) of those 9 cases a cash compensation payment has already been made; in one (1) case an alternative plot of land will be given to the landowner. In two (2) of these cases a compensation payment in cash still needs to be made and in the three (3) remaining cases it is not known whether a compensation payment or alternative land will be provided.

In seven (7) of the 9 cases, supporting documents have been provided or found, however in not any of the cases it is known whether compensation has been or will be made in compliance with the *Land Assessment of the Value of Land for Compensation Regulations of 2001* and the MoWI-endorsed *Resettlement Planning Framework* (RPF) which includes among other the requirement of setting a cut-off date and land to be valued by a government valuer, and reported upon, approved by the Chief Valuer.

For eight (8) of the 9 facilities that are not yet owned by MWAUWASA a formal land deed tile is being obtained, and for one (1) it is not known whether this is the case.

Table 7-3. Status of land plots required for the aboveground water supply extension facilities

Bill	Location	Work (1)	Plot size (m^2) (2)	Land owner Pre-project	Compensation given	Supporting documents	RPF (3) compliance (valuation etc)	Land title deed
B1	Kitangiri	WST (500 m^3) Ibanda Juu *	656	*Confidential* 20 x 30 m	Not yet	Yes (2015)	Not known	In process
B1	Kitangiri	PS	330	MWAUWASA	N.a.	None	N.a.	
B2	Nyasaka	WST-1 (600 m^3) "B" *	708	*Confidential* 30 x 30 m	Yes (cash) TZS 8 m	Yes (2016)	Not known	In process
B2	Nyasaka	WST-2 (600 m^3) Zenze *	708	*Confidential* 18.5 x 25 m	Yes (cash) TZS 2 m	Yes (2015)	Not known	In process
B2	Nyasaka	PS	330	Catholic church	Not yet	None		In process
B3	Mjimwema/ Nyakabungo	WST (1,200 m^3) Nenetwa *	1,063	*Confidential* 32 x 32 m	Alternative land	Yes (2016)	Not known	In process
B4	Capri Point	WST (45 m^3)	346	Unknown	Not known	None		
B4	Capri Point	PS	120	MWAUWASA	N.a.	None	N.a.	
B5	Bugarika	WST-1 (300 m^3) Bendera	576	*Confidential* 20 x 25 m	Yes (cash) TZS 3 m	Yes (2016)	Not known	In process
B5	Bugarika	WST-2 (800 m^3)	818	City Council (2007?) 2906 m^2	Not known	Yes (2016/17)		In process
B6	Nyegezi	WST (1,200 m^3) Utemini	1,063	*Confidential* 12 x 22.5 m	Handed over for free	Yes (2015)	Not known	In process
B6	Nyegezi	PS	330	MWAUWASA	N.a.	None	N.a.	

(1) WST = Water Storage Tank; PS = Pump Station

(2) Source: COWI Tender Document (April 2016)

(3) RPF = Resettlement Planning Framework

* Land plot survey payment made by MWAUWASA

8. Inventory and Valuation of Assets

This Chapter is to be written and provided by the Valuer – details are provided in the MoWI-endorsed Resettlement Planning Framework of January 2016.

9. Institutional Responsibilities for Implementation

9.1 Overall Project Organization and Implementation Arrangements

Whilst the Ministry of Finance (MoF) is the 'borrower' of the loan, the Ministry of Water (MoW) is the 'Promoter' and has the ultimate ownership of the project. Execution at local level rests with the three water utility and sanitation companies, namely the Mwanza Urban Water Supply & Sanitation Authority (MWAUWASA); the Bukoba Urban Water and Sanitation Authority (BUWASA); and, the Musoma Urban Water and Sanitation Authority (MUWASA).

MWAUWASA, BUWASA and MUWASA effectively act as the implementing agencies on the ground, charged with the responsibility of delivering upon this project's and this Framework's stated commitments within their respective territorial jurisdictions. MWAUWASA bears the additional responsibility for execution at the three satellite towns of Magu, Lamadi and Misungwi. The Ministry of Water is charged with the oversight of execution and the provision of enhanced technical assistance, as required, in Bukoba and Musoma, as well as carrying the responsibility to supervise execution across the entire project.

Daily oversight of this project at the operational level is provided by the Project Implementation Unit (PIU). A Lenders' Supervisors is an additional part of the institutional structure, their role being to act as "a third party contracted by and acting on behalf of the Lenders [EIB] to monitor the Project, including monitoring physical progress and compliance, procurement supervision and quality assurance of technical solutions and physical deliverables." The lender supervisor sits alongside the PIU to review all implementation tasks. Independent monitors appointed by the EIB are not full-time but go on short missions to check compliance of the program.

The responsibility of the "Valuation Report", which is part of the A/RAP, lies with the District or Regional Government Authority.

Different institutions are involved at different levels: all Implementing Agencies; the Regional Commissioner; the District Council; the Ministry of Land and Human Settlement Development; and the Ministry of Water. Also as part of the Stakeholders are the project contractor, the RAP consultant, NGOs/CBOs and any additional project management support unit appointed by Lenders.

The role of the Regional Commissioner and the District Council lies in ensuring that the exercise is completed through the supervision of the executive officers by accompanying the municipal valuer to every land in his/her area and confirming the owners of the lands concerned.

The consultant and contractor identified the route and areas before giving it for valuation process; the District Council and the Regional Commissioner sign the valuation report document before sending it to the chief valuer for approval.

Once the Valuation Report is done, the consultant prepares the A/RAP using the RPF-LVWATSAN guidelines and once the draft document is completed, the Implementing Agency(ies) (IAs) submit the draft document to the MoWI for review and comments.

According with the WSDP DP agreements, all projects under the Program who requires a A/RAP should comply with the Environmental and Social Management Framework (ESMF) and Resettlement Management Framework (RMF) in order to comply with the national law and the World Bank Safeguard Policies.

MWAUWASA in collaboration with the District commissioner's office the Valuer and the leaders engaged in exercise of verification of the documents and payment of the affected people.

The village land committee who lead by village chairperson and village executive officer was responsible for attending all grievances during the property assessment and land assessment.

9.2 Responsibilities of Key Organisations

Without duplicating roles and creating additional bureaucracy for the program, there is a need to coordinate the resettlement and land acquisition components to ensure transparency and efficiency throughout the process.

Environmental and social safeguard measures will be implemented by the water utility companies, in collaboration with the respective local authorities, as relevant. In this spirit, the daily implementation and management of resettlement measures will fall upon each water utility company, each in its own spatial jurisdiction (where, additionally, MWAUASA will also cater for the three satellite towns). A specialist, acting as a focal person in this respect, has been nominated and shall be trained by MOWI from each water utility company. This officer will work on the RAP implementation collaborating as relevant with other local authority bodies, UN-Habitat, and other ancillary actors on the project (PIU, Lenders' Supervisors, Sanitation Task Force). Moreover, the same (or different) assigned officer in each local authority will be tasked with the monitoring and evaluation role over the RAP, and where necessary (based on whether EIB Standard 6 or WB OP.4.12 is triggered) any subsequent (abbreviated) RAPs. They will ensure all gaps are addressed by the project team, liaising with their counterparts at the Lenders' Supervisors or the Sanitation Task Force (STF), as necessary. Other specialists can be brought in over the course of implementing resettlement action plans, as and when required. All RAPs and monitoring progress reports will need to be approved and signed off by the MoWI.

The constructions works cannot start if the A/RAP has not been fully implemented.

9.3 Ministry of Water and Irrigation (MoWI)

The MoWI, as the primary promoter, and specifically the Environmental and Social Management Unit (ESMU) is responsible for endorsing the present document, as well as acting as the guarantor in terms of policy and procedural compliance, the overall coordination, monitoring and evaluation of the LVWATSAN-Mwanza Project, including the facilitation of capacity building. The MoW will furthermore ensure cohesiveness and policy alignment in terms of sector coordination across the three Urban Water Utility Authorities (UWUA), as well as the monitoring the feedback and results from the progress reports, ex-post surveys and any due diligence required from the implementation process. General program management for the full project scope will be coordinated through the Policy and Planning Division of MoWI, whilst relevant inputs regarding environmental and social compliance – as required – will be provided by the Environmental and Social Management Unit (ESMU) of the Ministry. The financial flows required under the budget of the specific A/RAPs will be based on GoT monies, to be transmitted in a timely and adequate manner via the MoW to the three UWUAs responsible for on-the-ground and day-to-day implementation of the A/RAPs.

9.4 MWAUWASA- Mwanza Urban Water and Sanitation Authority

MWAUWASA is one of the three urban water and sewerage utility service providers in the LVWATSAN-Mwanza Project and is fully autonomous. As the single one urban utility company with a significant territorial oversight that comprises the three satellite towns and the largest recipient of EIB financing for

infrastructural improvements, it is regarded as the project's secondary 'promoter'. The activities of the authority are regulated by statutory bodies established by the GoT to ensure transparency, accountability and equity in governance.

As a recipient for both water and sanitation upgrading, MWAUWASA will be responsible for managing the new infrastructure work both in Mwanza and in the three surrounding satellite settlements – as the absence of administrative authorities in certain districts within Mwanza, require MWAUWASA to provide technical and administrative oversight. MWAUWASA will manage routine operations, maintenance as well as procurement of professional services and equipment to assist in the efficient expansion of the network.

Application of social safeguards in compliance with Lenders' standards in its jurisdiction (incl. the three satellite towns) and in the context of this project and the RPF-LVWATSAN will be under the responsibility of MWAUWASA. The latter will lead the operational application and implementation of the provisions under this Framework. The support of the PIU will be drawn in this endeavor, as necessary and as stipulated in the latter's terms of reference.

9.5 Mwanza City Council

Mwanza City Council's 2013 change in their governance structure sees the formation of two councils operating within the city. Any LVWATSAN-Mwanza subproject which requires 'clearance' for upgrading will have to be approved by the relevant city authority in Mwanza. As such, the Environmental Officer within the City Council will have a pivotal role helping inform the PIU and MWAUWASA which informal areas should be selected for upgrading. Suggested criteria to this end are:

- Level of public utility services currently in the environs of the informal settlement
- Willingness of people within the community to work with public authorities
- Areas creating and susceptible to pollution
- Ability to pay for utility services
- Environmental impact of informal settlement – by doing nothing.

Collaboration with the selected NGO/CBO under the project's Stakeholder Engagement Plan (SEP) and its corresponding modalities will be critical at identifying point (2) above. Evidence from the screening exercise evinced that selected informal settlements were already mobilized and working on self-financed water and sanitation projects in their communities.

9.6 Project Implementation Unit (PIU)

The implementation of the LVWATSAN-Mwanza Project is managed by a Project Implementation Unit (PIU), the latter located in MWAUWASA. The role of the PIU will embrace both program management as well as providing critical inputs under thematic areas such as resettlement, specifically in assisting the resettlement impact screening and the elaboration of any resettlement action plans, abbreviated or full. Currently, the PIU's scope of work is geared only at the level of MWAUWASA, yet it is foreseen that technical assistance in matters of screening and A/RAP elaboration will be extended to BUWASA and MUWASA as well. However, the PIU will not have a role in resolving the complexities of land acquisition at local level, which require a participatory rather than programmatic approach to implementation.

9.7 Non-Governmental and Community Based Organizations (NGOs /CBOs)

NGOs/CBOs are valuable facilitators thanks to their outreach capacity towards communities, whether they are brought on board through the SEP or in the context of the resettlement screening exercises. It will be imperative for such engagement activities to seek to identify the communities' willingness to cooperate in the program and to facilitate their mobilization, engagement and consultation therein.

If the projects impacts are considered major, an NGO/CBO could serve well in conducting baseline surveys (a census) and a necessary inventory of assets to understand 'impact' by classifying PAPs based

on their tenure amongst other elements (see chapter 8 Methods of Valuing Assets) to determine what compensation measures would be adequate. The baseline data would feedback to the municipality and water utility provider. Outsourcing an NGO/CBO for such services would respectively befall the agencies in charge of implementing this RPF's provisions, namely the three urban water and sanitation utility companies, as per jurisdictional resettlement profiles.

10. Implementation Timetable

The timing of implementation of the A/RAP depends on a number of necessary actions that to a large extent are beyond the control of the PMC, including:

- Decision on final pipe routing by the Contractor/Supervising Consultant and PAP identification
- Determination of a cut-off date and valuation of the assets of PAPs by the Valuer, his reporting hereon, and review and approval of the report by the concerned government organisations
- Compensation payment to PAPs

Implementation of the remainder of the A/RAP process is depicted in Figure 10-1.

Table 10-1. A/RAP implementation Timetable

Year		2017												Implementing agency
Nr	Activity / Month	J	F	M	A	M	J	J	A	S	O	N	D	
1	Decision of final pipe routing and PAP identification													
1	Cut-off date													Valuer
2	Review and approval of the A/RAP Report													MoWI, MWAUWASA DCs
3	Approval of valuation report													Chief Government Valuer DC / RC
4	Compensation payments to PAPs													
5	Formation of grievance committee													
6	Training of grievance committee members													

11. Budget (Confidential)

This Chapter will provide financial detail on the compensation that has been provided and that still is to be provided for the Contract 1 project works, i.e. in Mwanza City. Information provided in this chapter is to be extracted from one or more Valuation Reports.

As it is an RPF requirement that the present A/RAP report is to be disclosed to the wider public (Section 1.6), this chapter needs to be removed before wider distribution to the public of the report.

11.1 Valuation Report X

11.2 Valuation Report Y

12. Arrangements for Implementation, Monitoring and Reporting

12.1 Next Steps

The next steps for finalization of the A/RAP process for Contract 1 are as follows:

STEP 1 – Decision on final locations of pipes – The final location of the pipes of the water supply and sewerage networks will have to be decided upon, ideally by a combined party of the Contractor, the Supervising Consultant, PMU, as well as the local community involved.

STEP 2 – Identification of PAPs – By PMU

STEP 3 – Setting the Cut-off Date and Valuation of Assets of PAPs and reporting – By the Valuer, report to be approved by the Chief Valuer (Dar es Salaam). Report findings to be included in the A/RAP report.

STEP 4 – A/RAP Report review and approval – As per the RPF requirements, the A/RAP report will be forwarded to the Mwanza City government for review and approval (the Interim A/RAP report of 15/3/2017 has been sent MC government).

Once satisfied with the A/RAP report the Mwanza City government will forward the report on together with their recommendations to the Ministry of Land, Housing and Settlements and the MoWI for their endorsement and final approval.

Compensation and resettlement plans (contracts) will be binding under statute, and will recognize that customary law governs land administration and tenure in the rural/village areas.

Further review and approval steps are given MoWI's notification of 15 February 2017, that are presented in Appendix 7.

STEP 5 – Compensation Payments – Compensation is finally handed to the beneficiary or the body responsible for resettlement i.e. the provincial water authority for payment to the PAP. All payments and transfers in kind will be made in the presence of the affected party and the city authorities. Note that some of the compensations for land take for construction of the water storage tanks have already been made.

All compensation and social assistance that project affected persons are eligible for, needs to be offered and completed prior to any land acquisition takes place.

STEP 6 – Monitoring and Evaluation – Monitoring will be ongoing from the outset. Early commencement of monitoring is essential in order that any issues are raised early on in the project.

12.2 Grievance Redress Mechanism

Grievance procedures will need to allow PAPs to go through a full agricultural season to realize their impact. Tanzania already has a linear process to manage complaints which are channeled through the local and national legislature system. This will need to be respected in light of the LVWATSAN- Mwanza

Project, as articulated across relevant provisions for tiered grievance management at project/local/national levels in the project's SEP.

Local Level Grievance Resolution – In light of the WSDP Implementation Manual Volume 6 (description of Grievance Redress Mechanism pp.90), one needs to follow the current procedures and strengthen them where possible. The grievance process should be initiated at the project outset with communities affected by the project made aware early on. Although, traditionally, "all grievances concerning non-fulfillment of contract, levels of compensation, or seizure of assets, will be addressed to the local court systems of administration, of justice in the districts" (WSDP pp.90), in order to simplify the grievance procedure, complaints will be administered, as much as possible, at the local level. The intention of retaining the complaints procedure locally, is to resolve all matters in an amicable fashion without having to go through a national legal procedure.

To facilitate communication between the applicant and authorities at a comprehensible level (i.e. given the high prevalent levels of illiteracy and poverty), a complaints procedure should begin with a verbal testimony rather than something in writing), whilst also minimizing costs. Local Leaders will record all grievances and complaints, including minutes of discussions, and the recommendations and resolutions decided. These will be issued to the water utility company and relevant local authority to resolve as a first point of call.

Such grievances between the complainant and the authorities are likely to derive from inadequate levels of compensation, non-compliance of contracts, or relocation and seizure of assets prior to – or without - compensation. If any of these occurs the complainant shall address the Local Leader. In turn the local leader can consult with the District Authority, such as a District Commissioner (DC), or District Executive Director (DED) over the validity of the claim. If the complainant's case is considered legitimate, the Local Leader will notify the complainant and they will be assisted. If, on the other hand the complainant's grievance claim is rejected by the authority, the matter shall be brought before the local courts or District Land Tribunals for settlement.

12.3 Monitoring

The overall objective of the monitoring and evaluation process is to ensure that PAPs receive full compensation and improve, or at least to restore, their living standards and former livelihoods.

The RPF informs the monitoring requirements for A/RAP reports which are a mandatory requirement of EIB-funded projects that involve land acquisition, as well as for MoWI.

Example process indicators include:

- Level of engagement with affected people;
- Number of grievances made; number of grievances rectified, and time and quality of resolution;
- Outstanding individual compensation or resettlement contracts;
- Form of compensation provided;
- Preparation and adequacy of resettlement sites;
- Level of satisfaction of affected people with the various processes and stages.
- Targets are to be based on the relevant guidance in this Framework, EIB Standard 6, MoW's 2015 RMF, and national law.

Impact Monitoring – Impact monitoring involves assessing the impact of the land acquisition and the effectiveness of the A/RAP measures against baseline indicators and targets. The impacts include the effects on living conditions and livelihoods of affected people, and also include qualitative impacts such as emotional distress. Both quantitative and qualitative indicators should be included in the monitoring of impacts. Potential impact indicators include:

For temporary acquisitions:

- Number of people affected by temporary land use changes;
- Impact of temporary land use change on income;
- Number of affected people employed by the civil works contractors.

Permanent acquisitions:

- Living standards: condition of housing; access to water and sanitation; size and quality of land.
- Livelihoods: income levels; employment opportunities generated; pre-project production versus present production (crop for crop, land for land); seasonal or inter annual fluctuation of key foodstuffs; ability of individual and families to re- establish their pre displacement activities.
- Access to services: distance to water supply; distance to employment opportunities, education and health facilities, community facilities etc.
- Social and qualitative impacts: number of people affected by community changes, number of people reporting emotional distress, qualitative attitudes towards project, community feedback.
- Targets should be guided by EIB Standard 6 , MoW 's 2015 RMF, national law, and recommendations in this Framework.

Mechanisms for Monitoring – Organizations to be involved:

A template outlining the organizations responsible for M&E is provided in the MoWI's ESMF and RMF and is replicated, with context-specific adjustments, in this instance, too.

The ESMF and RMF states that the MoWI will perform a monitoring oversight function for the LVWATSAN-Mwanza Project. This will include land acquisition and compensation. The MoWI will have responsibility for signing off monitoring reports.

Appointed focal officers within each UWUA will be responsible for the day to day monitoring and reporting of feedback throughout the life of the project, specifically the monitoring of the implementation of the (abbreviated) Resettlement Action Plans. They will oversee compliance and check whether prescribed actions and monitoring have been carried out. They will work closely with the Water Utility Companies to ensure the monitoring plan is contained in the individual project proposals and is implemented.

A local nominated NGO/CBO can prove valuable as an independent, third-party agent assisting in gathering information and reporting on monitoring, as well as working with project affected people. Project affected persons should be involved in all phases of the monitoring, including the identification and measurement of baseline indicators. Effective linkages with the provisions of the SEP are critical in this regard and highly desirable.

Staff involved in carrying out the monitoring will need to have relevant training and experience in monitoring of projects and in the likely issues that will be encountered. They should be familiar with the methods and practices of effective community consultation, and with typical methods and processes for preparing, appraising, approving and implementing small-scale community development projects.

Last but not least, monitoring functions will be additionally provided by the PIU and the Lenders' Supervisors.

Reporting – *Inception monitoring report:* It is important to review progress of the project in the early phases of implementation and make early corrections if necessary. Performance and impact monitoring should be carried out within 4 to 6 weeks after the census and inventory forms are completed in order to identify any issue early, and to identify the number of affected persons, the extent to which they are affected and whether the creation of a sub project A/RAP is required.

Monthly Progress Report: When an (A)RAP is triggered, the EIB requires a Monthly Progress Report to be completed and submitted to them. The report should be prepared by each UWUA's designated RPF-focal officer on a monthly basis until the conclusion of the RAP implementation. Thereafter, these are to be rendered on a 6-month basis. The EIB will provide closer to the time a standard template on (A)RAP monthly monitoring. The MoWI is expected to sign off on this project's reporting requirements.

Annual report: the ESMF and 2015 RMF for the Water Sector Development Program (WSDP) requires an Annual Report and Annual Review Report to be prepared at the close of each year of the program. The LVWATSAN-Mwanza Project will include a monitoring update on any land acquisition and compensation that takes place as a result of the project. This will include both performance and impact monitoring.

Annual review report: An outline of what is required in the annual review report is presented in the

ESMF. It will include:

- A review of project documentation including number of affected persons, and grievances.
- An annual survey of all affected persons, to identify the socioeconomic situation and living conditions of the affected persons. The results will need to be compared to the baseline data that was collected at the time of the cut-off date.
- Field visits of areas where affected persons are located to assess the completeness of planning and implementation work, the adequacy of social design, and compliance with this Framework and RAPs.
- Interview project and district officials responsible for sub project appraisal and approval (this will be done for the review of the ESMF as a whole) but will require consulting with the official regarding the strengths and weaknesses of the resettlement process, and areas for improvement.
- Develop recommendations for improving the performance of compensation and resettlement.

The annual survey should assess the socioeconomic situation of affected persons, the progress on compensation, and impacts of any compensation and land acquisition.

The sample indicators in Annex 10 of the RPF provide a guide as to what should be covered in the survey. Data from the annual monitoring survey should be inputted into an excel data base along with the baseline data requirements that are outlined in Chapter 7 of the RPF.

Due to the likely small number of affected persons, it should be possible to monitor the progress and impacts for every PAP, with the priority being affected persons that triggered a A/RAP. In some cases, resettlement has already taken place before the creation of this Framework. The progress and impacts of this resettlement will need to be included in the monitoring system Retrospective data collection for these affected persons may be difficult if detailed records were not collected at the time. However a census and inventory of assets, and interviews with the affected persons can be carried out in this situation in order to identify whether compensation has been in line with this RPF.

Documentation related to the project including records of numbers of affected persons, compensation, consultations, and grievances will need to be collected throughout the project.

Appendix 1. PAP Interview Form

- Introduce yourself
- Show an MWAUWASA introduction letter if required
- Explain the purpose of your visit
- Explain the general purpose of the LVWATSAN Project, with particular focus on the works in the town in which you do the consultation
- This form is to be bi-lingual (Swahili/English), and is to be signed by the PAP and yourself, and attached to the A/RAP

Town: …….

Location: …….

Date: …….

Work: …….

Interviewer: …….

Part One: Socio-Economic and Demographic Data

1. What is the level of education of the interviewee
a) Illiterate b) Primary c) Secondary d) High school e)Graduate f).Vocational g) Others (tick the answer)

2. How do you earn you income (livelihood**)**
……

3. Sex of interviewee: Female ( ), Male ( )Tick where appropriate

4. Age of Interviewee…….

Part Two: Information on the Project

1. Have you been informed about the project interventions earlier, and if so how and when?
(if not explain the purpose of the LVWATSAN project and main interventions relevant for this PAP)

- ◯ Yes, through the media
- ◯ Yes, through community meetings
- ◯ Yes, through other means: ……
- ◯ No

2. Do you know where the works will be installed at / near your house / plot of land?

- ◯ Yes, a pipeline along the road but not on my plot of land / through my house
- ◯ Yes, a pipeline along the road and on my plot / through my house
- ◯ Yes, through the access road to my plot / house but this is part of the road reservation
- ◯ No, I do not know

3. Do you know who is the owner of the land on which the works will be constructed at / near your house / plot of land?

- ◯ Yes, the local government / City Council
- ◯ Yes, it is my land but I have no title deed
- ◯ Yes, it is my land and I have a title deed (provide a copy of this deed)
- ◯ No, I do not know

4. Do you know how the work will or may affect you, your family, your house and/or your plot of land?

- ◯ Yes, the work (excavation / pipe laying / closure) will cross the access road to my house / plot
- ◯ Yes, the work will be constructed through my house / plot of land
- ◯ No, I do not know.

5. What will you do to allow the construction work to proceed near /at your house / plot of land without delay or disruption?

- ◯ I will remove anything that may be in the way of the works myself
- ◯ I will restore any damage myself
- ◯ I will not do anything

6. Do you agree with the works to proceed at / near your house / plot of land, and if not why not?

- ◯ I will allow the work to proceed as planned
- ◯ I will not allow the works to proceed as planned unless my conditions are met – these are ……..
- ◯ I will not allow the works to proceed as planned because …….

Part 3: Permanent PAPs

7. We are aware that you have been compensated by MWAUWASA /voluntarily provided your piece of land for construction of main raising tank (mention the size offered if possible) how was your family or next of keen being involved

- ◯ Informed from the beginning
- ◯ Partially involved
- ◯ Not involved at all

8. If not involved at all, how will your commitment will be affected in case anything might happen to you in the future

- ◯ There is no problem
- ◯ Some of the family members might react and revoke the agreement
- ◯ I don't know

9. If he/she said did not involve family members ask, Why you did not involve your family

- ◯ I did not think it is a must
- ◯ I did not want them to know the process….Why…….
- ◯ I don't know

10. If he or she will say the family members might revoke the agreement ask, Now what is your advice to avoid such kind of misunderstanding in the future if it may

happen……
……
……..

Part 4: Family member/next of keen of the permanent PAP

11. Are you aware of the ongoing water project in the community

- ◯ Yes, am aware
- ◯ No am not aware
- ◯ I do know

12. Were you involved when the land was provided for the project

- ◯ Yes, I was involved
- ◯ No, I was not involved
- ◯ I don't know

13. Are you satisfied that your spouse/father ….. gave away the piece of land for the community development

- ◯ Am quite satisfied
- ◯ Am satisfied
- ◯ Am not satisfied at all

14. What is your opinion to make sure that the piece of land offered to the lager community will be implemented and avoid unnecessary impact
……
……
……
……
…….....

Name interviewee: …… Signature:……

Date: ……

Name of next of Keen …… Signature:……

Date: ……

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Appendix 2. Meeting Minutes

TD Bill	Area/Date	No of people attended	What was done	Issues raised by community & general observations
B1	Kitangiri Ward – Jiwe kuu and Mihama/ (21/11/2016)	141	• The meeting was basically to introduce the LVWATSAN project to the community and chart out roles and responsibility of the community towards success accomplishment of the project, the roles were analysed one of them was availability of land to allow pipeline installation for distribution network. • Some of responsibilities mentioned by the community are full participation during project implementation, provide all needed support to make sure the project succeeds, that the project is for the community therefore belongs to them. • Also discussed the tendency of most projects delay which leads to the community lack trust to the government. • Presented a A0 blown map which the majority whom could read could see where the pipes will be passing. • Selected a committee for grievance management during project implementation.	• Worried that the new project can affect the already existing pipe networks and eventually lead to more shortage of water during construction period, therefore agreed that the community leaders and the selected committees should be informed on when the contractor will be working at a particular area that way they can help to direct and minimise damage and complaints from the community.
B2 & B9	Nyakato ward Kangaye street (4/12/2016)	211	• Introduced the project to the community presented the project map. • Discussed roles and responsibilities of different parts at the community. • Discussed the project ownership and sustainability of the project. • Issues which will affect project positively raised were discussed like the existing pipes damaged while constructing new pipelines. • To counteract this situation it was agreed that the whole exercise should be transparent and well known to the community leaders to avoid overlapping issues during construction. • Selected a committee for grievance management during project implementation.	• The community is prepared and ready for the project, land issues are mainly on distribution network some pipes will pass in some fields of land and the cut-off date for the PAPs is not yet set.
B3	Nyamanoro ward Nyamanoro mash Nenetwa, Kilimahewa A&B (11/12/2016)	130	• Introduced the project to the community, discussed issues of land take for the reservoir at Nenetwa area, the owner of the land was at the meeting, the debate with the owner was tough because issue of compensation were not clear yet, during the meeting they agreed the matter to be discussed to the district director for further discussion, the meeting was active and responded to issues. • Selected a committee to deal with grievances may during project implementation.	• Further follow-up is needed to ensure land issues for the Nyamanoro/Mjimwema scheme.
B4	Capri Point (22/11/2016)	83	• Introduced the project to the community by presenting A0 map indicating all necessary. • Discussed the positive and negative impacts of the project.	• Positive - Reliable water supply. • Negative – the environment will be disturbed.

TD Bill	Area/Date	No of people attended	What was done	Issues raised by community & general observations
			• Selected committee for grievance management during project construction period.	• People will not afford to connection costs to the new water supply. • The area where the reserve tank will be constructed is a private property who will pay for it. • There will be road obstruction during this period which will affect the movement.
B5	Mahina Ward/ Bugarika Street (26/11/2016)	266	• Introduce the LVWATSAN Project to community. • Informed the community of type of infrastructure which will be constructed by presenting a full blown map A0 for discussion. • Enquired about the community awareness on the land set aside for reserve tanks construction (2 new reservoir tanks which will be constructed at Bugarika). • Checked the land take and procedures followed to acquired it for the reservoir tanks, the village leader presented a letter dated 31/03/2016 indicating a name of Angelina Ntemi who was compensated with Tshs 3,000,000/= for the area of land taken for the construction of the reservoir tanks. • Selected a small committee responsible to deal with grievances during project implementation.	• The community is eagerly waiting for the project to start and ready to offer all kind of support to ensure success implementation. • The community was aware of the land which already the owner was paid and the documents for the payment were presented by the village chairperson. • Procedures for land acquisition has started by using internal arrangements but it is not yet known whether RPF was adhered or not.
B5	Mahina Ward/ Mahina, Ipuli and Mwananchi streets (11/12/2016)	92	• Introduced the project and show to the community the design map and where pipes will be crossing and was explained that there are pipe sections which there are pavements constructed on top of the pipes. They were informed that the lander is not going to do any kind of compensation meaning that in case there will be compensation will be taken care of by MWAUWASA/ MOWI and the municipal councils. • Informed the community that parts of pipe section will pass along farming fields and in some places people have constructed pavement blocks on top of pipe section especially area like Mwananachi. • The community asked questions on who will compensate. • Selected a small committee responsible to deal with grievances during project implementation.	• The attendance was no very good and representation of the house owners along Mwananchi area did not turn up hence likeliness of information not well captured to some of these can be a barrier during implementation, or will be covered during pipe routing verification which will be done later before construction. • Informed the community that EIB the lander is not responsible for compensation, that in case there will be such is GoT responsibility.
B6	Nyegezi ward – Kalfonia, Nkamba, Swila, and Nyabulogoya (24/11/2016)	91	• Introduced the LVWATSAN project, informed about structures which will be put in place by the project by using A0 blown up map. • Land issues were discussed some owners of the land for reserve tanks have been approached by MWAUWASA and finalization. • Community asked about quality of work assuming that some pipes might bust and	• Issues of land have been taken care of by MWAUWASA at some extent this needs further follow up by E&S team in collaboration with CLO.

TD Bill	Area/Date	No of people attended	What was done	Issues raised by community & general observations
			cause damage, responding to the question the client said the works will be highly supervised hence quality of pipes will be well controlled. • Selected a small committee responsible to deal with grievances during project implementation.	
B7 & B8	Kirumba ward – Kitangiri A, Kitangiri Kati,Kitangiri B. (25/11/2016)	35	• Introduce the project to the community, discussed issues of land especially the business areas where defected pipelines will be replace some structures indicates are constructed on top of the pipelines. • The community members attended the meeting agreed that some of structures at Kirumba and Kitangiri kati are on top of the old pipe section , agreed that no one will come out and complain because the pipe lines have been there since 1972, some of the new structures are new and have encroached the road reserve. • They selected a small committee which will responsible in coordinating all complains and find session with all who have buildings on top of the pipe section.	• Kirumba rehabilitation site include the communities under Kitangiri ward which will be part of the rehabilitation of WS. • Community is ready of the implementation. • The community leaders are cooperative though some did not attend the meeting.
B7	Kirumba ward (Ibanda juu Ibanda ziwani, Ibanda Busisi) (22/11/2016)	138	• The project was introduced to the community. • A0 maps were presented the community identified the exact areas where the project will pass. • Selected a committee for grievance management during project implementation.	• The project is long time awaited and has majority interest. • Land acquisition was raised, site for reserve tank was one of the issues raised there are some people came out claiming that they were promised to be compensated by MWAUWASA this needed follow up by CLO.
	Total	**1187**		

Appendix 3. PAP Lists and Contacts

Bill	S/No.	Name	Mobile No.
B1	GRM for Kitangiri – WS extension		
	1		
	2		
B2	GRM for Nyasaka – WS extension		
	Kangaye 'A'		
	1		
	2		
B3	GRM for Mjimwema – WS extension		
	Kilimahewa 'A'		
	1		
	2		
	Kilimahewa 'B'		
	1		
	2		
	Nyamanoro Mashariki		
	1		
	2		
	Nenetwa		
	1		
	2		
B4	GRM for Capri Point – WS extension		
	Hesawa		
	1		
	2		
	3		
	Idara Ya Maji		
	1		
	2		
	3		
B5	GRM for Bugarika – WS extension		
	Bugarika		
	1		
	2		
B6	GRM for Nyegezi – WS extension		
	Calfornia		
	1		
	2		
	Nkamba		
	1		
	2		
	Nyaburogoya		
	1		
	2		
	Swila		
	1		
	2		
	Igelegele		
	1		
	2		
	Ipuli		
	1		
	2		
	Mwananchi		
	1		
	2		

Bill	S/No.	Name	Mobile No.
B7/B8/C5	Makongoro – WS rehabilitation		
B9	Nyakato – WS rehabilitation		
B10/C5	Kenyatta Road – WS rehabilitation		
C1	Mabatini A & B – WW		
C2	Kilimahewa – WW		
C3	Isamilo – WW		
C4	Igogo – WW		
C5	See B7/B8 & B10		

Appendix 4. GRM Committee Members

Bill	S/No.	Name	Mobile No.
B1	GRM for Kitangiri – WS extension		
	1	Peter Kitali	0755 279778
	2	Gilbert Sambu	0764845242
B2	GRM for Nyasaka – WS extension		
	Kangaye 'A'		
	1	Martin Samson	0757-012962
	2	Asia Mahamoud	0763-625763
B3	GRM for Mjimwema – WS extension		
	Kilimahewa 'A'		
	1	Bakari Gumbo	0756-517435
	2	Mwajuma Mlekwa	0766-239864
	Kilimahewa 'B'		
	1	Juma Matiku	0787-912829
	2	Johari Issa	0766-572979
	Nyamanoro Mashariki		
	1	Mussa Lweyo	0784-382740
	2	Lucy Peter	0756-752314
	Nenetwa		
	1	Juma Anthony	0754-543195
	2	Samuel Zakaria	0786-223541
B4	GRM for Capri Point – WS extension		
	Hesawa		
	1	Elia Nyanguru	0766-378307
	2	Stella Juma	0785/765-608251
	3	Steven Chacha	0765-739554
	Idara Ya Maji		
	1	Beatrice Itakilowa	0759-936368
	2	Maximillian Mwita	0755-765120
	3	Benedicto Paul	0759-433592
B5	GRM for Bugarika – WS extension		
	Bugarika		
	1	Peter Matinde	0756-638575
	2	Mariam Rashid	0753-063124
B6	GRM for Nyegezi – WS extension		
	Calfornia		
	1	James Tima	0754-656912
	2	Anna Ngowi	0754-694991
	Nkamba		
	1	David F. Bagomwa	0753-809906
	2	tbd	
	Nyaburogoya		
	1	Ernest Mabeyo	0759-183160
	2	Angelina Japhet	0762-673528
	Swila		
	1	Grace Sebastian	0753-398819
	2	Lawrence Peter	0755-601770
	Igelegele		
	1	Ramadhan S. Kadeghe	0755-958845
	2	Joyce Ndalawa	0767-836738
	Ipuli		
	1	Julius Mbawa	0767-346282
	2	Mectrida Mpiru	0764-823258
	Mwananchi		
	1	Charles M. Makanya	0767618968

Bill	S/No.	Name	Mobile No.
	2		
B7/B8/C5	Makongoro – WS rehabilitation		
	……..	……..	……..
	……..	……..	……..
B9	Nyakato – WS rehabilitation		
	……..	……..	……..
	……..	……..	……..
B10/C5	Kenyatta Road – WS rehabilitation		
	……..	……..	……..
	……..	……..	……..
C1	Mabatini A & B – WW		
	……..	……..	……..
	……..	……..	……..
C2	Kilimahewa – WW		
	……..	……..	……..
	……..	……..	……..
C3	Isamilo – WW		
	……..	……..	……..
	……..	……..	……..
C4	Igogo – WW		
	……..	……..	……..
	……..	……..	……..
C5	See B7/B8 & B10		
	……..	……..	……..
	……..	……..	……..

Appendix 5. PAPs and Land Acquisition for Project Works

Bill B – Water Supply

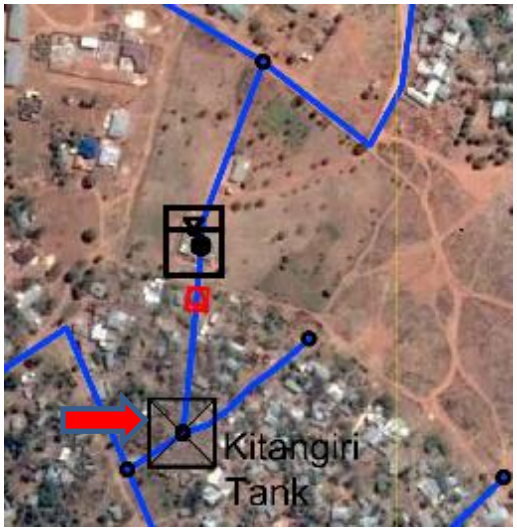
B1 – WS Extension in Kitangiri

Total pipe lengths (HDPE & steel) (m)	11,640	
Terrain	Located in the NW of the city, varying terrain: flat, hilly, steep, rocky. Southern part densely populated, northern part sparsely.	
PAP high risk (%)	2	
PAP medium risk (%)	10	
PAP low risk (%)	71	
PAP no risk (%)	17	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Water Storage Tank (500 m^3) – in *Ibanda Ju* area, Kitangiri

Item	Name	Contact
Current land owner(s)		Managing Director-MWAUWASA
From whom was the land acquired		
Date of land acquisition		
Size of the plot	656 m^2 (TD, April 2016); plot to be acquired is 20 x 30 m (Doc 2, below)	
Current plot use	Rocky hilltop, no defined use	
Copy of title deed	No title deed available. Two people claim to own the land which requires compensation.	
Details of the transaction or compensation (to be) given	In process	
To where have the previous land owners been settled?	No-one need to be resettled	
Supporting documents	Letter of Ibanda Juu to MWAUWASA of 19/10/2015 releasing the land for construction, but stating that the people using the land need to be compensated (Doc No 1 – see Appendix 6). Agreement letter between MWAUWASA and local government of 30/12/2015 on the land release (Doc No. 2 – see Appendix 6). Letter from Ilemela Municipal Council to MWAUWASA, dated 11/2/2016, on survey costs for 6 WST land plots, including this site (Doc No. 3 – see Appendix 6) Payment by MWAUWASA to City Council Director for survey costs (Doc No. 4 – see Appendix 6)	



Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

Pump Station – Kitangiri

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired	Unknown / not available	
Date of land acquisition	Unknown / not available	
Size of the plot	330 m^2 (TD, April 2016)	
Current plot use	Plot is located within the existing fenced MWAUWASA Kitangiri premises	
Copy of title deed	Not available	
Details of the transaction or compensation (to be) given	Not applicable: there is no public access possible to the site	
To where have the previous land owners been settled?	Not applicable	
Supporting documents	Not available	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

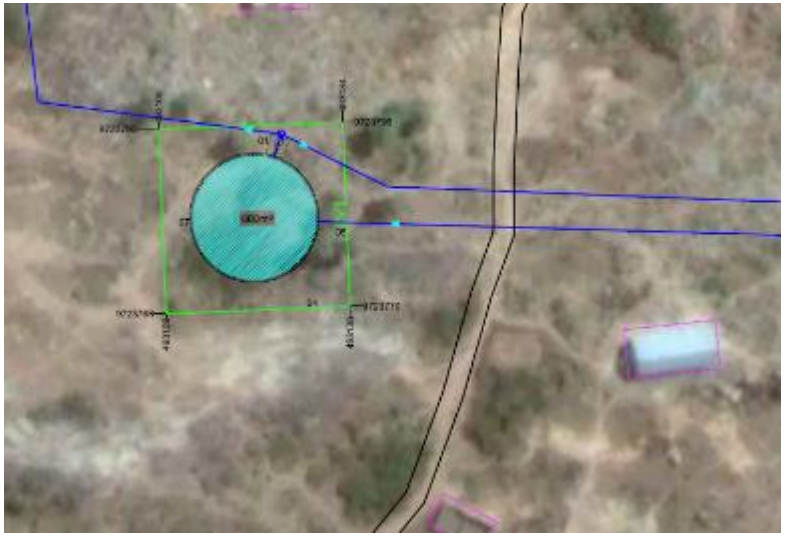
B2 – WS Extension in Nyasaka

Total pipe lengths (HDPE & steel) (m)	20,530	
Terrain	Located in the NE of the city, northern part steep terrain; western part more densely populated than the east; eastern part on gently sloping terrain.	
PAP high risk (%)	0	
PAP medium risk (%)	36	
PAP low risk (%)	59	
PAP no risk (%)	5	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Water Storage Tank 1 (600 m^3) – Nyasaka "B"

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired		
Date of land acquisition		
Size of the plot	708 m^2 (TD, April 2016); acquired plot size is 30 x 30 m (Doc 7, below)	
Current plot use	Rough open terrain	
Copy of title deed	In process	
Details of the transaction or compensation (to be) given		
To where have the previous land owners been settled?	Not applicable are no one resides on the site	
Supporting documents	Letter between Ilemela MD to MWAUWASA of 2 June 2016 stating that payment is effected for compensation of land for the Nyasaka water storage tank (Doc No 5 – see Appendix 6) Receipt of Cheque No. 973547 transacted to the previous owner, dated 14 June 2016 (Doc No. 6 – see Appendix 6), handed over to owner on 16/6/2016 Agreement of Land Acquisition between the previous owner and MWAUWASA, dated 16 June 2016 (Doc No 7. – see Appendix 6) Letter from Ilemela Municipal Council to MWAUWASA, dated 11/2/2016, on survey costs for 6 WST land plots, including this site (Doc No. 3 – see Appendix 6) Payment by MWAUWASA to City Council Director for survey costs (Doc No. 4 – see Appendix 6)	



Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

Water Storage Tank 2 (600 m^3) – Zenze

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired		0755-855640
Date of land acquisition		
Size of the plot	708 m^2 (TD, April 2016); land plot acquired is 25 x 18.5 m (Doc 8, below)	
Current plot use	Rough open terrain amidst nearby houses	
Copy of title deed	Being processed	
Details of the transaction or compensation (to be) given	Previous land owner has been compensated in cash payment	
To where have the previous land owners been settled?	Not applicable – no people had to be replaced	
Supporting documents	Agreement between Zenze and Nsumba local governments handing over the land to MWAUWASA, dated 30 December 2015 (Doc No. 9 – see Appendix 6) Letter from Ilemela Municipal Council to MWAUWASA, dated 11/2/2016, on survey costs for 6 WST land plots, including this site (Doc No. 3 – see Appendix 6) Payment by MWAUWASA to City Council Director for survey costs (Doc No. 4 – see Appendix 6)	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

Pump Station – Nyasaka

Item	Name	Contact
Current land owner(s)		
From whom was the land acquired		
Date of land acquisition		
Size of the plot	330 m^2 (TD, April 2016)	
Current plot use	Rough open terrain within fence enclosed plot of the church	
Copy of title deed	Not available yet	
Details of the transaction or compensation (to be) given	Not completed yet	
To where have the previous land owners been settled?	No one living on site, no replacement needed	
Supporting documents	No documents available	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

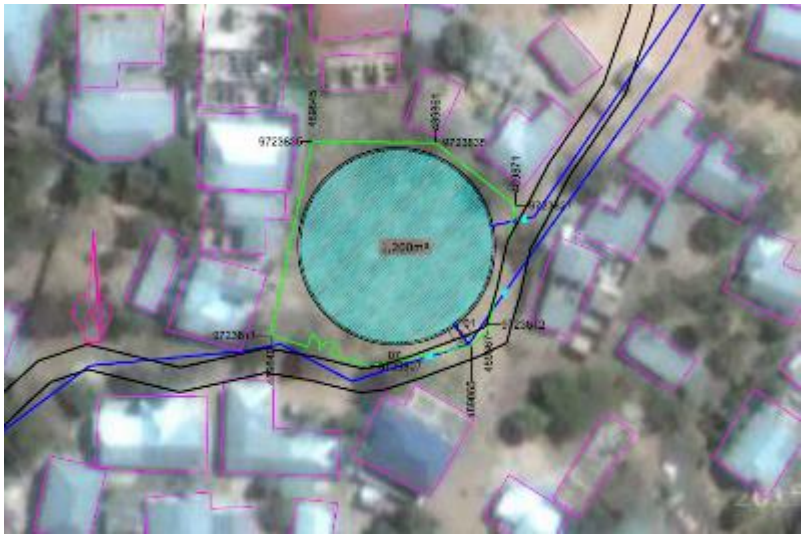
B3 – WS Extension in Mjimwema & Nyakabungo

Total pipe lengths (HDPE & steel) (m)	9,450	
Terrain	Located in the northern central part of the town, densely populated in hilly and rocky terrain, some parts are steep.	
PAP high risk (%)	6	
PAP medium risk (%)	3	
PAP low risk (%)	91	
PAP no risk (%)	0	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Water Storage Tank (1,200 m^3) – in *Nenetwa* area, Mjimwema

Item	Name	Contact
Current land owner(s)		
From whom was the land acquired		
Date of land acquisition		
Size of the plot	1,063 m^2 (TD, April 2016); required plot size is 32 x 32 m	
Current plot use	Open plot surrounded by densely built houses	
Copy of title deed	In process	
Details of the transaction or compensation (to be) given	Replacement land will be given	
To where have the previous land owners been settled?	Not applicable – no people to be replaced	
Supporting documents	Letter from Ilemela Municipal Council to MWAUWASA, dated 11/2/2016, on survey costs for 6 WST land plots, including this site (Doc No. 3 – see Appendix 6) Payment by MWAUWASA to City Council Director for survey costs (Doc No. 4 – see Appendix 6)	



Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

B4 – WS Extension in Capri Point

Total pipe lengths (HDPE & steel) (m)	1,380	
Terrain	Peninsular in the western part of the city surrounded by Lake Victoria, steep and rocky, with large residential plots, hotels and company premises.	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	65	
PAP no risk (%)	35	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Water Storage Tank (45 m^3) – Capri Point

Item	Name	Contact
Current land owner(s)	Unknown	
From whom was the land acquired	Unknown	
Date of land acquisition	Unknown	
Size of the plot	346 m^2 (TD, April 2016)	
Current plot use	Open rocky terrain	
Copy of title deed	Unknown	
Details of the transaction or compensation (to be) given	Unknown	
To where have the previous land owners been settled?	Unknown	
Supporting documents	No documents available	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

Pump Station – Capri Point

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired	Unknown	
Date of land acquisition	Unknown	
Size of the plot	120 m^2 (TD, April 2016)	
Current plot use	Inside existing premises of MWAUWASA at Capri Point	
Copy of title deed	Unknown	
Details of the transaction or compensation (to be) given	Unknown	
To where have the previous land owners been settled?	Not applicable	
Supporting documents	Not available	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

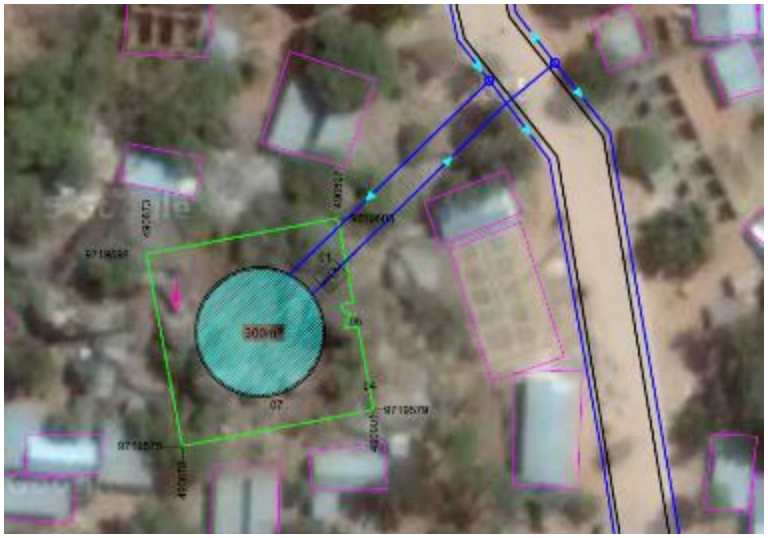
B5 – WS Extension in Bugarika

Total pipe lengths (HDPE & steel) (m)	12,760	
Terrain	Located in the southern central part of the city; especially the northern part is densely populated; terrain gently sloping to rocky-steep; southern part is low to medium densely populated.	
PAP high risk (%)	0	
PAP medium risk (%)	10	
PAP low risk (%)	85	
PAP no risk (%)	5	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Water Storage Tank 1 (300 m^3) – in *Bugarika Bendera* area, Bugarika

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired		
Date of land acquisition		
Size of the plot	576 m^2 (TD, April 2016); acquired land plot size 20 x 25 m; Doc 12, below)	
Current plot use	Rocky outcrop amidst low-cost housing	
Copy of title deed	In process	
Details of the transaction or compensation (to be) given	Receipt of payment cheque No.700211	
To where have the previous land owners been settled?	No people living on site, so no need for replacement	
Supporting documents	Agreement between Bugarika Ward Office and MWAUWASA, dated 13 March 2016, on the release of the land plot for construction of the water storage tank (File No. 12 – see Appendix 6)	



Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

Water Storage Tank 2 (800 m^3) – in Bugarika area

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired	Unknown	
Date of land acquisition	Unknown	
Size of the plot	818 m^2 (TD, April 2016); size of plot to be acquired is 2906 m^2 (Doc 12, below)	
Current plot use	Open rocky terrain	
Copy of title deed	Not available yet	
Details of the transaction or compensation (to be) given	Not applicable	
To where have the previous land owners been settled?	No people to be replaced or compensated	
Supporting documents	Letter from City Council to MWAUWASA, dated 19/1/2017, on allocation of plot and response letter of MWAUWASA to MD City Council, dated 26/1/2017, on reducing the cost for plot payment (Doc 13 – see Appendix 6)	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

B6 – WS Extension in Nyegezi

Total pipe lengths (HDPE & steel) (m)	13,570	
Terrain	Located in the SE fringes of the city, variable terrain, with in the NW and SW part pockets with high population density.	
PAP high risk (%)	0	
PAP medium risk (%)	27	
PAP low risk (%)	68	
PAP no risk (%)	5	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Water Storage Tank (1,200 m^3) – at *Utemini* area, Nyegezi

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired		
Date of land acquisition		
Size of the plot	1,063 m^2 (TD, April 2016); plot to be acquired is 12 x 22.5 m (Doc 14, below)	
Current plot use	Open rocky hill	
Copy of title deed	In process	
Details of the transaction or compensation (to be) given	Not known (to be checked)	
To where have the previous land owners been settled?	Not applicable	
Supporting documents	Letter from Mkolani Ward Office to MWAUWASA, 16/10/2015, on handing over the land to MWAUWASA for construction of the water storage tank (Doc No. 15 – see Appendix 6) Agreement between Mkolani Ward Office and MWAUWASA, dated 30/12/2015, on land handing over (Doc No. 16 – see Appendix 6).	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

Pump Station – Nyegezi

Item	Name	Contact
Current land owner(s)	MWAUWASA	Managing Director-MWAUWASA
From whom was the land acquired	Unknown	
Date of land acquisition	Unknown	
Size of the plot	330 m^2 (TD, April 2016)	
Current plot use	Open flat area located within existing MWAUWASA premises	
Copy of title deed	Not available	
Details of the transaction or compensation (to be) given	Not applicable	
To where have the previous land owners been settled?	Not applicable – no people to be replaced	
Supporting documents	No documents available	

Source: COWI Tender Documents, Volume V – Book of Drawings (July 2016)

B7 – WS Extension in Makongoro Infill

Total pipe lengths (HDPE & steel) (m)	2,180	
Terrain	Located in the western part of the city near Rock City mall and the national stadium, and west of the airport road, medium population density, gently sloping terrain.	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	100	
PAP no risk (%)	0	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

B8 – WS Rehabilitation in Makongoro Zone

Total pipe lengths (HDPE & steel) (m)	8,300	
Terrain	Located in the western part of the city near Rock City mall and the national stadium, and west of the airport road, medium population density, gently sloping terrain.	
PAP high risk (%)	1	
PAP medium risk (%)	22	
PAP low risk (%)	77	
PAP no risk (%)	0	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

B9 – WS Rehabilitation in Nyakato Zone

Total pipe lengths (HDPE & steel) (m)	5,900	
Terrain	Located in the central eastern part of the city, south of the Mwanza-Musoma road, on gently sloping terrain, with some steeper sections and rocky outcrops (e.g. Igoma Water Storage Tank); medium population density	
PAP high risk (%)	0	
PAP medium risk (%)	21	
PAP low risk (%)	79	
PAP no risk (%)	0	

0

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

B10 – WS Rehabilitation along Kenyatta Road

Total pipe lengths (HDPE & steel) (m)	1,500	
Terrain	Located along Lake Victoria in the central western part of the town, on flat terrain along the main Mwanza-Shinyanga road	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	100	
PAP no risk (%)	0	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
	Etc.							

Bill C Wastewater

C1 – Sewer extension at Mabatini A & B

Total pipe lengths (HDPE) (m)	2,181	
Terrain	Road	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	0	
PAP no risk (%)	100	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
		None expected						

C2 – Sewer extension in Kilimahewa

Total pipe lengths (HDPE) (m)	843	
Terrain	Road	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	0	
PAP no risk (%)	100	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
		None expected						

C3 – Sewer extension in Isamilo

Total pipe lengths (HDPE) (m)	907	
Terrain	Road	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	0	
PAP no risk (%)	100	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
		None expected						

C4 – Sewer extension in Igogo

Total pipe lengths (HDPE) (m)	452	
Terrain	Road	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	0	
PAP no risk (%)	100	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
		None expected						

C5 – Sewer replacement in Kenyatta Road and Makongoro Road

Total pipe lengths (HDPE & steel) (m)	426	
Terrain	Road	
PAP high risk (%)	0	
PAP medium risk (%)	0	
PAP low risk (%)	0	
PAP no risk (%)	100	

Nr	Pipe ID	PAP name	Plot ID	Plot size (m^2)	Land title (Y/N)	Project impact	Compensation	File ID
		None expected						

Appendix 6. Supporting Documents on Ownership of Key Land Take Locations

For confidential reasons this Appendix has been omitted from the public version of the report.

Appendix 7. MoWI's Guidance on A/RAP Preparation and Review

From: joseph kubena [mailto:josephkubena143@gmail.com]
Sent: 15 February 2017 18:12
To: Deo Celestine <deocelestine7@gmail.com>
Subject: Re: LVWATSAN-Review of Draft A/RAP and Acceptance of Non-PAP affected Area

Deo

Thanks for clear understanding of the process.please send the documents ASAP as I will be present in the office effective from wednesday next week..
However where ever I am still is posible to review and advise accodingly.

On Feb 15, 2017 5:23 PM, "Deo Celestine" <deocelestine7@gmail.com> wrote:

Dear Mr Kubena,

Following our conversation, I would like to confirm with you the process to be followed.

Step 1 *–*

- *PMC is to prepare and issue the Draft A/RAPs to the MoWI (Mr Kubena) for review. This process will entail sharing the draft document with other stakeholders including EIB/AFD for their comments*
- *This will also help the MoWIs to confirm areas that do not require an A/RAP i.e. as there are no effected PAPs. On the other hand, the process will also give the MoWI an understanding on the level of an expected value of compensation to be paid.*

Step 2 –

- *PMC to revise draft A/RAPs following comments, and pass onto the SC and Contractor.*
- *This will inform the contractor which areas they can commence construction on, and which they cannot.*

Step 3 –

- *The SC will then work with the contractor to confirm any details within the draft to enable the FINAL A/RAP to be finalised.*
- *Any further details will be passed to the PMC to update the A/RAPs, which will then be issued to the MoWI (Mr Kubena) and the EIB for final review and issue A/RAP approval letter. This will also allow the compensation process to commence, and following this the construction of remaining PAP affected elements.*

We will appreciate you feedback on this and we will call you in advance of sending you any draft or final A/RAPs to ensure that you are aware that they will be arriving, and with the hope that comments/certification/approval (as required) is able to be provided as quickly as possible to ensure works can proceed as soon as possible.

Kind regards,

Appendix 8. MoWI's Comments on Interim A/RAP Report

This Appendix presents the comments that were received from MoWI on 6/4/2017, on the Interim A/RAP report that was submitted by the Consultant to MoWI on 15/3/2017

Nr	Section in the Interim Report of 15/4/2017	*MoWI's comments of 6/4/2017*	Consultant's response on how the comment has been addressed in the present report
1	1.5 – one but last para: minutes of consultation meetings	*It could have been better to have a summary of what was discussed and agreed in English and use tabulated format*	Summaries of meetings conducted are provided in Appendix 2.
2	1.5 – last para: documents that prove landownership	*Append those official letter from relevant institution as proof of the GoT commitment towards implementation of the same with thought constrains*	Letters available at this stage are provided in Appendix 6.
3	4.2 – page 22, 3rd bullet from below: "few schools had access to it"	*market/public places*	Bullet point listing is a citation from a UN-H report; point noted however.
4	5.2 – second para: "and the project communities"	*including the satellite towns*	Current A/RAP report is for works in Mwanza City only.
5	5.2 – page 26, 2nd para:	*Is not appended and should be summarized in English and tabular form for easy interpretation.*	See response 1, above.
6	5.2 – Table 5.1, line 12	*This form should be appended at the end of the report*	The form was/is provided in Appendix 1.
7	6.1 – 4th para: compensation for land occupancy without land title	*They can be compensated as long they have occupied that piece of land (except the already government owned land eg road reserves) for not less than 11 years without being disturbed (given notice) by any body*	Procedures will have to comply to the Land Assessment & Compensation Regulations of 2001 and the MoWI-endorsed RPF of January 2016.
8	6.3 – 3rd para: limitations of COWI's design	*The current limitation cannot be a constrain for the contractor to undertake the activities, since table 5.1 row 11-14 have said it all. There is little/or non to be compensated people have volunteered their land and the have own local technology which is safe and efficient for splitting boulders into pieces with neither sound nor vibration. It is also a way of community involvement in the project activities.*	Good point, and this was noted by communities in for example Kitangiri, that traditional, low-impact methodologies (heat/fire) can be used to crush rock.
9	6.3 – last sentence on page 31: RPF procedure being unfeasible	*However the area marked as HIGH RISK was accessed during the December Mission, only to find that it is just 25mm pipe traversing beneath to the building. It was concluded that the activities can done by community under supervision of the contractor with no need of having an ARAP being approved and compensation paid before hand.*	No adverse impact is expected from any '25mm' pipe installation. It is indeed expected that most adverse impacts of pipe installation can easily be mitigated by avoidance or compensated during construction works.

Nr	Section in the Interim Report of 15/4/2017	*MoWI's comments of 6/4/2017*	Consultant's response on how the comment has been addressed in the present report
10	6.4 – Unavailability of detailed maps showing the exact pipe alignments	*With a prevailing nature of the project (minor earth moving and less impact) it is obvious the final selection can be decided on site in the presence a contractor. Then the actual PAP (which are few) can easily picked and sign the voluntary agreement form.*	This confirms the general approach proposed in this report.
11	6.4.3 – Decision on exact pipe alignment	*The concurs of the community were already documented and what they need as propriety are in tab 5.1. raw 11-14*	Noted.
12	6.5 – 2nd para: RPF being inconsistent	*it shall be rectified in the RPF*	Noted.
13	6.5 – Last para on page 32	*Suggested sentence rephrasing*	Amended.
14	7.2.1 – 1st para under Table 7-1: construction methodology to be decided	*However the community have their awn technology already n place.*	Noted. See also response on 8.
15	7.2.1 – last para on page 35: PAP identification only possible after final decision on pipe alignment	*delete can be put is*	Amended.

Appendix 9. PAP Risk Area Digital Data Register

The following pages present some sections from the digital Data Register that has been compiled for PAP risk areas in Mwanza City for the Contract 1 works, for future referencing and updating by the Supervising Consultant.

Makongoro Pipe Schedule - Prelim Issue Register

COWI DRAWING REFERENCE				COWI PIPE ID REFERENCE			Pipe Spec	Pipe Length, m	GPS Photo survey?	Social Conditions:		Permanent Impact			Temporary impact				Engineering										Environment																		
												Compensation for land or other assets			Compensate lost income / minimise disturbance					Road Crossing?			Other Services?						Land Use?								Ground Conditions?			Gradient				Proximity to open water			
Dwg #: GA	Dwg #: Pipe Schedule	Area	Ext/ Rehab	Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve		Y/N	Qualitative Analysis for HH/Business	Road Side of the Defective/Replacement Pipe from	Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting	Connection to Ext'g Pipe Y/N	Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other		High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial/ Industrial	Open/ Agri	Other	Formal Settlements	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
		Nyakato	Rehabilitation		J49	J50	OD225 HDPE	301.6024	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N		N	N	N	N	N	N	N	Low Densit	Y	Y	N	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J50	J51	OD225 HDPE	115.1043	Y	Households/Business	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		N	N	N	N	N	N	N	Low Densit	Y	Y	N	N	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J51	J52	OD225 HDPE	12.52996	Y	No Households/Busine	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	N	N	N	N/A	Y	N	N	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J52	J53	OD225 HDPE	354.0904	Y	Households/Business	L.H.S	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	N	N	N	Low Densit	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J53	J54	OD225 HDPE	162.373	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Densit	Y	Y	Y	N	N	Y	N	Y	N	N	N
		Nyakato	Rehabilitation		J54	J55	OD225 HDPE	9.848858	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	N	N	N	Low Densit	Y	Y	Y	N	N	Y	N	Y	N	N	N
		Nyakato	Rehabilitation		J55	J56	OD225 HDPE	400.5858	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	edium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J56	J57	OD225 HDPE	557.5518	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	Y	N	N		N	N	N	N	N	N	N	Low Densit	Y	Y	Y	N	N	Y	N	Y	N	N	N
		Nyakato	Rehabilitation		J57	J58	OD225 HDPE	86.34813	Y	Households/Business	L.H.S	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J58	J59	OD225 HDPE	429.1165	Y	Households/Business	L.H.S	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	Y	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J59	J60	OD225 HDPE	207.6463	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J60	J61	OD225 HDPE	34.88553	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J61	J62	OD225 HDPE	188.0425	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J62	J63	OD225 HDPE	90.79648	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J63	J64	OD225 HDPE	378.9301	Y	Households/Business	R.H.S	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	N	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J64	J65	OD225 HDPE	170.8801	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		Y	Y	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J65	J66	OD225 HDPE	414.478	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		Y	Y	N	N	N	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J66	J67	OD225 HDPE	329.9515	Y	Households/Business	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	N	N	N	edium Dens	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J67	J68	OD225 HDPE	201.2585	Y	Households/Business	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	N	N	N	edium Dens	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J68	J69	OD225 HDPE	146.3728	Y	Households/Business	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		N	N	N	N	N	N	N	edium Dens	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J69	J70	OD225 HDPE	321.6458	Y	Households/Business	Both	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		Y	Y	N	N	Y	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J70	J71	OD225 HDPE	248.0323	Y	Households/Business	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	Y	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J71	J72	OD225 HDPE	294.6133	Y	Households/Business	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N		N	N	N	N	Y	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J72	J73	OD225 HDPE	56.32051	Y		R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N		N	N	N	N	Y	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N
		Nyakato	Rehabilitation		J73	J74	OD225 HDPE	422.1433	Y		R.H.S	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N		N	N	N	N	Y	N	N	N/A	Y	Y	Y	Y	Y	N	N	Y	N	N	N

Kenyata Road Pipe Schedule - Prelim Issue Register

COWI DRAWING REFERENCE				COWI PIPE ID REFERENCE			Pipe Spec	Pipe Length, m	GPS Photo survey?	Social Conditions:		Permanent Impact			Temporary impact				Engineering									Environment																
												Compensation for land or other assets			Compensate lost income / minimise disturbance					Road Crossing?			Other Services?					Land Use?						Ground Conditions?			Gradient				Proximity to open water			
Dwg #: GA	Dwg #: Pipe Schedule	Area	Ext/ Rehab	Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve		Y/N	Qualitative Analysis for HH/Business	Road Side of the Defective/ Replacement Pipe	Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting	Connection to Ext'g Pipe Y/N	Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High formal	Med Density formal	Low Density formal	Suberb	Commercial/ Industrial	Open/ Agri	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
		Kenyata Roa	Rehabilitation		J77	J78		956.0821	Y	Households/Business Premises with low risk	R.H.S	Y	N	N	Y	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	Y	N	Y	Y	N	N	N	N	N	Y
		Kenyata Roa	Rehabilitation		J78	J79		10	Y	Households/Business Premises with low risk	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y
		Kenyata Roa	Rehabilitation		J79	J80		238.2876	Y	Households/Business Premises with low risk	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y
		Kenyata Roa	Rehabilitation		J80	J81		8	Y	Households/Business Premises with low risk	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y
		Kenyata Roa	Rehabilitation		J81	J82		79.62412	Y	Households/Business Premises with low risk	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y
		Kenyata Roa	Rehabilitation		J82	J83		321.4607	Y	Households/Business Premises with low risk	R.H.S	Y	N	N	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y

Makongoro Pipe Schedule

EXISTING PIPE ID & SPECs			Pipe Spec	Drawing Coordinates (COWI Design)						Site Coordinates (GPS Survey)						Pipe Length, m	GPS Photo survey?	Social Conditions:		Permanent Impact			Temporary impact				Engineering issues & Permits:									Environment																	Remark
				Start Node			End Node			Start Node			End Node							Compensation for land or other assets			Compensate lost income / minimise disturbance					Road Crossing?			Other Services?					Land Use?						Ground Conditions?			Gradient				Proximity to open water				
Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve	Easting	Northing	Elevation	Easting	Northing	Elevation	Easting	Northing	Elevation	Easting	Northing	Elevation		Y/N	Qualitative Analysis for HH/Business	Road Side of the Defective/Replacement Pipe from Start Node	Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting	Connection to Ext'g Pipe Y/N	Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High formal	Med Density formal	Low Density formal	Suberb	Commercial / Industrial	Open/ Agri	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake	
	J01	J02	OD160 HDPE							488815	9723052	1135	488333	9723292	1138	538.4459	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	Y	N	Y	N	N	Y	N	N	N	N	Y	Y	N	Y	N	Y	N	N	N	Y	N	N	N	N	N	Y	
	J02	J03	OD160 HDPE							488333	9723292	1138	488284	9723290	1142	49.0408	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	N	Y	Y	N	N	Y	N	Y	N	N	N	Y	N	N	N	N	N	Y	
	J03	J04	OD160 HDPE							488284	9723290	1142	488035	9723248	1138	252.5173	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	N	N	N	Y	Y	N	N	Y	N	Y	N	N	N	Y	N	N	N	N	N	Y	
	J04	J05	OD160 HDPE							488035	9723248	1138	488029	9723410	1149	162.1111	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	
	J05	JO6	OD160 HDPE							488029	9723410	1149	487994	9723496	1155	92.84934	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	
	JO6	J07	OD160 HDPE							487994	9723496	1155	487847	9723652	1167	214.3478	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	
	J03	J08	OD160 HDPE							488284	9723290	1142	488276	9723376	1144	86.37129	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J05	J08	OD160 HDPE							488029	9723410	1149	488276	9723376	1144	249.3291	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	Y	N	N	Y	Y	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	
	JO6	J10	OD160 HDPE							487994	9723496	1155	488048	9723608	1153	124.3382	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J08	J09	OD160 HDPE							488276	9723376	1144	488218	9723514	1144	149.693	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J09	J10	OD160 HDPE							488218	9723514	1144	488048	9723608	1153	194.2576	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	N	
	J02	J11	OD160 HDPE							488333	9723292	1138	488313	9723526	1140	234.8531	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J11	J12	OD160 HDPE							488313	9723526	1140	488244	9723568	1145	80.77747	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	Y	Y	N	N	N	N	N	
	J09	J12	OD160 HDPE							488218	9723514	1144	488244	9723568	1145	59.9333	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J12	J13	OD160 HDPE							488244	9723568	1145	488291	9723672	1145	114.1271	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J13	J40	OD160 HDPE							488291	9723672	1145	488444	9723952	1147	319.0752	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J14	J21	OD200 HDPE							488908	9723422	1146	488736	9723490	1140	184.954	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	Y	Y	N	Y	N	N	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J21	J19	OD160 HDPE							488736	9723490	1140	488537	9723560	1141	210.9526	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	Y	Y	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J19	J15	OD160 HDPE							488537	9723560	1141	488420	9723602	1142	124.3101	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	Y	Y	N	Y	N	N	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	Y	N	N	
	J13	J15	OD160 HDPE							488291	9723672	1145	488420	9723602	1142	146.7685	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	Y	N	Y	Y	N	Y	N	N	Y	Y	N	N	N	Y	N	N	N	Y	Y	N	N	N	N	N	
	J15	J16	OD100 HDPE							488420	9723602	1142	488442	9723666	1142	67.6757	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	N	N	Y	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J16	J17	OD110 HDPE							488442	9723666	1142	488394	9723696	1141	56.60389	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J17	J18	OD110 HDPE							488394	9723696	1141	488491	9723894	1147	220.4836	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	N	N	N	Y	Y	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J19	J20	OD110 HDPE							488537	9723560	1141	488585	9723860	1138	303.8157	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	N	N	N	Y	Y	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J21	J22	OD160 HDPE							488736	9723490	1140	488770	9723572	1143	88.76936	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y	Y	N	N	N	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	N	N	N	
	J22	J23	OD110 HDPE							488770	9723572	1143	488717	9723590	1141	55.97321	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	Y	N	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J23	J25	OD110 HDPE							488717	9723590	1141	488726	9723620	1137	31.32092	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	Y	N	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	Indicated on the wrong location in the pipeline layout
	J25	J26	OD110 HDPE							488726	9723620	1137	488756	9723712	1141	96.76776	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J26	J27	OD110 HDPE							488756	9723712	1141	488636	9723740	1143	123.2234	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J27	J28	OD110 HDPE							488636	9723740	1143	488652	9723846	1145	107.2007	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J26	J29	OD110 HDPE							488756	9723712	1141	488799	9723812	1146	108.8531	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J22	J30	OD160 HDPE							488770	9723572	1143	488849	9723796	1143	237.5226	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J32	J33	OD90 HDPE							488849	9723796	1143	488858	9724404	1149	608.0666	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	N	N	N	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J33	J34	OD90 HDPE							488858	9724404	1149	488938	9724710	1152	316.2847	Y	Households/Business Premises	L.H.S	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	Y	N	N	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J31	J37	OD110 HDPE							488917	9723768	1145	489094	9724584	1151	834.976	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y	Y	N	N	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J37	J38	OD110 HDPE							489094	9724584	1151	489068	9724594	1152	27.85678	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J38	J39	OD110 HDPE							489068	9724594	1152	489157	9724846	1153	267.2546	Y	Households/Business Premises	R.H.S	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	Y	Y	N	N	N	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	
	J39	J41	OD110 HDPE							489157	9724846	1153	489056	9724870	1155	103.8123	Y	Households/Business Premises	Both	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	N	N	N	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	N	N	N	Indicated on the wrong location in the pipeline layout

Nyegezi Pipe Schedule - Register					GPS Photo survey?	Social Conditions:	Permanent Impact			Temporary impact				Engineering issues & Permits:									Environment																					
COWI PIPE ID REFERENCE			Pipe Spec	End Node		Qualitative Analysis for HH/Business	Compensation for land or other assets			Compensate lost income / minimise disturbance				Connection to Ext'g Pipe Y/N	Road Crossing?			Other Services?					Land Use?								Ground Conditions?			Gradient				Proximity to open water							
Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve	Elevation	Y/N		Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting		Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial / Industrial	Open/ Agri	Other	Formal Settlements	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake				
P-0140N	J-2461N	J-2460N	DN90 HDPE PN10	1206	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	Low Density	Y	Y	N	N	N	Y	N	Y	N	N	N			
P-0141N	J-2461N	J-2462N	DN90 HDPE PN10	1266	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N/A	Y	Y	N	N	N	Y	N	Y	N	N	N			
P-0142N	J-2461N	J-2463N	DN63 HDPE PN10	1243	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N/A	Y	Y	N	N	N	Y	N	Y	N	N	N			
P-0143N	J-2464N	J-2461N	DN200 HDPE PN10	1249	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	Y	Y	N	Y	Y	N	N	Y	N	N	N			
P-0144N	J-2465N	J-2464N	DN200 HDPE PN10	1245	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	Y	Y	N	N	Y	N	N	Y	N	N	N			
P-0145N	J-2465N	J-2466N	DN110 HDPE PN10	1242	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N			
P-0146N	J-2466N	J-2467N	DN90 HDPE PN10	1246	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	N	N	N	Y	N	N	Y	N	N	N			
P-0147N	J-2467N	J-2468N	DN90 HDPE PN10	1228	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N			
P-0148N	J-2468N	J-2469N	DN63 HDPE PN10	1245	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	N	N	Y	Y	N	Y	N	N	N			
P-0149N	J-2464N	J-2470N	DN63 HDPE PN10	1220	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N			
P-0150N	J-2468N	J-2471N	DN63 HDPE PN10	1241	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N			
P-0151N	J-2472N	J-2467N	DN90 HDPE PN10	1246	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	N	N	N	Y	N	N	Y	N	N	N			
P-0152N	J-NYG3	J-2472N	DN160 HDPE PN10	#	Y																																						
P-0153N	J-NYG3	J-NYG6	DN250 HDPE PN10	1271	Y	Households/Business Premise	Y	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N			
P-0154N	J-2473N	J-NYG7	DN250 STEEL WP31	1267	Y	Households/Business Premise	Y	Y	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N			
P-0155N	J-2473N	J-2475N	DN63 HDPE PN10	#	Y																																N						
P-0156N	J-2472N	J-2476N	DN110 HDPE PN10	1245	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	Y	Y	Y	N	Y	N	N	Y	N	N	N			
P-0157N	J-2476N	J-2477N	DN90 HDPE PN10	1224	Y	No Households/Business pren	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	Low Density	Y	Y	N	N	Y	Y	N	Y	N	N	N			
P-0158N	J-2476N	J-2478N	DN63 HDPE PN10	1241	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N			
P-0159N	NYGZ-TAN	6691-A	DN200 STEEL WP27.9	#	Y																																						
P-0160N	J-NYG4	J-NYG5	DN200 HDPE PN10	1266	Y	Households/Business Premise	Y	Y	N	Y	Y	Y	Y	N	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	Y	N	to Low De	Y	Y	Y	Y	Y	Y	N	Y	N	N	N			
P-0162N	J-2477N	J-2471N	DN63 HDPE PN10	1241	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	dium Dens	Y	Y	N	N	Y	Y	N	Y	N	N	N			
P-NYG1	J-NYG1	TNK1	DN200 STEEL WP27.9	#	Y																																						
P-NYG2	TNK1	J-2473N	DN250 STEEL WP31	1282	Y	Households/Business Premise	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N			
P-NYG3	6691-B	J-NYG4	DN200 STEEL WP27.9	1251	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N/A	Y	Y	N	N	Y	Y	N	Y	N	N	N			
P-NYG4	J-NYG5	J-NYG2	DN200 STEEL WP27.9	1290	Y	Households/Business Premise	Y	Y	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	N	Y	N	Y	N	N	N			
P-NYG5	J-NYG6	J-2465N	DN250 HDPE PN10	1255	Y	No Households/Business pren	Y	N	N	Y	Y	Y	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N			
P-NYG6	J-2475N	J-2478N	DN63 HDPE PN10	1241	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N			
P-NYG7	J-2470N	J-2469N	DN63 HDPE PN10	1245	Y	Households/Business Premise	Y	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N			
P-NYG8	J-NYG7	J-NYG3	DN250 STEEL WP31	1266	Y	Households/Business Premise	Y	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N			
PMP-01	6691-A	6691-B	Operating Pump	#	Y																																						
PMP-02	6691-A	6691-B	Standby Pump	#	Y																																						
FCV1	J-NYG2	J-NYG1	DN200 Float Valve	#	Y																																						
P-0120N	J-2488N	J-2535N	DN90 HDPE PN10	#	Y																																						
P-0119N	J-NYK09	J-2498N	DN160 HDPE PN10	#	Y																																						
P-0130N	6757-B	J-NYK05	DN200 HDPE PN12.5	#	Y																																						
P-0108N	6721-B	TNK1	DN150 STEEL WP36.3	#	Y																																						
P-0107N	J-NYK05	J-NYK10	DN160 HDPE PN10	#	Y																																						
P-0073N	J-2486N	J-2480N	DN63 HDPE PN10	#	Y																																						
P-0072N	J-2496N	J-2486N	DN63 HDPE PN10	#	Y																																						
P-NYK01	J-NYK13	J-NYK08	DN160 HDPE PN10	#	Y																																						
P-NYK02	J-2485N	J-NYK01	DN90 HDPE PN10	#	Y																																						
P-NYK03	TNK2	J-NYK02	DN200 STEEL WP27.9	#	Y																																						
P-NYK04	J-NYK02	J-2485N	DN80 STEEL WP60.8	#	Y																																						
P-NYK05	TNK1	J-NYK04	DN150 STEEL WP36.3	#	Y																																						
P-NYK06	J-NYK11	J-NYK03	DN110 HDPE PN10	#	Y																																						
P-NYK07	J-2499N	J-2482N	DN63 HDPE PN10	#	Y																																						
P-NYK08	J-NYK03	J-2479N	DN63 HDPE PN10	#	Y																																						
P-NYK09	J-NYK07	TNK2	DN150 STEEL WP36.3	#	Y																																						
P-NYK10	J-NYK08	J-NYK06	DN150 STEEL WP36.3	#	Y																																						
P-NYK11	J-NYK04	J-NYK09	DN150 STEEL WP36.3	#	Y																																						
P-NYK12	J-NYK10	6721-A	DN150 STEEL WP36.3	#	Y																																						
P-NYK13	J-NYK04	J-NYK11	DN100 STEEL WP53.5	#	Y																																						
P-NYK14	J-NYK02	J-NYK12	DN200 STEEL WP27.9	#	Y																																						
P-NYK15	J-NYK05	J-NYK13	DN160 HDPE PN10	#	Y																																						
PMP-16	OD200HD	6757-B	Operating Pump	#	Y																																						
FCV1	6721-A	6721-B	Float Contol Valve	#	Y																																						
FCV2	J-NYK06	J-NYK07	Float Contol Valve	#	Y																																						
PRV1	J-2510N	J-NYK14	Pressure Reducing Valve	#	Y																																						
PRV2	J-2508N	J-NYK15	Pressure Reducing Valve	#	Y																																						
PRV3	J-2505N	J-NYK16	Pressure Reducing Valve	#	Y																																						
PRV4	J-2503N	J-NYK17	Pressure Reducing Valve	#	Y																																						
PRV5	J-2500N	J-NYK18	Pressure Reducing Valve	#	Y																																						

Nyasaka Pipe Schedule

	COWI DRAWING REFERENCE		COWI PIPE ID	Pipe Spec	GPS Photo survey?	Social Conditions:	Permanent Impact			Temporary impact				Engineering issues & Permits:								Environment																			
																						Land Use?								Ground Conditions?			Gradient				Proximity to open water			
	Area	Ext/ Rehab	Pipe ID	Nominal Diameter & Rating / Valve	Y/N	Qualitative Analysis for HH/Business	Compensation for land or other assets			Compensate lost income / minimise disturbance				Connection to Ext'g Pipe Y/N	Road Crossing?			Other Services?																									
							Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting		Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial / Industrial	Open/ Agri	Other	Formal Settlements	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
1	Nyasaka	Extension	P-0060N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	N	N	Y	N	N	Y	N	N	N
2	Nyasaka	Extension	P-0062N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
3	Nyasaka	Extension	P-0110N	DN90 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
4	Nyasaka	Extension	P-0101N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
5	Nyasaka	Extension	P-0064N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
6	Nyasaka	Extension	P-0103N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
7	Nyasaka	Extension	P-0078N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
8	Nyasaka	Extension	P-0067N	DN63 HDPE PN10	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	High Densit	Y	Y	N	N	Y	N	N	Y	N	N	N
9	Nyasaka	Extension	P-0050N	DN200 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	Y	N	Y	N	N	Y	N	N	N
10	Nyasaka	Extension	P-0123N	DN200 HDPE PN10	Y	Households/Business Premise	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	to Low De	Y	Y	Y	N	Y	Y	N	Y	N	N	N
11	Nyasaka	Extension	P-0109N	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Low Densit	Y	Y	N	N	Y	N	N	Y	N	N	N
12	Nyasaka	Extension	P-0077N	DN63 HDPE PN10	Y	Households/Business Premise	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	Y	Y	High Densit	Y	Y	Y	N	Y	Y	N	Y	N	N	N
13	Nyasaka	Extension	P-0112N	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Densit	Y	Y	N	N	Y	N	N	Y	N	N	N
14	Nyasaka	Extension	P-0099N	DN110 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
15	Nyasaka	Extension	P-0070N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
16	Nyasaka	Extension	P-0090N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
17	Nyasaka	Extension	P-0069N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	to Low De	Y	Y	Y	N	Y	Y	N	Y	N	N	N
18	Nyasaka	Extension	P-0068N	DN90 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	Y	N	Y	N	N	N
19	Nyasaka	Extension	P-0113N	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
20	Nyasaka	Extension	P-0066N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
21	Nyasaka	Extension	P-0114N	DN110 HDPE PN10	Y	Households/Business Premise	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	N	N	Y	Y	N	Y	N	N	N
22	Nyasaka	Extension	P-0115N	DN110 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	N	N	Y	Y	N	Y	N	N	N
23	Nyasaka	Extension	P-0065N	DN50 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
24	Nyasaka	Extension	P-0096N	DN110 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
25	Nyasaka	Extension	P-0063N	DN50 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
26	Nyasaka	Extension	P-0102N	DN110 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	to Low De	N	Y	Y	N	N	Y	N	Y	N	N	N
27	Nyasaka	Extension	P-0089N	DN110 HDPE PN10	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N/A	N	N	Y	N	Y	N	N	Y	N	N	N
28	Nyasaka	Extension	P-0052N	DN50 HDPE PN12.5	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N
29	Nyasaka	Extension	P-0092N	DN63 HDPE PN10	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	Y	N/A	N	N	Y	N	Y	N	N	Y	N	N	N
30	Nyasaka	Extension	P-0071N	DN50 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
31	Nyasaka	Extension	P-0059N	DN50 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	to Low De	N	Y	Y	N	Y	Y	Y	Y	N	N	N
32	Nyasaka	Extension	P-0058N	DN50 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Medium Dens	N	Y	Y	N	Y	Y	Y	Y	N	N	N
33	Nyasaka	Extension	P-0118N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
34	Nyasaka	Extension	P-0120N	DN90 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	N	N	Y	Y	N	Y	N	N	N
35	Nyasaka	Extension	P-0119N	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
36	Nyasaka	Extension	P-0130N	DN200 HDPE PN12.5	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	to Low De	Y	Y	N	N	Y	N	N	Y	N	N	N
MIS	Nyasaka	Extension	P-0108N	DN150 STEEL WP36.3	Y									N																								Y			
38	Nyasaka	Extension	P-0107N	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
39	Nyasaka	Extension	P-0073N	DN63 HDPE PN10	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N/A	Y	Y	Y	N	Y	Y	Y	Y	N	N	N
40	Nyasaka	Extension	P-0072N	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	to Low De	Y	Y	N	N	Y	Y	N	Y	N	N	N
41	Nyasaka	Extension	P-NYK01	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	N	N	Y	Y	N	Y	N	N	N
42	Nyasaka	Extension	P-NYK02	DN90 HDPE PN10	Y	Households/Business Premise	Y	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	N	Y	N	N	Y	N	Y	N	N	N
43	Nyasaka	Extension	P-NYK03	DN200 STEEL WP27.9	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	Y	N	Y	Y	N	Y	N	N	N
44	Nyasaka	Extension	P-NYK04	DN80 STEEL WP60.8	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	Y	N	Y	Y	N	Y	N	N	N
MIS	Nyasaka	Extension	P-NYK05	DN150 STEEL WP36.3	Y									N																								Y			
46	Nyasaka	Extension	P-NYK06	DN110 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
47	Nyasaka	Extension	P-NYK07	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	Medium Dens	Y	Y	N	Y	Y	N	N	Y	N	N	N
48	Nyasaka	Extension	P-NYK08	DN63 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	Y	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
MIS	Nyasaka	Extension	P-NYK09	DN150 STEEL WP36.3	Y									N																								Y			
50	Nyasaka	Extension	P-NYK10	DN150 STEEL WP36.3	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	Y	N	Y	Y	N	Y	N	N	N
51	Nyasaka	Extension	P-NYK11	DN150 STEEL WP36.3	Y	Households/Business Premise	Y	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N/A	N	N	Y	N	N	Y	N	Y	N	N	N
52	Nyasaka	Extension	P-NYK12	DN150 STEEL WP36.3	Y	Households/Business Premise	Y	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N/A	N	N	Y	N	N	Y	N	Y	N	N	N
53	Nyasaka	Extension	P-NYK13	DN100 STEEL WP53.5	Y	Households/Business Premise	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	N	Y	N	N	Y	N	Y	N	N	N
54	Nyasaka	Extension	P-NYK14	DN200 STEEL WP27.9	Y	No Households/Business prem	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	High Densit	Y	Y	Y	N	Y	Y	N	Y	N	N	N
55	Nyasaka	Extension	P-NYK15	DN160 HDPE PN10	Y	Households/Business Premise	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
56	Nyasaka	Extension	PMP-16	Operating Pump	Y									N																								Y			
57	Nyasaka	Extension	FCV1	Float Contol Valve	Y									N																								Y			
58	Nyasaka	Extension	FCV2	Float Contol Valve	Y									N																								Y			
59	Nyasaka	Extension	PRV1	Pressure Reducing Valve	Y									N																								Y			
60	Nyasaka	Extension	PRV2	Pressure Reducing Valve	Y									N																								Y			
61	Nyasaka	Extension	PRV3	Pressure Reducing Valve	Y									N																								Y			
62	Nyasaka	Extension	PRV4	Pressure Reducing Valve	Y									N																								Y			
63	Nyasaka	Extension	PRV5	Pressure Reducing Valve	Y									N																								Y			

Bugarika Pipe Schedule - Prelim Issue Register

	COWI DRAWING REFERENCE				COWI PIPE ID REFERENCE			Pipe Spec	GPS Photo survey?	Social Conditions:	No. HH/ Businesses		Permanent Impact			Temporary impact				Engineering issues & Permits:									Environment															
																													Land Use?							Ground Conditions?			Gradient				Proximity to open water			
	Dwg #: GA	Dwg #: Pipe Schedule	Area	Ext/ Rehab	Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve	Y/N	Qualitative Analysis for HH/Business	Right	Left	Compensation for land or other assets			Compensate lost income / minimise disturbance				Connection to Ext'g Pipe Y/N	Road Crossing?			Other Services?																					
													Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting		Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial / Industrial	Open/ Agri	Other	Formal Settlements	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
1	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0104N	J-BG09	J-2442N	DN110 HDPE PN10	Y	No Households/Business premises nearby	#	#	Y	N	N	N	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N/A	Y	Y	Y	N	Y	N	N	N	N	N	N
2	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0097N	J-2442N	J-2443N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
3	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0100N	J-2442N	J-2444N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
4	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0124N	J-2445N	J-2441N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
5	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0080N	J-BG07	J-2446N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
6	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0106N	J-2445N	J-2447N	DN160 HDPE PN10	Y	No Households/Business premises nearby	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
7	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0105N	J-2447N	J-2448N	DN160 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
8	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0093N	J-2448N	J-2449N	DN110 HDPE PN10	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
9	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0076N	J-2448N	J-2450N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N
10	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0083N	J-2447N	J-2451N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
11	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0127N	J-2445N	J-2452N	DN160 HDPE PN10	Y	No Households/Business premises nearby	#	#	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N/A	Y	Y	Y	N	N	Y	N	Y	N	N	N
12	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0095N	J-2452N	J-2453N	DN160 HDPE PN10	#	#	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	N	N	Y	Y	N	Y	N	N	N
13	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0082N	J-2453N	J-2454N	DN90 HDPE PN10	#	#	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	N	N	Y	N	N	Y	N	N	N
14	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0079N	J-2453N	J-2455N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	Y	N	Y	N	N	Y	N	N	N
15	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0128N	J-2456N	J-2452N	DN160 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	Y	N	Y	N	N	Y	N	N	N
16	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0081N	J-2456N	J-2457N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	N	N	Y	N	N	Y	N	N	N
17	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0129N	J-BG08	J-2458N	DN160 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	Y	N	N	N
18	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0132N	J-2458N	J-2459N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	Y	N	Y	Y	N	N	Y	N	N
19	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-0132M	DN300-DI	J-BG02	DN250 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	Y	Y	Y	N	Y	N	N	Y	N	N	N
20	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG01	J-BG02	J-BG03	DN100 STEEL WP53.5	Y	No Households/Business premises nearby	#	#	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N/A	N	N	Y	N	Y	N	N	Y	N	N	N
21	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG03	J-BG02	J-BG05	DN200 HDPE PN10	Y	Households/Business Premises with medium risk	#	#	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Medium Dens	Y	Y	Y	N	Y	N	N	Y	N	N	N
22	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG05	J-BG09	J-BG07	DN250 HDPE PN10	#	#	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	Y	N	Y	Y	N	Y	N	N	N
23	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG06	J-BG07	J-2445N	DN250 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Medium Dens	Y	Y	N	N	Y	N	N	Y	N	N	N
24	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG07	TNK1	J-BG08	DN150 STEEL WP36.3	Y	No Households/Business premises nearby	#	#	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N/A	N	N	Y	N	Y	N	N	Y	N	N	N
25	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG08	J-BG08	J-2458N	DN110 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	Y	N	Y	N	N	Y	N	N	N
26	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG11	J-2458N	J-BG11	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	Y	N	Y	N	N	Y	N	N	N
27	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG12	J-BG11	J-BG12	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	Y	N	Y	N	N	Y	N	N	N
28	WS.1.110-06	WS.1.130-04	Bugarika	Extension	P-BG13	J-BG11	J-BG10	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N/A	N	Y	Y	N	Y	N	N	Y	N	N	N

Nyakabungo & Mjimwema Pipe Schedule - Prelim Issue Register

COWI DRAWING REFERENCE		COWI PIPE ID REFERENCE			Pipe Spec	GPS Photo survey?	Social Conditions: Qualitative Analysis for HH/Business	Permanent Impact: Compensation for land or other assets			Temporary impact: Compensate lost income / minimise disturbance				Engineering issues & Permits: Connection to Ext'g Pipe	Road Crossing?			Other Services?					Environment: Land Use?							Ground Conditions?			Gradient				Proximity to open water			
Area	Ext/ Rehab	Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve	Y/N		Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting	Y/N	Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial / Industrial	Open/ Agri	Other	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
Nyakabungo&Mjimwema	Extension	P-0057N	J-2514N	J-2515N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	Y	Y	N	N	Y	Y	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0056N	J-2514N	J-2516N	DN63 HDPE PN10	Y	Households/Business Premises with high risk	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	Y	Y	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0098N	J-NM29	J-2514N	DN110 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0055N	J-NM29	J-NM23	DN90 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0088N	J-2520N	J-2519N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0087N	J-2520N	J-2521N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	N	Y	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0053N	J-2521N	J-2522N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	Y	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0075N	J-2523N	J-2524N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0086N	J-2525N	J-2521N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0085N	J-2525N	J-2523N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0117N	J-2526N	J-2525N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0116N	J-NM09	J-2520N	DN110 HDPE PN10	Y	Households/Business Premises with medium risk	Y	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0122N	J-2526N	J-2527N	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0111N	J-2527N	J-2528N	DN110 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0061N	J-2528N	J-2529N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0084N	J-2528N	J-2523N	DN90 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0051N	J-2528N	J-2530N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0121N	J-2531N	J-2532N	DN160 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0074N	J-2532N	J-2533N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0094N	J-2532N	J-2534N	DN110 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0125N	J-NM01	J-2531N	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0133N	J-NM29	J-NM14	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-0054N	J-2529N	J-2530N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM01	J-2527N	J-NM01	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM03	J-NM04	J-NM05	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM04	J-NM05	J-NM06	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM05	J-NM06	J-NM07	DN200 HDPE PN10	Y	Households/Business Premises with high risk	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM06	J-NM08	TNK1	DN200 HDPE PN10	Y									N																										
Nyakabungo&Mjimwema	Extension	P-NM07	TNK1	J-NM09	DN250 HDPE PN10	Y									N																										
Nyakabungo&Mjimwema	Extension	P-NM08	J-NM10	J-NM27	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM11	J-2526N	J-NM09	DN250 HDPE PN10	Y	Households/Business Premises with high risk	Y	N	Y	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	Y	N	N	N	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM14	J-NM14	J-NM10	DN200 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	Y	N	N	Y	Y	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM15	J-NM15	J-NM16	Existing DN300 DI Pipe	Y									Y																										
Nyakabungo&Mjimwema	Extension	P-NM16	J-NM30	J-NM29	DN250 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	N
Nyakabungo&Mjimwema	Extension	P-NM19	NYASHAN	J-NM15	Existing DN600 DI Pipe	Y									Y																										
Nyakabungo&Mjimwema	Extension	P-NM24	J-NM23	J-2518N	Flow Control Valve	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	N	N
															N																										
															N																										
															N																										

Copied from COWI's Hydraulic Model Excel Spreadsheet

		Location (UTM - ARC 1960) Zone 36M		
Node Ref	Node Type	Easting	Northing	Elevation
J-2514N	Demand Node	490519.29	9722731.27	1290.00
J-2515N	Demand Node	490190.27	9722918.88	1240.35
J-2516N	Demand Node	490292.20	9722934.82	1256.91
J-2518N	Demand Node	490715.85	9723079.15	1286.00
J-2519N	Demand Node	489490.94	9723518.49	1215.45
J-2520N	Demand Node	489663.97	9723724.12	1252.14
J-2521N	Demand Node	489631.37	9723854.51	1246.66
J-2522N	Demand Node	489567.76	9724153.40	1213.66
J-2523N	Demand Node	489916.19	9724214.15	1240.30
J-2524N	Demand Node	489681.33	9724433.81	1208.50
J-2525N	Demand Node	489789.10	9724075.66	1242.51
J-2526N	Demand Node	489887.57	9723946.77	1257.84
J-2527N	Demand Node	490061.83	9723938.51	1249.81
J-2528N	Demand Node	490026.65	9724148.97	1243.29
J-2529N	Demand Node	490183.58	9724362.27	1212.73
J-2530N	Pump Intake	490305.27	9724301.15	1203.57
J-2531N	Demand Node	490315.61	9723730.05	1246.66
J-2532N	Demand Node	490544.96	9723806.34	1244.39
J-2533N	Demand Node	490570.89	9724210.96	1206.17
J-2534N	Demand Node	490756.59	9723766.02	1236.03
J-NM01	Junction	490164.15	9723874.23	1240.68
J-NM04	Junction	490155.18	9723869.59	1240.68
J-NM05	Junction	490059.88	9723930.34	1249.81
J-NM06	Junction	489893.81	9723940.05	1257.84
J-NM07	Junction	489895.95	9723842.86	1263.00
J-NM08	Junction	489894.37	9723839.60	1263.00
J-NM09	Junction	489887.16	9723841.54	1263.00
J-NM10	Junction	490313.25	9723721.88	1246.66
J-NM14	Junction	490443.35	9723248.39	1265.00
J-NM15	Tapping Point	491804.78	9721844.63	1309.00
J-NM16	Demand Node	490746.00	9722159.00	1260.50
J-NM23	Junction	490765.50	9722896.00	1289.00
J-NM27	Junction	490161.33	9723866.02	1240.68
J-NM29	Demand Node	490610.09	9722800.10	1283.00
J-NM30	Junction	490746.75	9722161.35	1260.50
TNK1	Storage Tank	489893.63	9723837.83	1263.00
NYASHAN	Storage Tank	491807.00	9721845.00	1304.00

Capripoint Pipe Schedule - Prelim Issue Register

COWI DRAWING REFERENCE		COWI PIPE ID REFERENCE			Pipe Spec	GPS Photo survey?	Social Conditions: Qualitative Analysis for HH/Business	No. HH/ Businesses		Permanent Impact: Compensation for land or other assets			Temporary impact: Compensate lost income / minimise disturbance				Engineering issues & Permits: Connection to Ext'g Pipe	Road Crossing?			Other Services?					Environment: Land Use?								Ground Conditions?			Gradient				Proximity to open water			
Area	Ext/ Rehab	Pipe ID	Start Node	End Node	Nominal Diameter & Rating / Valve	Y/N		Right	Left	Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting	Y/N	Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial/ Industrial	Open/ Agri	Other	Formal Settlements	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
Capripoint	Extension	P-2409	J-2202	6321-B	DN63 HDPE PN10	Y	No Households/Business premises nearby	#	#	Y	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A	N	Y	Y	N	Y	Y	N	Y	N	N	N
Capripoint	Extension	P-2411	6320-B	TNK1	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	N	Y	Y	N	Y	Y	N	Y	N	N	N
Capripoint	Extension	P-0046N	J-2438N	J-1267	DN90 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	N	Y	Y	N	Y	Y	N	Y	N	N	N
Capripoint	Extension	P-0047N	J-2439N	J-2438N	DN110 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	N	Y	Y	N	Y	Y	N	Y	N	N	N
Capripoint	Extension	P-0048N	J-2439N	J-2440N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	N	Y	Y	N	Y	Y	N	Y	N	N	N
Capripoint	Extension	P-2413	TNK1	J-2439N	DN110 HDPE PN10	Y	Households/Business Premises with low risk	#	#	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Low Density	N	Y	Y	N	Y	Y	N	Y	N	N	N

Kitangiri Pipe Schedule Register

COWI DRAWING REFERENCE	COWI PIPE ID REFERENCE		Pipe Spec	GPS Photo survey?	Social Conditions: Qualitative Analysis for HH/Business	Permanent Impact: Compensation for land or other assets			Temporary impact: Compensate lost income / minimise disturbance				Engineering issues & Permits: Connection to Ext'g Pipe	Road Crossing?			Other Services?					Environment: Land Use?							Ground Conditions?			Gradient				Proximity to open water			
Ext/ Rehab	Pipe ID	End Node	Nominal Diameter & Rating / Valve	Y/N		Minor - buried	Medium - lost land	Major - demolition	Access	Dust	Noise	Vibration/ Blasting	Y/N	Earth	Small Tarmac	Large Tarmac	Electric	Sewer	Open Drain	Telecom	Other	High Informal	Med Density Informal	Low Density Informal	Suberb	Commercial / Industrial	Open/ Agri	Other	Sand etc.	Sand/ Boulders	Shallow Bedrock	Flat	Visible slope	Steep	Very Steep	None	River / Stream	Wetland	Lake
Extension	P-0018N	J-2400N	DN50 HDPE PN10	Y	Households/Business Premises with high risk	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0004N	J-2402N	DN50 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0026N	J-2401N	DN65 STEEL WP71	Y	Households/Business Premises with low risk	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0039N	J-2405N	DN150 STEEL WP36.3	N	Households/Business Premises with low risk	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	N	Y	N	Y	N	N	Y	N	N	N
Extension	P-0044N	J-2407N	DN160 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0003N	J-2406N	DN50 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0043N	J-2408N	DN110 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0015N	J-2409N	DN50 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0042N	J-2410N	DN110 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0013N	J-2411N	DN63 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		Y	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0041N	J-2412N	DN110 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0005N	J-2413N	DN50 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	N	N	N	Y
Extension	P-0025N	J-2414N	DN90 HDPE PN10	N	No Households/Business premises nearby	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0029N	J-2415N	DN63 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0007N	J-2416N	DN50 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0008N	J-2417N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0010N	J-2418N	DN63 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0028N	J-2419N	DN90 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0011N	J-2420N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0012N	J-2421N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0045N	J-2422N	DN110 HDPE PN10	N	No Households/Business premises nearby	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0030N	J-2423N	DN110 HDPE PN10	N	No Households/Business premises nearby	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	Y	Y	N	N	Y	N	N	N
Extension	P-0014N	J-2424N	DN63 HDPE PN10	N	Households/Business Premises with medium risk	Y	Y	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	Y		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0024N	J-2425N	DN75 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	N	N	N	Y
Extension	P-0032N	J-2426N	DN90 HDPE PN10	N	No Households/Business premises nearby	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0006N	J-2427N	DN50 HDPE PN10	N	No Households/Business premises nearby	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0031N	J-2428N	DN90 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0016N	J-2429N	DN63 HDPE PN10	N	Households/Business Premises with medium risk	Y	Y	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0001N	J-2430N	DN50 HDPE PN12.5	N	No Households/Business premises nearby	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0017N	J-2431N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0023N	J-2432N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0020N	J-2434N	DN50 HDPE PN10	N	No Households/Business premises nearby	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	N	N	Y	N	N	Y	N	N	N
Extension	P-0002N	J-2436N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-0022N	J-2437N	DN75 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0033N	J-2403N	DN150 STEEL WP36.3	N	No Households/Business premises nearby	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	N	Y	N	Y	N	N	Y	N	N	N
Extension	P-0040N	J-2540	DN100 STEEL WP53.5	N	No Households/Business premises nearby	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		N	N	Y	N	Y	N	N	Y	N	N	N
Extension	P-0036N	J-KIT02	DN100 STEEL WP53.5	N	Households/Business Premises with low risk	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N		N	N	Y	N	Y	N	N	Y	N	N	N
Extension	P-0027N	J-1891	DN75 HDPE PN10	Y	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	N		N	Y	Y	N	Y	Y	N	Y	N	N	N
Extension	P-0009N	J-2435N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N		N	Y	Y	N	Y	N	N	Y	N	N	N
Extension	P-KTN01	J-2433N	DN50 HDPE PN10	N	Households/Business Premises with low risk	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	N		Y	Y	N	N	Y	Y	N	Y	N	N	N

Appendix 10. Proposed Scheduling of the Construction Works

This appendix provides further detail on a possible prioritization of the constructions works, i.e. starting with those areas where no PAPs are expected, and then gradually proceeding to the remaining areas as soon as the PAP issues have been resolved.

B1 - Kitangiri WS Extension Works

Nr. Of Pipe Sect.	COWI PIPE ID REFERENCE	Pipe Spec	Pipe Length, m	Qualitative Analysis for HH/Business	Remark
	Pipe ID	Nominal Diameter & Rating / Valve			
1	P-0018N	DN50 HDPE PN10	0.2	Households/Business Premises with high risk	Jointly discussion on the construction methodoloy between PMU/PMC/SC/Contractor is needed before the construction stage
2	P-0004N	DN50 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
3	P-0026N	DN65 STEEL WP71	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
4	P-0039N	DN150 STEEL WP36.3	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
5	P-0044N	DN160 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
6	P-0003N	DN50 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
7	P-0043N	DN110 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
8	P-0015N	DN50 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
9	P-0042N	DN110 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
10	P-0013N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
11	P-0041N	DN110 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
12	P-0005N	DN50 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
13	P-0025N	DN90 HDPE PN10	0.1	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
14	P-0029N	DN63 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
15	P-0007N	DN50 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
16	P-0008N	DN50 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
17	P-0010N	DN63 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
18	P-0028N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
19	P-0011N	DN50 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
20	P-0012N	DN50 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
21	P-0045N	DN110 HDPE PN10	#N/A	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
22	P-0030N	DN110 HDPE PN10	0.7	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
23	P-0014N	DN63 HDPE PN10	0.6	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
24	P-0024N	DN75 HDPE PN10	1.0	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
25	P-0032N	DN90 HDPE PN10	0.3	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
26	P-0006N	DN50 HDPE PN10	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
27	P-0031N	DN90 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
28	P-0016N	DN63 HDPE PN10	#N/A	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
29	P-0001N	DN50 HDPE PN12.5	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
30	P-0017N	DN50 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
31	P-0023N	DN50 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
32	P-0020N	DN50 HDPE PN10	#N/A	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
33	P-0002N	DN50 HDPE PN10	#N/A	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
34	P-0022N	DN75 HDPE PN10	#N/A	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
35	P-0033N	DN150 STEEL WP36.3	0.05	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
36	P-0040N	DN100 STEEL WP53.5	#N/A	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
37	P-0036N	DN100 STEEL WP53.5	#N/A	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
38	P-0027N	DN75 HDPE PN10	1.0	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
39	P-0009N	DN50 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
40	P-KTN01	DN50 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side

B2 - Nyasaka WS Extension Works

Nr. Of Pipe Sect.	COWI PIPE ID REFERENCE Pipe ID	Pipe Spec Nominal Diameter & Rating / Valve	Pipe Length, km	Qualitative Analysis for HH/Business	Remark
1	P-0060N	DN63 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
2	P-0062N	DN63 HDPE PN10	0.6	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
3	P-0110N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
4	P-0101N	DN63 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
5	P-0064N	DN63 HDPE PN10	0.5	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
6	P-0103N	DN63 HDPE PN10	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
7	P-0078N	DN63 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
8	P-0067N	DN63 HDPE PN10	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
9	P-0050N	DN200 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
10	P-0123N	DN200 HDPE PN10	0.8	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
11	P-0109N	DN160 HDPE PN10	0.6	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
12	P-0077N	DN63 HDPE PN10	0.7	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
13	P-0112N	DN160 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
14	P-0099N	DN110 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
15	P-0070N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
16	P-0090N	DN63 HDPE PN10	0.9	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
17	P-0069N	DN63 HDPE PN10	0.8	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
18	P-0068N	DN90 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
19	P-0113N	DN160 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
20	P-0066N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
21	P-0114N	DN110 HDPE PN10	0.4	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
22	P-0115N	DN110 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
23	P-0065N	DN50 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
24	P-0096N	DN110 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
25	P-0063N	DN50 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
26	P-0102N	DN110 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
27	P-0089N	DN110 HDPE PN10	0.1	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
28	P-0052N	DN50 HDPE PN12.5	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
29	P-0092N	DN63 HDPE PN10	0.1	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
30	P-0071N	DN50 HDPE PN10	0.6	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
31	P-0059N	DN50 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
32	P-0058N	DN50 HDPE PN10	0.1	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
33	P-0118N	DN63 HDPE PN10	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
34	P-0120N	DN90 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
35	P-0119N	DN160 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
36	P-0130N	DN200 HDPE PN12.5	1.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
37	P-0108N	DN150 STEEL WP36.3	0.001		
38	P-0107N	DN160 HDPE PN10	0.4	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
39	P-0073N	DN63 HDPE PN10	0.4	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
40	P-0072N	DN63 HDPE PN10	0.6	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
41	P-NYK01	DN160 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
42	P-NYK02	DN90 HDPE PN10	0.1	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
43	P-NYK03	DN200 STEEL WP27.9	0.0	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
44	P-NYK04	DN80 STEEL WP60.8	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
45	P-NYK05	DN150 STEEL WP36.3	0.009		
46	P-NYK06	DN110 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
47	P-NYK07	DN63 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
48	P-NYK08	DN63 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
49	P-NYK09	DN150 STEEL WP36.3	0.0002		
50	P-NYK10	DN150 STEEL WP36.3	0.04	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
51	P-NYK11	DN150 STEEL WP36.3	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
52	P-NYK12	DN150 STEEL WP36.3	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
53	P-NYK13	DN100 STEEL WP53.5	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
54	P-NYK14	DN200 STEEL WP27.9	0.0	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
55	P-NYK15	DN160 HDPE PN10	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process

B3 - Mji Mwema Nyakabungo WS Extension Works

Nr. Of Pipe Sect.	COWI PIPE ID REFERENCE Pipe ID	Pipe Spec Nominal Diameter & Rating / Valve	Pipe Length, km	Qualitative Analysis for HH/Business	Remark
1	P-0057N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
2	P-0056N	DN63 HDPE PN10	0.3	Households/Business Premises with high risk	Jointly discussion on the construction methodoloy between PMU/PMC/SC/Contractor is needed before the construction stage
3	P-0098N	DN110 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
4	P-0055N	DN90 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
5	P-0088N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
6	P-0087N	DN63 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
7	P-0053N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
8	P-0075N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
9	P-0086N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
10	P-0085N	DN90 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
11	P-0117N	DN90 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
12	P-0116N	DN110 HDPE PN10	0.3	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
13	P-0122N	DN200 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
14	P-0111N	DN110 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
15	P-0061N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
16	P-0084N	DN90 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
17	P-0051N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
18	P-0121N	DN160 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
19	P-0074N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
20	P-0094N	DN110 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
21	P-0125N	DN200 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
22	P-0133N	DN200 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
23	P-0054N	DN63 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
24	P-NM01	DN200 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
25	P-NM03	DN200 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
26	P-NM04	DN200 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
27	P-NM05	DN200 HDPE PN10	0.1	Households/Business Premises with high risk	Jointly discussion on the construction methodoloy between PMU/PMC/SC/Contractor is needed before the construction stage
28	P-NM06	DN200 HDPE PN10	0.002		
29	P-NM07	DN250 HDPE PN10	0.01		
30	P-NM08	DN200 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
31	P-NM11	DN250 HDPE PN10	0.1	Households/Business Premises with high risk	Jointly discussion on the construction methodoloy between PMU/PMC/SC/Contractor is needed before the construction stage
32	P-NM14	DN200 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
33	P-NM15	Existing DN300 DI Pipe	1.1		
34	P-NM16	DN250 HDPE PN10	0.7	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
35	P-NM19	Existing DN600 DI Pipe	0.0		
36	P-NM24	Flow Control Valve	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side

B4 - Capri Point WS Extension Works

Nr. Of Pipe Sect.	COWI PIPE ID REFERENCE Pipe ID	Pipe Spec Nominal Diameter & Rating / Valve	Pipe Length, m	Qualitative Analysis for HH/Business	Remark
1	P-2409	DN63 HDPE PN10	#N/A	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
2	P-2411	DN63 HDPE PN10	#N/A	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
3	P-0046N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
4	P-0047N	DN110 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
5	P-0048N	DN63 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
6	P-2413	DN110 HDPE PN10	#N/A	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side

B5 - Bugarika WS Extension Works

Nr. Of Pipe	COWI PIPE ID REFERENCE Pipe ID	Pipe Spec Nominal Diameter & Rating / Valve	Pipe Length, km	Qualitative Analysis for HH/Business	Remark
1	P-0104N	DN110 HDPE PN10	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
2	P-0097N	DN90 HDPE PN10	0.7	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
3	P-0100N	DN90 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
4	P-0124N	DN90 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
5	P-0080N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
6	P-0106N	DN160 HDPE PN10	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
7	P-0105N	DN160 HDPE PN10	0.7	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
8	P-0093N	DN110 HDPE PN10	0.9	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
9	P-0076N	DN90 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
10	P-0083N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
11	P-0127N	DN160 HDPE PN10	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
12	P-0095N	DN160 HDPE PN10	0.7	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
13	P-0082N	DN90 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
14	P-0079N	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
15	P-0128N	DN160 HDPE PN10	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
16	P-0081N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
17	P-0129N	DN160 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
18	P-0132N	DN63 HDPE PN10	0.7	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
19	P-0132M	DN250 HDPE PN10	1.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
20	P-BG01	DN100 STEEL WP53.5	#N/A	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
21	P-BG03	DN200 HDPE PN10	#N/A	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
22	P-BG05	DN250 HDPE PN10	0.4	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
23	P-BG06	DN250 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
24	P-BG07	DN150 STEEL WP36.3	#N/A	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
25	P-BG08	DN110 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
26	P-BG11	DN63 HDPE PN10	0.2	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
27	P-BG12	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
28	P-BG13	DN63 HDPE PN10	#N/A	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side

B6 - Nyegezi WS Extension Works

Nr. Of Pipe Sect.	COWI PIPE ID REFERENCE	Pipe Spec	Pipe Length, km	Qualitative Analysis for HH/Business	Remark
	Pipe ID	Nominal Diameter & Rating / Valve			
1	P-0140N	DN90 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
2	P-0141N	DN90 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
3	P-0142N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
4	P-0143N	DN200 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
5	P-0144N	DN200 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
6	P-0145N	DN110 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
7	P-0146N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
8	P-0147N	DN90 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
9	P-0148N	DN63 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
10	P-0149N	DN63 HDPE PN10	0.8	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
11	P-0150N	DN63 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
12	P-0151N	DN90 HDPE PN10	0.6	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
13	P-0152N	DN160 HDPE PN10			
14	P-0153N	DN250 HDPE PN10	0.3	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
15	P-0154N	DN250 STEEL WP31	0.2	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
16	P-0155N	DN63 HDPE PN10			
17	P-0156N	DN110 HDPE PN10	0.4	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
18	P-0157N	DN90 HDPE PN10	0.4	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
19	P-0158N	DN63 HDPE PN10	0.7	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
20	P-0159N	DN200 STEEL WP27.9			
21	P-0160N	DN200 HDPE PN10	2.1	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
22	P-0162N	DN63 HDPE PN10	0.5	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
23	P-NYG1	DN200 STEEL WP27.9			
24	P-NYG2	DN250 STEEL WP31	0.1	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
25	P-NYG3	DN200 STEEL WP27.9	0.97	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
26	P-NYG4	DN200 STEEL WP27.9	0.3	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
27	P-NYG5	DN250 HDPE PN10	0.2	No Households/Business premises nearby	No potential PAPs as there is enough reserve for the pipeline routes either side
28	P-NYG6	DN63 HDPE PN10	0.3	Households/Business Premises with low risk	No potential PAPs as there is enough reserve for the pipeline routes either side
29	P-NYG7	DN63 HDPE PN10	0.1	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process
30	P-NYG8	DN250 STEEL WP31	0.1	Households/Business Premises with medium risk	The potential PAPs need to be consulted and receive their concerns before the construction process

B8 - Makongoro Zone WS Rehabilitation Works

EXISTING PIPE ID & SPECs			Pipe Spec	Pipe Length, km	Qualitative Analysis for HH/Business	Road Side of the Defective/Replacement Pipe from Start Node	Remark
Nr. Of Pipe Sect.	Start Node	End Node	Nominal Diameter & Rating / Valve				
1	J01	J02	OD160 HDPE	0.5	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
2	J02	J03	OD160 HDPE	0.05	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
3	J03	J04	OD160 HDPE	0.3	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
4	J04	J05	OD160 HDPE	0.2	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
5	J05	JO6	OD160 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
6	JO6	J07	OD160 HDPE	0.2	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
7	J03	J08	OD160 HDPE	0.1	Households/Business Premises with high risk	R.H.S	One identified PAP (built the building annex on the existing replaceable pipe) need to be consulted and receive his concerns before the construction process
8	J05	J08	OD160 HDPE	0.2	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
9	JO6	J10	OD160 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
10	J08	J09	OD160 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
11	J09	J10	OD160 HDPE	0.2	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
12	J02	J11	OD160 HDPE	0.2	Households/Business Premises with medium risk	L.H.S	One potential PAP (with existing fence structure on the top of the replaceable pipe) need to be consulted and receive his concerns before the construction process
13	J11	J12	OD160 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
14	J09	J12	OD160 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
15	J12	J13	OD160 HDPE	0.1	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
16	J13	J40	OD160 HDPE	0.3	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
17	J14	J21	OD200 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
18	J21	J19	OD160 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
19	J19	J15	OD160 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
20	J13	J15	OD160 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
21	J15	J16	OD100 HDPE	0.1	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
22	J16	J17	OD110 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
23	J17	J18	OD110 HDPE	0.2	Households/Business Premises with medium risk	L.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
24	J19	J20	OD110 HDPE	0.3	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
25	J21	J22	OD160 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
26	J22	J23	OD110 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
27	J23	J25	OD110 HDPE	0.03	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
28	J25	J26	OD110 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
29	J26	J27	OD110 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
30	J27	J28	OD110 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
31	J26	J29	OD110 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
32	J22	J30	OD160 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
33	J32	J33	OD90 HDPE	0.6	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
34	J33	J34	OD90 HDPE	0.3	Households/Business Premises with medium risk	L.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
35	J31	J37	OD110 HDPE	0.8	Households/Business Premises with medium risk	Both	The potential PAPs need to be consulted and receive their concerns before the construction process
36	J37	J38	OD110 HDPE	0.03	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
37	J38	J39	OD110 HDPE	0.3	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
38	J39	J41	OD110 HDPE	0.1	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side

B9 - Nyakato Zone WS Rehabilitation Works

EXISTING PIPE ID & SPECs			Pipe Spec	Pipe Length, km	Qualitative Analysis for HH/Business	Road Side of the Defective/Replacement Pipe from Start Node	Remark
Nr. Of Pipe Sect.	Start Node	End Node	Nominal Diameter & Rating / Valve				
1	J49	J50	OD225 HDPE	0.3	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
2	J50	J51	OD225 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
3	J51	J52	OD225 HDPE	0.0	No Households/Business premises nearby	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
4	J52	J53	OD225 HDPE	0.4	Households/Business Premises with medium risk	L.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
5	J53	J54	OD225 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
6	J54	J55	OD225 HDPE	0.0	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
7	J55	J56	OD225 HDPE	0.4	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
8	J56	J57	OD225 HDPE	0.6	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
9	J57	J58	OD225 HDPE	0.1	Households/Business Premises with medium risk	L.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
10	J58	J59	OD225 HDPE	0.4	Households/Business Premises with medium risk	L.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
11	J59	J60	OD225 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
12	J60	J61	OD225 HDPE	0.0	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
13	J61	J62	OD225 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
14	J62	J63	OD225 HDPE	0.1	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
15	J63	J64	OD225 HDPE	0.4	Households/Business Premises with medium risk	R.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
16	J64	J65	OD225 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
17	J65	J66	OD225 HDPE	0.4	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
18	J66	J67	OD225 HDPE	0.3	Households/Business Premises with medium risk	R.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
19	J67	J68	OD225 HDPE	0.2	Households/Business Premises with medium risk	R.H.S	The potential PAPs need to be consulted and receive their concerns before the construction process
20	J68	J69	OD225 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
21	J69	J70	OD225 HDPE	0.3	Households/Business Premises with low risk	Both	No potential PAPs as there is enough reserve for the pipeline routes either side
22	J70	J71	OD225 HDPE	0.2	Households/Business Premises with low risk	L.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
23	J71	J72	OD225 HDPE	0.3	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
24	J72	J73	OD225 HDPE	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
25	J73	J74	OD225 HDPE	0.4	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side

B10 - Kenyatta Road WS Rehabilitation Works

EXISTING PIPE ID & SPECs			Pipe Spec	Pipe Length, km	Qualitative Analysis for HH/Business	Road Side of the Defective/Replacement Pipe from Start Node	Remark
Nr. Of Pipe Sect.	Start Node	End Node	Nominal Diameter & Rating / Valve				
1	J77	J78	DN250 HDPE PN10	1.0	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
2	J78	J79	DN250 HDPE PN10	0.01	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
3	J79	J80	DN250 HDPE PN10	0.2	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
4	J80	J81	DN250 HDPE PN10	0.01	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
5	J81	J82	DN250 HDPE PN10	0.1	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side
6	J82	J83	DN250 HDPE PN10	0.3	Households/Business Premises with low risk	R.H.S	No potential PAPs as there is enough reserve for the pipeline routes on this side

Appendix 11. MoWI's RPF Endorsement Letter

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WATER AND IRRIGATION

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E-mail: psmw@maji.go.tz

Ubungo-Maji,
426, Morogoro Road
14473 Dar es Salaam.

In reply please quote:

Ref. No. **FA 379/599/01A**

8th January, 2016

CEO
European Investment Bank
98-100 Boulevard Konrad Adenauer
L-2950 Luxembourg- Kirchberg, Grand Duche,
Luxembourg

RE: ENDORSEMENT LETTER FOR RESATTLEMENT PLANNING FRAMEWORK (RPF) FOR THE LAKE VICTORIA WATER SUPPLY AND SANITATION PROGRAMME (LVWATSAN)

Reference is made to the above title,

The Lake Victoria Water and Sanitation Initiative (LVWATSAN) is a regional programme operated in partnership with the East Africa Community (EAC) and UN-HABITAT. The European Investment Bank (EIB) is funding the implementation of project which consists of the expansion and upgrading of the water supply and sanitation in Mwanza and three of its satellite towns, as well as sanitation in the towns of Musoma and Bukoba.
Within the LVWATSAN-Mwanza Project there is the WASH programme for schools, which will be rolled out during the project life-cycle. The LVWATSAN-Mwanza Project is part of the basket fund of the Water Sector Development Programme (WSDP).

A key component of the LVWATSAN-Mwanza Project is to expand the coverage of water and sanitation into informal urban areas, which will serve poor and vulnerable groups. The informal areas represent a large proportion of the urban population most of which inhabit topographically challenging areas.

It is realised that in the course of this project, temporary and permanent land acquisition will be inevitable. As a consequence, some resettlement of project-affected people (PAPs) will occur. The triggers EIB's 2013 Social Standard 6 on Involuntary Resettlement, the GoT land acquisition act and the World Bank's Involuntary Resettlement Policy (OP/BP 4.12), which has already been agreed between parties of the WSDP to apply the World Bank Safeguard Policies in the Programme.

The MoWI, as part of the DPs requirements for the WSDP, developed a Resettlement Policy Framework in 2008 for the Programme in order to comply with the Bank's Involuntary Resettlement Policy (OP/BP 4.12). The LVWATSAN initiative will be

financed by the European Investment Bank (EIB), and as part of its requirements, also prepared the document "Resettlement Planning Framework" for the specific initiative (RPF-LVWATSAN). The RPF-LVWATSAN has taken into account the national law, mainly the Land Act; the EIB's Standard 6; and the 2015 RPF of the MoWI, which takes into account the World Bank's OP/BP 4.12.

It is agreed that the responsibility for the implementation of these instruments are: Mwanza Urban Water Supply & Sanitation Authority (MWAUWASA), the Bukoba Urban Water and Sanitation Authority (BUWASA) and the Musoma Urban Water and Sanitation Authority (MUWASA). The MoWI will have an oversight role in the implementation of the instrument, which will apply throughout the preparation and implementation of the LVWATSAN- Mwanza Projects.
The Ministry of Water and Irrigation (MoWI) through Mwanza Urban Water and Sanitation Authority (MWAUWASA) is the owner of the document and is committed to comply and implement the RPF as defined bellow:-

- The exact locations of displacement, acquisition and the households that may require relocation remain unknown until at the detailed design stage; in such circumstances a RPF-LVWATSAN is applicable in anticipation of project activities.
- As part of the Tanzanian Government's National Water Sector Development Programme (WSDP), the Resettlement Policy Framework (RPF) prepared, and up-dated (June 2015), the same has been enhanced, tailored and modified, where necessary, to meet the purposes of the EIB LVWASAN Mwanza Project as RPF-LVWATSAN.
- Therefore MoWI understand that the RPF-LVWATSAN is geared to strengthen policy application in the fields of land acquisition, resettlement, compensation and capacity building to be in line with EIB's Standard 6 on Involuntary Resettlement and the Tanzania land acquisition legislations;
- The framework shall provide guidelines to ensure that any possible adverse impacts caused by the EIB's LVWATSAN-Mwanza Project activities are addressed through appropriate mitigation measures, designed to reduce risk, particularly to vulnerable groups such as those less able to look after themselves (children, elderly, widows, single mothers) and other vulnerable groups.
- MoWI acknowledge that methods used in preparation of RPF-LVWATSAN are based on national policy requirements and regulations, the EIB Standard 6, which takes into account the World Bank Safeguard Policy (OP/BP 4.12) on Involuntary Resettlement. Where the national law is less stringent, the EIB and World Bank standards take precedent.
- The Ministry accept the eligibility criteria define in the Framework for identification of Project Affected People (PAPs) and their entitlements. It also provides schedules and indicative budget that will take care of anticipated resettlement and guide the subsequent elaboration of location specific RAPs. Additionally, provides a framework for monitoring and evaluating any acquisition and compensation that takes place.

The underline principal objectives of the RPF-LVWATSAN which are applicable in WSDP projects are to:

- avoid or, at least minimize, project-induced displacement whenever feasible by

exploring alternative project designs;

- avoid and/or prevent forced evictions and provide effective remedy to minimize their negative impacts should prevention fail;
- ensure that any eviction which may be exceptionally required is carried out lawfully, respects the rights to life, dignity, liberty and security of those affected who must have access to an effective remedy against arbitrary evictions;
- respect individuals', groups', and communities' right to adequate housing and to an adequate standard of living, as well as other rights that may be impacted by resettlement;
- respect right to property of all affected people and communities and mitigate any adverse impacts arising from their loss of assets, or access to assets and/or restrictions of land use, whether temporary or permanent, direct or indirect, partial or in their totality.
- assist all displaced persons to improve, or at least restore, their former livelihoods and living standards and adequately compensate for incurred losses, regardless of the character of existing land tenure arrangements (including title holders and those without the title) or income earning and subsistence strategies;
- uphold the right to adequate housing, promoting security of tenure at resettlement sites;
- ensure that resettlement measures are designed and implemented through the informed and meaningful consultation and participation of the project affected people throughout the resettlement process; and
- Give particular attention to vulnerable groups, including women and minorities, who may require special assistance and whose participation should be vigilantly promoted.
- apply the EIB SAGN 6 and the guidelines in the Framework throughout the preparation and implementation of the LVWATSAN-Mwanza Project. When a RAP is required, it will be prepared in accordance with guidance provided in the Framework and in accordance with EIB SAGN 6.
- uphold international social safeguard standards, sufficient personnel and allocate financial resources to implement measures that meet the needs of the persons affected or for those persons displaced from their land and assets.
- present the document to the main stakeholders and disclose according with the EIB standards and the RPF of the MoWI.

With this understanding the Resettlement Planning Framework (RPF) is officially endorsed.

Eng. Mbogo Futakamba
Permanent Secretary

Appendix 12. MoWI's SEP Endorsement Letter

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WATER AND IRRIGATION

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Ubungo-Maji,
426, Morogoro Road
14473 Dar es Salaam.

In reply please quote:

Ref. No. **FA379/599/01A**

8th January , 2016

CEO
European Investment Bank
98-100 Boulevard Konrad Adenauer
L-2950 Luxembourg- Kirchberg, Grand Duche,
Luxembourg
..

RE: ENDORSEMENT LETTER FOR STAKEHOLDER ENGAGEMENT PLAN (SEP) FOR THE LAKE VICTORIA WATER SUPPLY AND SANITATION PROGRAMME (LVWATSAN)

Reference is made to the above title,

The Lake Victoria Water Supply and Sanitation Programme (LVWATSAN) is a regional programme being implemented in partnership with the East Africa Community (EAC) and UN-Habitat. The program focus on reduction of pollution flowing into the lake through improvement in sustainable water supply and sanitation infrastructure in the urban centres within the Lake Victoria Basin shared by the five East African Community Countries.

The Lake Victoria Mwanza project funded by the European Investment Bank (EIB) and the French Agency for Development (AFD) to improve on the extension and upgrading of water supply and sanitation. The EIB and AFD entered into a finance contract with the United Republic of Tanzania to implement the project in Mwanza town and satellite towns of Misungwi, Lamadi and Magu for EIB and Bukoba and Musoma towns for AFD. At completion there would be the significant improvement in water supply, sanitation and public health conditions in the six (6) target towns.

In order for the project to accomplish successfully the intended project outcome, active participation of local population and institution will be required. As a consequence in some of the target project areas stakeholders in communities will be affected by project interventions.

Henceforth the project engages in the plan the 2013 EIB Standard 7 on Rights and Interests of Vulnerable Groups and Standard 10 Stakeholder Engagement.

The EIB and GoT prepared the Stakeholder Engagement Plan (SEP) for the EIB financed operation for LVWATSAN Mwanza Project. As part of the EIB's 2013 Social and Environmental Standards, a Stakeholder Standard guideline was established which lead in prepared of SEP in order to ensure compliance to EIB'S Standards 7 and 10.

The GoT in this context the Ministry of Water and Irrigation (MoWI) through Mwanza Urban Water and Sanitation Authority (MWAUWASA) is the owner of this document and is commited to comply and implement the SEP as defined bellow:-

- Promote stakeholders engagement and protecting the rights of vulnerable groups in the project area of the LVWATSAN Mwanza, Musoma and Bukoba and the three growing satellite towns of Misungwi, Lamadi and Magu in order to facilitate an operational link with the utility in Mwanza in the future;
- deploy the two standards EIB'S Standards 7 and 10 to create the enabling environment for effective engagement with local communities and all other key stakeholders throughout the remainder of the life cycle of (LVWATSAN) Mwanza Project, and will seek to avoid the exposure of vulnerable populations to project-related risks and adverse impacts;
- Commit to a successful stakeholder engagement by actively engages with stakeholders, listen to them, build a relationship with them and then respond to their concerns in a mutually beneficial way. .
- give stakeholders a voice and choices throughout the preparation, implementation and monitoring phases of a project result in better project outcomes;
- introduce guiding principles and the approach of the SEP. These reflect the policies of the EIB, and the Government of Tanzania that address the rights of vulnerable groups and stakeholder engagement;
- uphold an open, transparent and accountable dialogue with all relevant stakeholders at the local level targeted by LVWATSAN-Mwanza Project operations;
- Ensure that all stakeholders are properly identified and engaged;
- Engage stakeholders in the disclosure process, engagement and consultations in an appropriate and effective manner throughout the project lifecycle, in line with the principles of public participation, non-discrimination and transparency;
- Ensure that the relevant stakeholders, including commonly marginalised groups on account of gender, poverty, educational profile and other elements of social vulnerability, are given equal opportunity and possibility to voice their opinions and concerns, and that these are accounted for in the project decision-making;
- Duly verify and assess that the quality and process of engagement undertaken by third parties on the project conform to the provisions included in the EIB standards;
- Agree that the Ministry of Finance as the borrower will have the ultimate responsibility to ensure that the LVWATSAN Mwanza project complies with EIB standard 7 and 10 in respect of environmental and social risks that may emerge during implementation, through delegation to the Ministry of Water as the Implementing Authority (IA);
- As duty-bearers, the local authorities in the project area shall have a legal obligation to protect, respect and fulfil human rights of all city residents, including the provision of water and sanitation services;
- The EIB Standards 7 and 10, respectively on Vulnerable Groups and Stakeholder Engagement, are of most relevance. In addition to having oversight of the overall stakeholder engagement process, ESIAs and A-RAP, EIB will also oversight for the project interventions in Mwanza and the satellite towns, while AFD will exercise oversight responsibility with respect to the implementation of the project in Bukoba and Musoma towns;

- UN-Habitat will assist MWAUWASA to implement the stakeholder activities by establishing stakeholders into Multi Stakeholder Forums (MSFs). The MSF shall represent the affected communities at ward, municipality, town and project levels for Mwanza, and for each of the major communities in informal settlements of Misungwi, Magu and Lamadi;
- Accordingly the consultant shall commit to the EIB Statement of Environmental and Social Principles and Standards (2009) that articulate EIB's commitments to environmental and social sustainability.

With this understanding the Stakeholder Engagement Plan (SEP) is officially endorsed.

Eng. Mbogo Futakamba
Permanent Secretary