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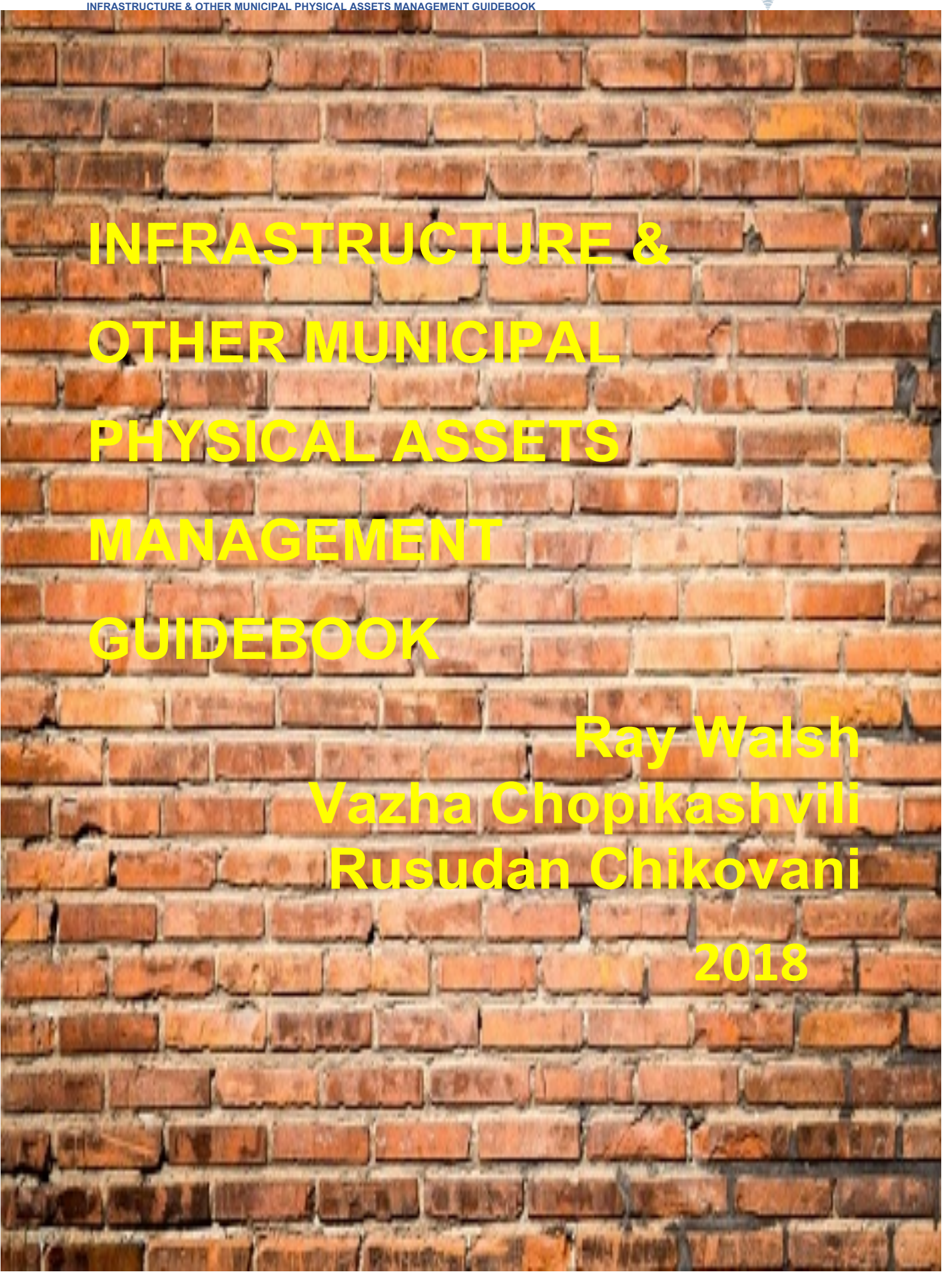

INFRASTRUCTURE & OTHER MUNICIPAL PHYSICAL ASSETS MANAGEMENT GUIDEBOOK

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ECORYS

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TABLE OF ABBREVIATIONS:

AAMP	*Annual Asset Management Plan*
AC	*Air Conditioning*
AM	*Asset Management*
AMD	*Asset Management Database*
AMP	*Asset Management Policy*
CBA	*Cost Benefit Analysis*
CIP	*Capital Investment Planning*
FS	*Feasibility Study*
GEL	*Georgian Lari*
GIS	*Geographic Information System*
GIZ	*Gesellschaft für Internationale Zusammenarbeit*
GPS	*Global Positioning System*
IT	*Information Technology*
KPI	*Key Performance Indicator*
KM	*Kilometre*
PCN	*Project Concept Note*
LCM	*Life Cycle Management*
MDF	*Municipal Development Fund*
MMS	*Maintenance Management System*
MRDI	*Ministry of Regional Development and Infrastructure*
NALAS	*Network of Associations of Local Authorities of South-East Europe*
NAPR	*National Agency of Public Registry*
NASP	*National Agency of State Property*
NOI	*Net Operating Income*
NPV	*Net Present Value*
O&M	*Operations & Maintenance*
PFM	*Public Finance Management*
RDF	*Regional Development Fund*
SMART	*Simple Municipal Asset Recording Tool*
SRMIDP	*Second Regional and Municipal Infrastructure Development Project*

INTRODUCTION TO PROJECT

This Guidebook is provided as part of the Second Regional and Municipal Infrastructure Development Project (SRMIDP) of the Municipal Development Fund of Georgia.

The SRMIDP is provided through support from the Swiss Development Cooperation and the World Bank.

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1. INTRODUCTION TO GUIDEBOOK

Purpose

This Guidebook is targeted at staff in Municipalities whose routine work involves working with the Municipality's Physical Assets and in the preparation of plans and the forming of recommendations with regards to these Assets.

It is one of a set of three, there is also a Guidebook on Capital Investment Planning and one on Spatial Planning. This is very important, as Asset Management activity is interwoven with those of Capital Investment Planning and Spatial Planning and should not be regarded as a standalone activity.

This Guidebook is based on a combination of appropriate international best practices blended with a strong understanding and appreciation of on the ground local realities.

Important Note – Asset Management is not a standalone activity

Asset Management is not a standalone activity – it is integral to and interwoven with all Municipality activities.

The Assets that are dealt with in this Guidebook are only those assets that have physical substance (tangible assets). These include buildings for administration and specific functional use (pumping stations, kindergarten etc.), municipal monuments and parks and other open spaces. Also included are communications related facilities like roads, paths, bridges etc., and water and wastewater related structures and networks. Specific attention will be paid to utility related machinery and equipment[1].

[1] A classification of assets used in the state budget of Georgia is included in Annex A. This Classification is purely for financial accounting purposes and not for AM as covered in this

Machinery and other equipment used by a Municipality are also included – heavy vehicles, water pumps, etc. – very often referred to as movable fixed assets [2].

Naturally, all land owned by the Municipality are included along with all and any dwellings and structures that exist thereon (all these being physical and tangible assets) – this subgroup of assets may not be directly involved with day to day activities but clearly come under the umbrella of this project and consequently this Guidebook.

Intangible assets including financial assets are not dealt with in this Guidebook. Also the management of inventory of fuel, and other consumables is not included.

Chapter Analysis

The first three Chapters basically introduce the Guidebook reader to the concept of assets and asset management. In particular the reader is introduced to the issue and importance of data related to the assets.

Chapters 4 & 5 bring in the issues related to the development of policy and planning and what has to be considered in their formulation.

Then comes the Chapter (6) dealing with financial issues that relate to the Guidebook subject material. This chapter deals with not the issues of financial accounting and book-keeping but with activities that need to have some form of measurement relating to activity; money is one such measurement mechanism.

Then comes the Chapters (7 & 8) dealing with life Cycle Operations & Maintenance. Though dealing with operational and related maintenance issues in broad term it also links back to the financial issues dealt with in the preceding chapter.

Guidebook. There is also a capability to categorise assets in a wide variety of classification – see Chapter 3.

[2] These will not be recorded by the NAPR.

Chapter 9 deals with both planning and the need to replace/upgrade the assets, this links back to Chapter 5 and the AAMP.

This is followed by two chapters that are interconnected: Water Related Assets & Critical Assets. The former deals with a very functional use of assets as well as introducing the concept of criticality. The latter looks at this in more general terms and in relation to non-water related assets. The Chapter dealing with Water related assets was specifically included due the importance of such in terms of cost and service provision.

The final chapter is deals with a specific part of Georgian legislation: privatisation. Due to the legal circumstances that exist currently and which will do so for the foreseeable future, there is not room for alternative practices – although the actual method of valuation is in fact very common internationally and is regarded as being the relevant best practice in the circumstances.

Scope

Earlier Chapters can and do draw on international best practice with orientation to the Georgian reality.

The guidance ranges from physical management to issues of efficiency and effectiveness – often using financial based key performance indicators. This reflects the intrinsic interweave that exists in the management of assets. This will particularly apply with Capital Investment Planning and Asset Management Planning – both activities being interdependent. However this book is not about the financial and accounting procedures relating to assets. The financial aspects are about the cost to acquire, maintain, operate and dispose of, as well as looking at potential income through rent/lease and disposal of the assets.

The Guidebook is not concerned with the accounting paperwork and the purely financial and accounting issues relating to the Municipality's balance sheet. Notwithstanding this last statement, good AM needs those involved in accounting to provide asset level costing. Also for an asset to appear on the balance sheet it needs

to be identified and recorded and this must be recognised as being of paramount importance.

The guidance also covers the ability of assets to perform as required by the Municipality and to do so in a timely and efficient manner.

Whilst it is recognised that the registration of certain assets with the National Agency for Public Registry is both necessary and in fact a legal requirement, this Guidebook is oriented towards assisting Municipalities to resolve or at least minimise the problems they have on the ground regarding assets and improving the awareness of the importance of sound Asset Management. As well as raising this awareness it will also guide the municipalities on how to optimise the utilisation of their asset base.

The policies and practices referred to in this document and in fact the ethos of the complete document are based on accepted international best practices but also keeping in mind the fact that these are Georgian Municipalities, working under Georgian conditions and laws/regulations.

Asset Management is both non-technical and technical. The non-technical management does not get into the detailed operations of the individual asset. To work at the technical and detailed level, engineers and technical staff are required. Civil Engineers for roads and buildings etc., Electrical Engineers for all things related and Water Engineers for water and waste water related issues. There are going to be manuals and technical maintenance books and procedures relating to specific items. Manuals should come with the equipment (and should be retained securely). An online computer search in general or specifically of supplier company web sites should supply some assistance with regard to procedures BUT in all probability not in Georgian.

The Asset Management staff at the non-technical level are who this book is addressing. The generic AM people work through the technical specialists. It is simply not possible for the targeted AM people to be masters of all the technical issues. It is good though that they have an appreciation of and some understanding of the specific technical issues relating to the relevant assets.

There is a wealth of material and knowledge available in print and online – simply go to Google and type in Asset Management for example. However, other than legal material and maybe some project reports there is nothing specific to the Georgian environment. There are thousands of references to Municipality Asset management – these may have material of use BUT most relate to non-tangible assets or are oriented to Municipalities that due to their location and circumstances (Western Europe for example) are much more affluent that those in Georgia and which work in a much less controlled environment – this will also apply to material relating to Capital Investment Planning.

There are a number of websites through which material can be sourced and downloaded – very often at no cost, but as mentioned above, the material will not be in Georgian. An example Scribd.com[3] for general material, but specific subject searches are possible. Other very subject specific sites include www.assetworks.com and theiam.org – the latter being the Institute of Asset Management site. This is regularly updated with material on best practices and issues from around the globe.

There are useful books available, for example: 'Municipal Asset Management Toolkit: Guidelines for Decision Makers'[4] prepared within the project "Asset management for water and sanitation sector in South-East Europe". The project is funded by the German Ministry of Economic Development and Cooperation and the Government of Switzerland and is implemented by GIZ and the Network of Associations of Local Authorities of South-East Europe (NALAS). It is a very good example and is available free via the link given in the footnote and is well worth having in your library. However,

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[3] This is a very good site for material on a wide range of potentially useful subjects including CIP and Spatial Planning. However it may require registration and a small fee for proper benefit to be gained. A useful and still totally free site is Ebook3000.com

[4] The aim of the toolkit is to provide utility asset management practitioners, policy and decision-makers basic information and knowledge to help them implement the most fundamental aspects of asset management. The toolkit should enable readers to identify gaps or challenges, and draw up a strategy for addressing these challenges using information and other resources assembled for this purpose.

www.nalas.eu/Publications/Books/Municipal_Asset_Management_Toolkit

it is important to note that it is completely oriented towards water utility operations and is not available in Georgian or in Russian.

Those that work with the types of assets this Guidebook deals with tend to be very focussed on the technical aspects of the assets management. There are many that would be extremely useful for a municipality to have and indeed beneficial to have.

Details of additional books and material are included in the bibliography at the end of this Guidebook.

2. INTRODUCTION TO ASSETS AND THEIR MANAGEMENT

Chapter Purpose

This chapter has two components: an introduction to assets, their types and classifications and related characteristics. This component is focused on giving an understanding of the basics of assets and their role in municipalities. The second component looks at the fundamentals of managing assets.

Assets – an introduction:

All asset definitions break down into three fundamental elements: ownership/ possession, value in monetary terms and potential benefit or use.

The 'Asset' has to be a possession of the Municipality – it must legally belong to the Municipality, either directly or indirectly through a municipality owned legal entity.[5] [6] [7] This latter point is very important. Municipalities often have operational 'companies' using various assets. They even have their own accounts and balance sheets. However, the assets being used are ultimately under the control of the Municipalities. Also, in some cases there are assets (predominantly but not only related to water) that have been handed over legally to another entity separate from

[5] In Georgian Law, a municipal asset is "an item of property owned by the municipality, regarded as having value and available to meet the commitments of the municipality". 'Commitments' in this sense means implementation of public functions and responsibilities of the municipality

[6] See Article 106 of the Local Government Code www.matsne.gov.ge/en/document/view/112588?impose=original

[7] This guidebook deals with the operational management and planning of assets and is not much concerned with the pure financial procedural issues of the assets, this accounting is stipulated by law, Management accounting information though is relevant to AM.

the Municipality but as a result of Municipality policy, are still maintained by the Municipality – the management of these is also considered here.

It must be possible to value it in monetary terms, for this to be possible it has to be identifiable and measureable.

Finally the Municipality must be able to derive some potential benefit from it being in its possession. It must have some use to the owner. However, this benefit need not be measurable financially, normally it will be a social benefit. An asset can be of value in many ways – it may be the basis for the provision of a service – Kindergarten, Clinic etc., it may be the actual physical location of the Municipal administration, it may provide rental income (commercial properties etc.) and/or it may be a source of tax income for the municipality. Finally, by disposing of the asset the Municipality may also derive income.

For a municipality, the number and diverse types of assets are complex. The purpose is also different: the municipality owns them so that they can be used for the benefit of the community. Examples of assets of interest to readers of this Guidebook are buildings (administrative, kindergarten, residential, warehouse, sports facility, etc.), roads, footpaths, bridges, storm drains, culverts, flood defences, reservoirs, land (agricultural & non-agricultural) water & waste water systems and even cable car system. Also of relevance are the less visible pumps, machinery, power generation, well-head equipment etc.

The above is a good example of a storm drain being constructed. Source; Martvili Municipality.

There are assets that the municipality will not own but for various reasons undertake to maintain and even in some cases, to construct. These usually relate to the water and waste water sector.

Otherwise the principles of asset management are the same: the resources to build/acquire them have to be found; they have to be operated and maintained as efficiently as possible; as they wear out, they have to be replaced. This process: acquire, operate, maintain, renew is the subject of municipal infrastructure asset management.

Though the Asset types this Guidebook is dealing with are defined above, it is very useful to quickly look at Assets in general. This is because there is often an overlap between the Assets dealt with in this Guidebook and other assets.

Assets can be grouped into two broad categories:

Current Assets:

These are Assets that are used and consumed by the Municipality during the course of its normal operations and which usually have a life span of a year. It includes cash, debtors and even office and other consumable items – the latter can include such items as spare parts and materials used in construction and maintenance.

In particular the management and utilisation of non-current assets has direct implications for the Current Assets, if machinery is run at a higher than optimum rate, extra money is needed for fuel inefficiency, spare part and maintenance. An overused asset may also need earlier than planned rehabilitation or indeed replacement.

Likewise the availability of these Current assets can have direct implications on the operational efficiency of the Fixed Assets that this Guidebook is dealing with. If there is no funding for spare parts or maintenance then this naturally has a direct impact on asset performance.

Fixed or Non-Current Assets:

Fixed Assets consist of land, buildings, fixtures and fittings, motor vehicles and heavy equipment, as well as water related networks. These are all items that do not get consumed in the short term through usage. This category of assets are of direct relevance to this Guidebook.

These two groupings can be further divided into:

Discrete Assets:

Discrete Assets are those that are unitary by their very nature and which can be clearly identified and are possible to regard as a distinct unit. A bridge is a good example of such because it is clearly identifiable and seen as a separate unit. Most municipal buildings will also be discrete. However, some may not be, for example, they may need to be subdivided according to their usage. An asset originally regarded as discrete can evolve into a composite asset over time.

Composite Assets:

These are assets that can and should be broken down into smaller discrete components. A water supply network can initially be recorded as a single asset and then sub divided in to pumping stations, pumps, water pipe network segments etc. This level of breakdown is particularly essential when dealing with water supply and waste water systems[8]. Apartment blocks are another example. An apartment block can be regarded as a single asset or if being privatised, treated as separate apartment units.

Why it is necessary and important to manage these assets?

Municipalities do not operate in an environment where financial resources are unlimited. The financial resources are used to pay staff, operating costs and to acquire/develop assets that are used by the organisation.

[8] The importance of this break down is looked at later in Chapter 10.

Assets can cost millions of GEL to acquire[9] [10] and significant amounts to maintain and operate. Even those obtained from national funds cost money to acquire and then much more money to operate and maintain and these operating funds are from the Municipal budgets.

All this money is a very limited resource and needs to be spent wisely and transparently. The needs on which money can be spent always outstrips the supply of money. Therefore, any proposed expenditure on assets (acquiring new or repairing existing) has to be planned, proposed and justified. If approved, it has to be accounted for both in terms of its actual expenditure on the actual asset and as importantly that the effect of the expenditure was in line with what was envisaged in the proposal.

Important note: Is expenditure having the desired effect?

It is not only that the money was spent where it was meant to be but that it also had the desired and planned effect.

People have always developed and managed assets. First, caves, tents, houses then storage, sheds, animal shelters, later houses, factories, schools etc. Over time, things break and have to be repaired. Eventually it becomes more difficult and more expensive to repair. In the end it is necessary to replace it, or, if improved economic possibilities allow a new and better one to be built.

The managers of local administrations are assigned the function and duty to provide their residents with specific services. To provide these services a physical infrastructure is necessary: roads, buildings and technical objects such as water treatment plants, waste water treatment etc.

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9 Some assets may appear to be “free “ as funds are from outside Municipality, particularly RDF but even those cost the Municipality and come through the Municipality budget.

10 Some Assets may be ‘inherited’ or similarly appropriated at minimal cost, however in these cases the maintenance and operating costs still exist.

All public administrations are under financial pressure. Municipalities are scrutinised to ensure that good decisions are made[11]. To implement these decisions requires money. Resources for new investments are difficult to find and municipalities have to lobby central government for more resources or find other sources of funding for capital investment. Assets (as dealt with in this Guidebook) are resources available that enable the Municipality to achieve its goals.

Environmental legislation and civil society organisations require municipalities to be energy efficient and environmentally sensitive when operating assets and investing in new assets. There is similar pressure to ensure that assets contribute to the city and community environments so that they are attractive to citizens and visitors. If a municipality does not know if its assets are energy efficient or environmentally friendly, how can it comply?

Important Note. - Asset Management is Strategic.

Given the nature of asset management, decisions (particularly acquisition and disposal related) take time to become reality. This requires long term strategic planning. This needs to be reflected in asset related policies and in the Annual Asset Management Plan.

The prudent management of assets – acquisition/operations and management/ disposal will benefit the financial condition of the municipality as well as directly improving the provision of services to the citizens. This will free up funds for possible use elsewhere. Replacing an existing asset may be more cost effective in the long run or it may not be – to be able to determine which requires good asset management.

Why acquire an asset?

An Asset brings with it some value to the municipality acquiring it. Normally this value comes in a variety of forms. It may have:

- A monetary value,

[11] This is done on all levels, by various Ministries and by the local citizens and importantly voters.

- A social value,
- An historical or cultural value or
- A specific functional value.

Monetary value can only be realised if the Asset is sold on to the private sector or is used by the Municipality to generate income through renting it or leasing it out

By disposing of an asset via privatisation, the municipality gets a share of the assets value. This injection of funds is worth having and worth the effort. Though the process from planning the disposal to the actual disposal can be quite time consuming.

An asset can more quickly generate income for a municipality through rental or leasing over time. This income will naturally be much smaller in the short term but spread over maybe a number of years may be quite substantial.

Important Note. – 8 critical points of Asset Management.

- **Know what assets you have[12];**
- **Know what condition they are in;**
- **Know what they cost to have/use/maintain;**
- **Know what they can be used for;**
- **Don't waste money;[13]**
- **Know what your municipality wants from its assets;**
- **Keep your Mayor/Council informed;**
- **Bridge the gap between existing and what is needed[14].**

Do bear in mind that an asset that has been privatised should no longer be a source of cost to the municipality whereas an asset that is rented or leased may still be incurring costs for the Municipality.

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12 An example of the type of data on assets that is of importance to those in AM is given in ANNEX B

13 Money is a scarce resource, spending it on something that does not need to be done or spending more than actually needs to be spent is not good management. An example of waste would be asphalting a road that does not need it or which you know will be dug up shortly to lay water pipes.

14 The Municipality needs kindergarten place for 100 students, space only for 75 exists – to get the extra 25 – do you renovate or build new?

Municipalities that are trying to develop and expand their internal income generating potential, either through asset privatisation or renting should incorporate this desired objective into their asset related policies and this should also be reflected in the Annual Asset Management Plan – the target for such generated income should naturally be quantified in the overall Annual Municipal Plan[15].

Obtaining monetary value from an asset should not necessarily be a principal objective for a municipality. In some cases it is true that there are assets whose only value to the owning municipality will be what is received on its disposal. However, the concept of social value is such that it is almost impossible to put a monetary value on it. A Park area, where residents can come, sit, socialise and enjoy nature is a very good example of an asset with social value. Another such Asset would be a sports stadium.
Assets with a historical or cultural value can be clearly identified: monuments, building of specific historic value or buildings used to host cultural events. The real value here may not be in the asset itself but in what it represents.

This is a good example of social value – a sports facility in use**:**

Source:

www.facebook.com/ChiaturisMunitsipalitetisGamgeoba/photos

[15] This target would get work into the AAMP and the solution reflected in the presentation of a list of suitable assets for renting or disposal via privatisation

It has clear social value and may even be used for cultural events – thus giving cultural value. It may also benefit the Municipality finance by being used for events from which income can be collected.

The final form of value to be considered is the functional value. Many if not most Assets have a functional value. These Assets can be ones acquired from the state – these are usually buildings that are used for administration, the provision of municipality services, kindergarten facilities, roads, bridges etc. Other assets with a functional value can be acquired through procurement or construction and even through repurposing and renovation. An example would be where a derelict building is renovated and turned into a working building, for example a kindergarten – see photograph below from Khasuri.

 old kindergarten - now rehabilitated 

Source : MDF

Acquiring an asset from central government is a very specific process. The asset in question has to be clearly identified. Its ownership has to be verified as being central government. Any issues regarding ambiguity of ownership have to be resolved. The asset has to be registered on the NAPR system. The Municipality has to make an application to the NASP for the transfer. The Municipality has to clearly justify the rationale behind the action. This should illustrate how having such an asset on its books would benefit the Municipality. This should also show how the asset would be beneficially integrated into the Municipality plans. Simply requesting the transfer so that it can be privatised by the Municipality is not adequate justification.

The situation is made more difficult as Municipalities have until 2025 to develop their capacity to process the taking over of state assets as per current planning regarding 2019-2025 Decentralization Strategy

The process does not end with the application but requires follow up over what might be a months if not years. This time lag can be very problematic for the planning process.

This transfer request should be normally included in the Annual Asset Management Plan, including detail on the proposed use of the assets and its implications for the Municipality.

It is important to note that some assets may be transferred with an attached conditionality limiting their use or even requiring specific use or rehabilitation. For example a building may be limited to use as a kindergarten or as part of the transfer agreement a roof may need replacing.[16]

An asset that has no contributing functional value is just going to sit on the Municipality's Balance sheet without positively contributing to the achievement of the Municipality's goals.

Municipalities should only acquire assets where it has been determined that over the life of the asset that the benefit derived is greater than the costs incurred. As seen above, sometimes the benefits to be derived may not be measurable in terms of hard cash, sometimes they are. However it is always possible to put a monetary figure on the anticipated costs to be incurred to operate, maintain or rehabilitate an asset over its life. This is referred to as Life Cycle Costs and is so important that it gets a Chapter of its own.

As is clear even from the short description above of what is involved this can be and usually is a long and complicated process. It is very procedure heavy and there is no flexibility. It is purely procedural. In Annex C of this version of the Guidebook the Authors have briefly outlined what is involved. In the Georgian language version they have included comprehensive documentation related to this process.

[16] This conditionality may also apply when privatisation takes place.

Important Note. Multi Year planning is necessary particularly in acquisition.

It is important for planning purposes that an acquisition can take over a year to be realised and this has to be taken into account in all planning related to this asset.

Assets should not be acquired without careful planning and analysis. The process should be formalised and be part of the Municipality's Annual or Multiyear plan that brings together Spatial Planning and Capital Investment Planning. All Asset acquisitions should be included in the Municipality's annual Asset Management Plan, related operation and maintenance plans and budgets. The development of such a plan is dealt with below in Chapter 5.

Why dispose of an asset – the how is in Annex D?

In theory an asset should be put up for disposal when the cost of having it on the Municipality's books is higher than the benefit derived from having it. This situation should be foreseen to exist not only in the current year but also in the long term. An asset's value could very easily increase with a change of use or some rehabilitation, so the long-term view is the important view. In many cases the derived benefit may be social – such as water supply, kindergarten – here social benefit may outweigh financial cost.

The disposal of an asset may save the municipality money by elimination of the need for maintenance. It may increase the income of the municipality by generating income from its sale. It may actually be a policy of the Municipality to privatise selected assets or groups of assets as a matter of course. If this is the case it should be reflected in the Municipality's policy in relation to asset management.

An example of Asset rehabilitation in Tianeti

Source: : /www.facebook.com/TianetisMeria/photos

This asset will not only look better after renovation but may also require less maintenance, it may also be able to provide additional functionality depending on the level of rehabilitation. It will also be more appealing to a private buyer.

A good example of rehabilitation is Village Mulakhi Community Centre (Mestia)

Source MDF.

An issue that needs consideration when looking at asset disposal is if an asset is earning money for the municipality in the form of rental income, does the municipality keep renting it or sell it for greater shorter gains? There has to be a cost benefit analysis carried out (CBA)[17].

Some assets may just be standing idle or ceased having anything but a monetary value – this specifically applies to the residual value of material arising out of the salvaged material from construction or demolition sites. The disposal of what is often referred to as 'scrap material' can be very lucrative for a Municipality and is in fact included in the overall lifecycle cost of an asset.

Some assets may be only of value on their disposal – vacant buildings for example. Their sale will not only generate income for the Municipality but also reduce maintenance costs.

Not all assets can be disposed of in this manner, for instance water networks and sewerage networks will continue to exist long after they are no longer capable of operating productively. Such assets are continuously renovated and rehabilitated so that they can continue to provide good service to the citizens. In some cases these assets may be passed over to a non-municipal operating company. However, this agreement may or may not have the water supply organisation taking over responsibility for maintenance and upkeep.

When disposing of an asset, great care must be taken to get the best possible price. This has to be done in a clear and transparent manner as well. .

As with acquisition disposal is quite procedural and with no flexibility (although not as complicated as acquisition) and depending on the asset may be a multiyear operation – therefore that has to be taken into consideration for all related planning purposes. The procedures to be followed in the disposal of assets are outlined in Annex D.

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17 CBA is covered in detail in Chapter 9.

3. GETTING STARTED WITH ASSET RECORDS

Chapter Purpose

This Chapter's purpose is very simple and basic – get municipalities to recognise that it is necessary to know in detail what the municipal assets are.

It is also possibly the most important chapter in the book. **Those involved in Asset Management HAVE to know their assets.**

Introduction

When managing any resources, financial, human or buildings and machinery the first step is to quantify what is being managed.

The collection, and collation of data needed for a useful Asset Management Database is initially a major undertaking as data on all existing assets has to be compiled and verified. Once this has been done, the database has to be routinely updated, with changes in the data relating to existing assets, as well as the addition of new assets, along with the recording of the disposal of assets.

It is important to note that this AMD (Asset Management Database) is for use by the Municipality in which it is located. It must not be confused with the NAPR. It will contain more data than held by the NAPR (National Agency of Public Registry), also it will contain assets not registered on the NAPR. [18]

[18] Such as plant and machinery.

Important Note – You cannot manage properly without knowing what is being managed.

If the Municipality does not know what assets it has, how can it manage them?
How can it know its potential revenue from tax, rent or sales?
How can it budget its expenditure on maintenance, operations etc.?
How can it carry out Capital Investment Planning to bring resources up to requirements – e.g. need for Kindergarten – build new or renovate old?

Why collect/compile this data?

This data will be used to enable the municipal management to better manage its assets, to better plan investments and resource usage. Also, it will give an opportunity to look again at examining properties and sites that should be regarded as assets but which for a variety of reasons are not.

This data can be recorded on an interim database in the short term and will therefore be available for uploading once MRDI software becomes available. In the meantime it will be available for use by management and planners.

It is appreciated and recognised that some Municipalities may have already gone a long way to collect asset related data and may question the need to do this. This is understandable, but please go through the data being required and you will notice that there is much more required than what will already have been collected. Also, it is not just the collection of the data that is being looked for but also a collection of supporting documents and the compilation of specific files through the generation of folders for each specific asset.

Additional data is going to have to be acquired on specific assets, particularly those related to the provision of water supply, and all related movable assets in the form of machinery and equipment. This will be dealt with in greater detail in Chapter 10.

This data feeds into the Municipality's operational, financial and planning decision making process.

Implementation of collection

In order for this work to be done in a timely manner there needs to be a high priority assigned to it by the Municipality's management.

Two people at least need to be assigned to this work – this may be on a part time basis in the smaller organisation. These may be people already[19] working in the field of asset management at present. The actual department that these two people currently work in is not that relevant. It is essential that those staff assigned to build up these records have not only the clear responsibility to do so but that they also have the official authorisation to do so. Two people need to be assigned so as to ensure continuity of work and the development of an institutional knowledgebase. If one of the existing team leaves for whatever reason they should be immediately replaced. In those municipalities with a lot of assets more staff may need to be assigned or at least seconded in the initial phase.

As much of the data required will be held in different departments and will not be in a single office or location, it is important that the relevant staff have the authority to interact with these diverse departments and to request and receive the required material.

Initial Step

The initial step is the establishment of a book based simple register, this contains a unique sequential number assigned to each asset. In those Municipalities that already assign numbers to their assets, these existing numbers can be incorporated in this ledger. The ledger should have the following columns:

- Unique Number;
- Brief Description of Asset;
- Notes.

[19] Very often found in the Architecture unit. In fact the employment of architects and engineers is an essential base for asset management. In many municipalities further attention is given to asset management through the 'Infrastructure Committee' (or equivalent) of the elected officials.

It may become necessary to renumber an asset – a building might be divided into sections, some may be rented or disposed of, - the old number can be kept for part and a new number allocated to the 'new' element. Any such actions need to be briefly recorded in the Notes column, along with the relevant dates. This would be a case of a previously discrete Asset becoming a composite asset.

This will also be an issue where there is a major construction project – this would be initially recorded as a single asset and later separated into multiple assets. It is essential that construction projects are registered speedily. If there is no clear subunit break down into individual assets at the start of registration then it is registered as a single unit with the break down coming later. If such a breakdown does exist then the subdivision assets can be registered separately using a single Asset Reference followed by a "." and then a unique sub unit reference – e.g. Asset 27.001 for say a component of a water supply network to a village. 27.002 would be another subcomponent.

If assets with an existing number are for whatever reason assigned another number, then this 'transfer' is noted in the ledger. If an asset is disposed of this is also recorded in the note section of the register. Otherwise there should be no reason to void an asset ID number.

As a follow up to this hard copy register, all assets will be recorded on a computerised Asset Database[20]. This will be used not only to record, collate and tabulate the relevant data but will also be used as a tool in asset, investment planning and spatial planning related decision making.

Each numbered Asset should have a separate folder, into this folder will be placed copies of any asset related documentation, maps, drawings, valuation reports, site visit reports etc. Basically over time it will contain a copy of all documentation held by

[20] MS Excel is a very useful tool that can be as simple or as complicated as you the user wants it to be. It can be used in a basic manner initially and can be developed and evolved with time and a buildup in experience and capacity. Also it is already on most computers in Municipalities.

the organisation. All the above mentioned (original) documents can stay in their current locations but they should be marked with the asset reference number.

Important Note - Asset Number & Finance Issues

Where at all possible, the unique asset number will be used in accounting and budgeting activities, allowing the allocation of costs and expenditure plan/budget figures to be broken down to individual asset level. This is useful and in many cases essential when costing specific activities and working out the life cycle costs and operational efficiency of assets.

Important Note – Detailed Asset costing essential

If your Municipality's accounting system cannot tie costs to individual assets, then you must either modify it or develop an additional application that can do so. Doing this using Excel and Pivot tables is not very difficult.

Construction projects have been referred to above. Particularly if these relate to the provision of water, these will include elements of movable assets – particularly pumps and well-heads. These naturally need to be recorded as separate units, if not immediately, definitely in the medium to long term. The records here will include details of functional and technical specifications, as well as drawings and related functional history documentation – maintenance reports, break down reports etc. This change from a single Asset number initially to a series of related or linked numbers should not delay the initial recording of the asset – simply record it as a single unit and later transfer the composite asset to a new series of number when time permits.

In ANNEX B, there is a list of descriptive fields related to each and every asset, This table is not exhaustive by any means. These fields can be filled in over time. As AM people get more familiar with the 'database' concept and its potential benefits, there will be further developments and enhancements.

Asset Classification.

The Simple Municipal Asset Recording Tool is basically a database. It is therefore possible to use each and any combination of data fields to produce a classification of the data contained within. In this case the data relates to assets.

Assets can be grouped or classified by any of a myriad of data fields –

by basic type, land, buildings,
by function, road, bridge, kindergarten, administrative building etc.,
by location,street, village, map reference, GPS etc.,
by land size, floor area, number of floors etc.,
by condition and criticality.,
by current and/or future potential use,
by availability for privatisation,
and many more.

All assets can be classified more or less as needed – a classification by land type is needed, so the data is sorted in this way. Assets need to be sorted by criticality that is then how data is sorted. Assets need not be sorted by just one criteria either, classification can be by any combination of data fields. This classification potential is way more functionally valuable than the official financial classification as per Georgia law. This latter classification has its reasoning and function but it is not based on asset management needs. [21]

Asset Value.

Assets being proposed for privatisation have a clearly defined process that has to be followed – this is covered in detail in Chapter 12

Other value calculations are determined officially in accordance with government based accounting practices. This work is carried out in the Municipality accounting units.

Data Sources.

Asset related data will come from a wide range of sources depending on the nature of the asset. Land related data will be very different in origin from water pump assets

[21] See Annex A for details of this financial classification.

data. Linear assets will have a lot more locational data than single point assets. Data will lie in various departments – road related data in infrastructure etc.

Composite assets will have their own sources – a water network system may be divided into various individual assets – mains pipe, distribution pipes, pumps etc. All may share a macro level map but with additional source documentation for the specific components.

Digitising data is extremely useful as it allows quick indexing by asset reference code.

Having this data collected and stored in one location and under the control of specified individuals, tasked with the initial compilation and ongoing development will ensure the safe keeping and currency of the data.

Having the data summarised on paper gives a flexible and durable record. This record shows the source documents from which relevant specific data has been recorded. This allows for and enables the sourcing of follow up data and helps to ensure the reliability of and accuracy of the data. This paper trail will be extremely useful for those people looking for more data and/or those replacing existing data collection team members.

When looking at movable assets in particular but also some immovable and fixed assets in a later chapter there will be a need to develop an additional database (or even databases) of records relating to operational effectiveness and maintenance issues.

It is a very useful tool to have a system in place whereby a Municipality's assets can be displayed on a map. This is extremely useful for not only management purposes but also for planning – Asset Management planning but also Capital Investment Planning and also Spatial Planning. Moreover it is a great tool to have when making presentations to either the Mayor/Council or potential investors.

Graphical representation of assets on a map used to be a complicated and tedious operation and one that could be extremely expensive in terms of software. The latter

is now definitely not the case. Software that can do this is now free and readily available. Getting to know how to use it efficiently takes some time (couple of hours) and is well worth the effort. Some Municipalities are already doing this. It is well worth the effort. As you will see in the assets related data listed – GPS coordinates are requested. Mapping is going to be extremely important, start using it.

Important Note - Asset Data Recording & Collection

While all municipalities have an electronic register of assets that is in the most part Excel based, the data held on this is extremely basic. Also almost all municipalities acknowledge that they have not records on all their assets. The implementation of this ASSET DATA RECORDING & COLLECTION is an opportunity for municipality staff to reinvigorate their identification of the true inventory of their municipalities.

Information Technology (IT) and Asset Management

IT is but a tool to be used in order to better organise and analyse the stock of assets. It is an extremely useful tool but one that is dependent of having a body of accurate and reliable as well as relevant data. Without this data it is nothing useful.

The electronic Simple Municipal Asset Recording Tool **(SMART)** that has been developed by this project is very Georgia specific and Municipality oriented. To use the tool, access it via **smart-pmcg.com.** There will be the specific menu where you can see the detailed instructions on how to proceed to use the database. It is web based and requires on line connectivity for use. The data is stored on line and each Municipality's data **CAN ONLY** be accessed by the users of this specific municipality using specified access codes. Data can be entered, edited and deleted. Data will be searchable using user specified criteria and the resulting reports can be printed in hard copy or transferred to offline files such as MS Word/Excel. It is also able to display the selected data on an appropriate base map.(also printable).
There will also be documentation on the detailed procedures leading up to the offline registration of assets prior to their entry onto the database.

Municipalities should and in most cases do understand that to provide services that work across departments, it is necessary to retrieve data and organise it into understandable and useful information. Simply put, they can utilise modern digital technology to solve problems while managing resources efficiently. This tool is one way of doing this.

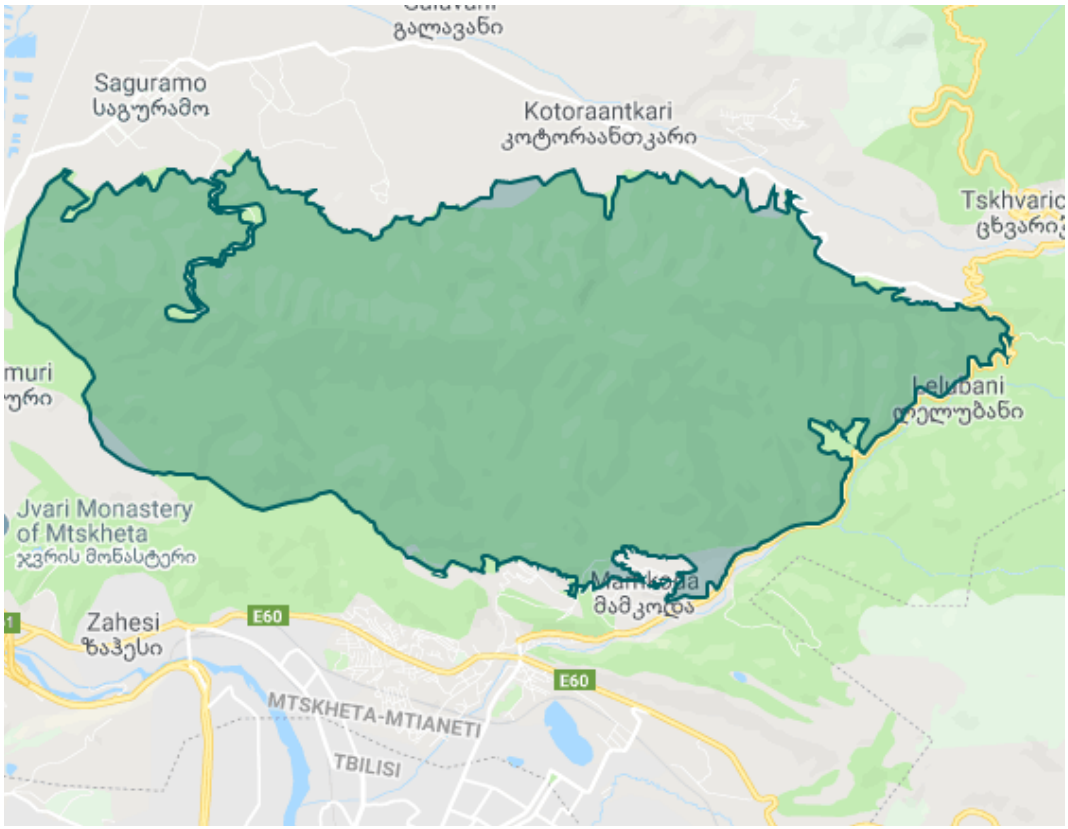
Geographic Information Systems come in many levels of complexity and capability. Fundamentally, the modern GIS allow for the graphic display of data relating to assets on a map. This can be showing a building, a pipeline or a bridge for example.

The basic GIS functions can be carried out on free to use software readily available. These maps can be developed either on their own – basically an asset is recorded directly on to a map. Or a more complicated but still simple GIS application can be set up linking the SMART (or any database for that matter). The link can work both ways – you search for an asset on the map and the details on the database are referred to or an asset is found on the database and this displays the asset on the map. Such linkages can also be used to link photographs, drawing etc. to either database records or to maps – the simplest way to do this is by hyperlinking [22]. It is a very useful, and easy to use tool.

All GIS software has a basic cornerstone: if they are to be useful, they need data regarding asset location. To know the location of an asset there needs to be awareness of the asset's existence. **This goes to the fundamental issue – KNOW what Assets the Municipality has**

Below are typical objects that can be placed on any e-map – all using Googlemaps.

[22] For more details on this tool please search for hyperlinking using Google.



Shape 1: Tbilisi National Park

Shape 2: Tserovani Refugee Village water supply system (only some pipes of the whole system are shown)

Shape 3: Highway Bridge crossing Aragvi river

Remember GIS, is but a tool to record and display data – it can be simple and cheap (even free) or extremely complicated and expensive. At either end of the price/complexity scale it is the data being used that adds value. The sister guidebook to this on Spatial Planning includes a Chapter specifically dealing with the use of GIS in Georgia.

Do not hesitate in checking for online assistance regarding Excel or even Googlemaps or indeed any of the free mapping software tools available[23]. There is a lot of knowledge to be gained from using the Internet. Also do not hesitate in contacting your colleagues in other municipalities and share your questions and your solutions – by doing so everyone gains. Talk to other municipalities AM people, share ideas, concerns and solutions.

Two other IT tools that are useful in AM are digital cameras and Global Positioning Systems[24]. Not many years ago these were very specific items but now many models

[23] Openstrretmaps.org is also a very useful site.
[24] This displays latitude and longitude of locations and can also be used to record the location of boundaries and linear assets. Some models can be automatically uploaded onto GIS or AutoCAD.

of mobile phone incorporate the capability as standard or as an additional 'app' that can be downloaded.

Important Note – Back up your data

Always make sure that you have your asset data backed up – at least two backups, one can be on a hard drive in the office but the other should be kept offsite. Backups should be done routinely, regularly and frequently.

Important Note – Share knowledge & ideas

Knowledge & information not shared is ultimately lost. Sharing is not restricted to within the Municipality. Talk to other Municipalities about how they do things regarding assets.

Important Note – Paper first then Computer

The data collected on paper is an essential first step towards computerisation. Having this material on computer will not manage your assets for you. It will however enable those responsible for asset management to do their job more time efficiently and consistently.

4. ASSET MANAGEMENT POLICY

Chapter Purpose

This introduces the concept and application of having a clear Municipality policy on how to manage assets and the role that those involved in Asset Management play in this role. Such a policy dictates the activities and the procedures to be followed.

Introduction

An asset management policy is a useful tool to institutionalise asset management within a municipality.

A proper policy can clearly articulate a Municipality's commitment to asset management and be used to guide staff in integrating and coordinating the work of asset management to improve its effectiveness.

Having a good asset management policy and properly implementing it, assures the Municipality that the assets meet performance levels, are used to deliver the desired service in the long term and are managed for present and future users.

A sample Asset Management Policy statement is provided at ANNEX E.

Asset Management Policy

In parallel to knowing what assets that the Municipality owns and controls, it is essential that each Municipality develops and adopts an Asset Management Policy (AMP).

The AMP outlines in broad terms what it expects from its assets. It should clearly show the place and status of AM in the Municipality hierarchy and structure. It should clearly

link AM to the other components of the Municipality's operations and ensure their alignment in order to achieve the **strategic**[25] goals of the Municipality. The policy should also function to clearly show the Municipality's commitment to manage its assets in a cost effective, sustainable and municipality service oriented manner.

A municipality may decide to delegate the management of those assets that are operated by subsidiary or third party organisation to those organisations[26]. This however has implications in overall Municipality operations and investment.

Based on the overall policy adopted, the municipality should produce a collection of clearly written guidelines and instructions outlining in depth what it expects from those involved in and responsible for the management of assets.

These guidelines should not only deal with how the assets are to be managed and maintained but should also establish the timeline and set deadlines for the performance of activities.

Each Municipality's AMP may be different in some of its details – particularly in relation to the placing of AM within its structure, all however should strive to include the following:

1. Develop and maintain a registry of all relevant assets[27]. This is of paramount importance. Timelines need to be determined and set and procedures put in place to follow up on this work to ensure that AM staff are striving for 100% registration of the relevant assets;
2. Maintain and manage infrastructure assets at defined levels[28]. These need to be clearly defined in writing and disseminated. Key Performance Indicators (KPIs) should be developed as a way of measuring asset levels of performance[29];

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25 Much of the results of AM decision making can take years to produce result – hence strategic is highlighted
26 Such an organization me be a water supply Company, Solid Waste Management Company etc.
27 This is referred to in Chapter 3.
28 This has to be linked to Municipal set requirements.
29 See ANNEX F for examples of KPIs.

3. Monitor standards and service levels to ensure that they are synchronised with the Municipality's goals and objectives[30]. As in 2, KPIs above have to be developed and disseminated. These KPIs should also reflect the municipality's overall goals;
4. Consider and integrate asset management in other plans; AM has no real existence on its own, it is but a single thread in the weave of threads that makes up the Municipality's plans and operations;
5. Setting up procedures to establish infrastructure replacement strategies through the use of full life cycle costing principles. This requires the ability to allocate costs to specific assets and has implications for Capital Investment Planning, to optimise total life cycle costs of assets[31].Putting in place the necessary instructions and processes for identifying all revenues and costs associated with major asset decisions, including acquisitions and disposal[32];
6. Plan financially for the appropriate level of maintenance of assets to deliver service levels and extend the useful life of assets[33];
7. Plan for and provide stable long term funding to replace and or renew and or dispose of assets; this has implications for Capital Investment Planning.
8. Identify those property assets suitable for privatisation, have them entered on the NAPR [34] and then valued.
9. Establish organisational accountability and responsibility for infrastructure and other municipal physical assets, inventory, condition, use and performance[35]. Even if only in a part time capacity, a single person needs to be responsible for and authorised to manage the asset inventory;
10. Involve the various communities and interest groups within the Municipal boundaries, in a consultative capacity[36]. This not only builds strong civic spirit

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30 This requires the implementation of reporting and monitoring procedures.
31 This will be looked at in greater detail in Chapters 6 through 9 but a prerequisite to this is being able to allocate all asset originating costs to the appropriate asset.
32 This will be looked at in more detail in Chapters 6 through 9.
33 This will be looked at in greater detail in Chapter 8 but a prerequisite to this is being able to allocate all asset originating costs to the appropriate asset.
34 See ANNEX G regarding the National Agency of Public Registry and related legislation
35 See ANNEX J regarding AM Job descriptions.
36 This involvement could be in the form of Village or district meetings or even general public meetings if the subject is wide ranging enough e.g. over all Municipal lighting system

but also works through this to improve the acceptance of what decisions are made.

Developing an Asset Management Policy is a multi-activity approach. It involves research, planning and consultation with stakeholders. Such research would involve reviewing relevant Georgian Legislation and regulations, as well as both national and international relevant practices.

There are many approaches a municipality can take to develop and adopt an asset management policy.

The first and logical step in developing an AMP is to select and designate a team of staff and ideally Council members to actually develop and propose the AMP.

In developing an AMP, the designated team needs to identify the organisation's asset management issues. When this has been done, they should develop and evaluate alternatives in order to achieve acceptable or desired solutions[37]. These alternatives can then be reviewed and analysed and then can recommend the appropriate policy to their Municipal Council for adoption. Throughout the process it is essential that there be ongoing dialogue between the team and all the stakeholders[38]: Council, staff and communities. This team should involve personnel from varying disciplines – finance, engineering and administration, as well as a representative of the council. All Municipality departments should be consulted in the development of the AMP and should contribute. Asset Management may be seen as a single activity but that is not correct – each and every Municipal department uses assets or manages the operations of assets in the course of their duty.

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37 Those developing the AMP in the initial stages need to be aware of the overall strategic view and objectives of their Municipality.

38 This consultative approach should be formalised and start at the initial stages of AMP development. It may involve the establishment of advisory committees, public meetings and direct consultations.

As can be seen clearly from the 10 points above and their associated footnotes, Asset Management is but one strand interwoven with others that goes to enable a Municipality to perform its function and achieve its objectives. As the AMP has elements involving accounting issues e.g. the allocation and accounting of costs against particular assets, the Policy related to Accounting & Financial Management should reciprocate and put procedures in place to enable this to happen.

Capital Investment Policy should take into consideration the Life Cycle Cost of potential new assets and this itself has implications for the Accounts & Finance Policy. Human Resources Policy has to be such that there are people available with the requisite skills to carry out the necessary maintenance in order to ensure sustainability of assets.

On its establishment, the team should be given clear instructions on what it is tasked to do and also a timeline in which it is to carry out this work. There should also be a schedule for feedback to the mayor and if necessary, the Council.

On establishing an AMP, the Municipality has to look at putting the necessary organisational and procedural issues in place.

In the main at present, Municipalities in Georgia have at least one person 'responsible[39]' for assets[40]. This is a good start. It does not matter if there is only one person or in the larger municipalities a group of people, or indeed whether these people as full time or part time in the role. Responsibility may rest in a department of its own or be part of a department – the exact situation normally reflects the size of the Municipality and the number and value of its (relevant) assets.

What is of paramount importance is that the relevant staff have the mandate from the Municipality to carry out their duties and not just be responsible for knowing the assets

[39] The level of responsibility will not cover the detail that this Guidebook proposes as being desirable.

[40] The designation may be Architect or even infrastructure manager – varies from location to location.

location etc. Their job descriptions [41] should authorise them to request information from all departments (with specified response time), to enquire after the wellbeing and operational condition of assets and to maintain and update the Asset Management Registry[42]. They should also be authorised and in fact mandated[43] to regularly report on the state and conditions of all relevant assets to the Mayor. They should be involved or consulted in all aspects of operations and planning that has an impact on the asset base and should be qualified to offer appropriate advice. They should also be tasked and indeed mandated to familiarise themselves with the relevant laws and regulations, also with updating themselves on best practices – both Georgian and International. It should be their responsibility to keep Municipality management and Council [44] regularly briefed on the status of all asset related issues. They should also have the mandate and procedures to raise issues of concern in relation to the use and recording of assets.

Policy Review

The AMP should be reviewed periodically, in fact it is recommended that this be done in conjunction with the Annual Asset Management Plan (AAMP) [45]. Policy reviews should take into account changes in legislation, accounting practices, lessons learned from working of current policy etc. All parties involved in implementing such a policy should contribute to its review. Ideally such a review should be coordinated out of the Mayor's office, either directly or through the delegation of a specific person to be responsible.

Practices & Procedures

Based on the AMP, certain regulations regarding the recording of assets, value reviews, selection for privatisation, disposal, basis and procedures for prioritisation for replacement, disposal, etc. should be produced, circulated and enforced. The selected

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41 See Sample Job description in ANNEX J
42 As dealt with in Chapter 3.
43 In this Guidebook, Mandated implies being given the rights and responsibilities to do what is being required of them
44 In many municipalities further attention is given to asset management through the 'Infrastructure Committee' (or equivalent) of the elected officials, while this is highly recommended, but it does not really apply to day-to-day activities.
45 This will be dealt with in detail in Chapter 5.

staff for managing assets should be mandated to follow through on these. They should also make proposal for changes to existing procedures or for the generation of new procedures.

These practices and procedures should be in accordance with Georgian Law and regulations and should incorporate input bringing them in harmony with international best practices where there is no conflict. They should be detailed and include either specifically developed forms similar documents or incorporate existing documentation.

The procedures and practices should be clearly marked, clearly indicating the version and date from which in effect.

Practices & procedures relating to the recording of asset related costing and the handling of enquiries from citizens should also be included here.

Important Note – Review Policies and Practices as a matter of routine

Policies and practices may need to change over time. They should not be written in stone. Review and change if needed.

In developing an AMP, the overall objectives of the Municipality action plans have to always to be taken into consideration. If the target is to rehabilitate existing assets for ongoing use or development into kindergartens or indeed for privatisation, this means that assets have to be identified as being suitable for the relevant purpose. Management has to be informed of and updated on their condition and the necessary steps taken to bring them to the required condition.

5. ASSET MANAGEMENT PLAN

Chapter Purpose

Once an AM policy has been determined and the appropriate regulations have been promulgated and circulated, the development of an Annual Asset Management Plan is the next logical step. This Chapter looks at the AAMP in detail .It must be remembered and emphasised that each plan does not exist in isolation, in reality they should be a series of plans over many years that have a long term multiyear set of objectives. This also applies to the overall Municipal plans which in turn direct the Asset Management Plans.

Introduction

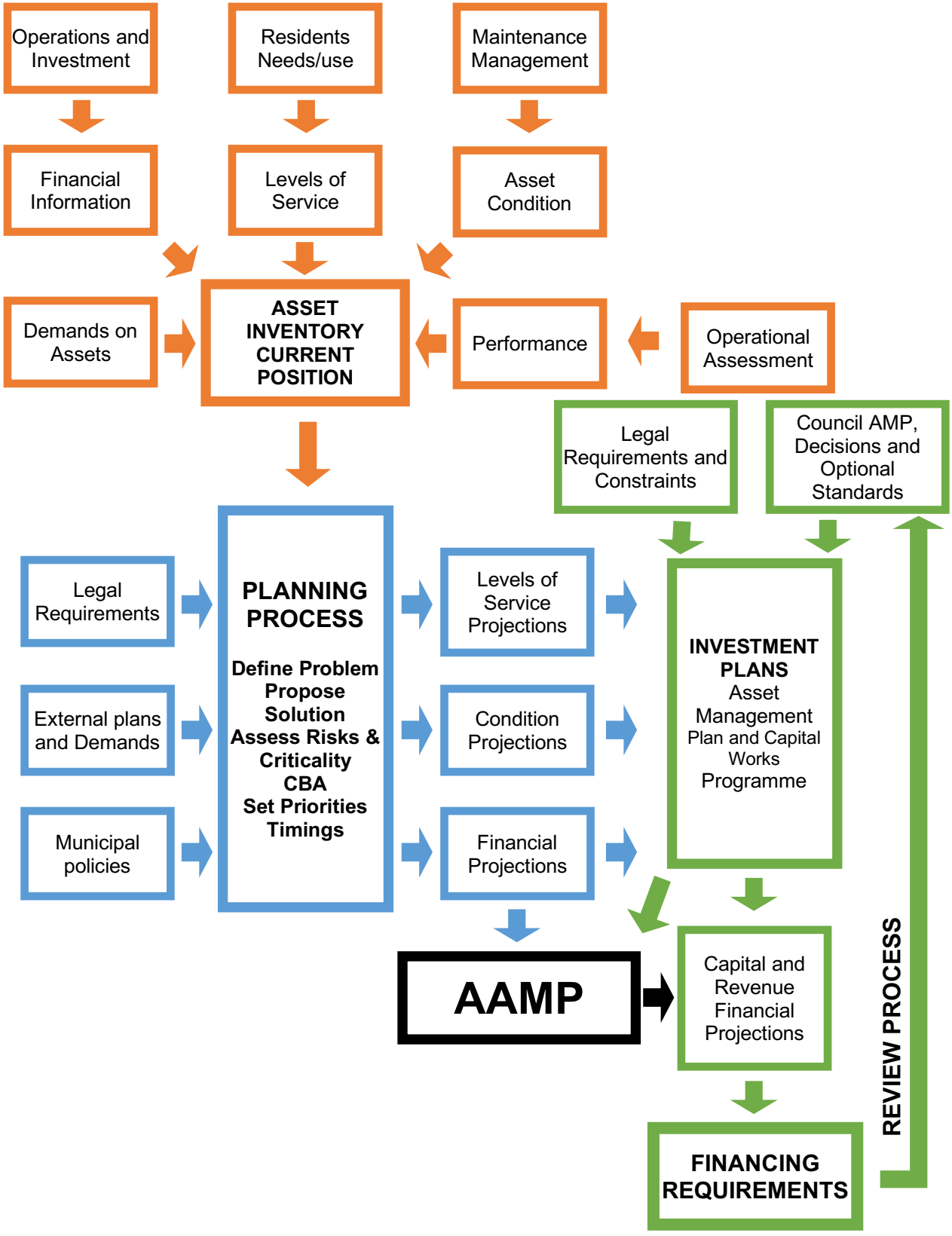
The municipality should carry out AAMPs in order to better organise and align its asset base in order to best meet the targets to support the services delivery that the community requires. It must do this in a financially efficient manner to optimise service delivery, both now and in the immediate and long-term future.

The delivery of services costs money, either to operate and maintain existing assets or to acquire new assets. Money is a limited resource. Any utilisation of scarce resources requires careful and proper planning. When those resources are in the form of physical assets this takes the form of the Asset Management Plan, which as with other operational planning documents is usually generated on an annual basis.

In this chapter we will look at the components of such an Annual Asset Management Plan (AAMP) and explain what goes into each section.

The following chart illustrates the various elements that go into an AAMP:

Grouped into three broad sections **Asset Specific**, **Planning Process**, **CIP** culminating in the **AAMP**



The three broad sections outlined above - **Asset Specific, Planning Process, and CIP –** covers the elements that ultimately contribute to the AAMP.

It starts with the Asset Specific group that covers the existing body of assets – their condition and costs, along with what they are expected to deliver (kindergarten places, water supply, road access etc.) and how much this costs both in operational costs and maintenance costs.

The Planning Process sections deals with the legal constraints and requirements that impact Municipality planning. It also includes Municipality objectives and targets – The Asset Specific section deals with the current reality, these projects outline the desirable future levels of service to be delivered. This section also deals with the prioritisation as set by the municipality and whatever policies the municipality has in place.

This naturally leads to how to get from what assets there are to what assets are needed – the Gap Analysis leads on to how to bridge the gap between current capability and service delivery and what capability and service delivery is needed in future. This gap is usually bridged by capital investment – how much, where sourced, restrictions on what can be done, how much can be borrowed, etc. [46].

When all this is brought together, you get the Annual Asset Management Plan – the AAMP.The remainder of this chapter contains the layout and headings that should be used in an AAMP.

Important Note - the AAMP is only one component of the Municipality's over all Annual plan

It is very important to stress that the AAMP is but a component of the Municipality's over all Annual plan. It has no existence outside of this framework. It deals with what assets are available, their condition and what is to be done in order to meet the objectives of the Municipality's plan.

[46] The CIP Guidebook looks at this in more detail.

AAMP structure:

Executive Summary

This is a summary of the services that the Municipality provides directly or with third parties and the assets used to provide the services.

It also contains an outline of the Municipality's plans to operate the assets to achieve its long-term service objectives. This should have reference to assets as a source of income generation, both for coming year and in the long-term through privatisation, along with the financial and other implications. It should also contain an outline of the plan's performance indicators. It includes not only asset data but also financial and Spatial Planning input.

The Executive Summary is normally followed by the –

Introduction

This starts with a background section detailing the strategic planning reports and other documents used in the preparation of asset management plan, summarises the assets covered by the plan, the key stakeholders and their role in the plan.

This contains summarised details of what the Municipality plans for the coming year and future years.

It sets out goals and objectives [47] of the Municipality, how these are addressed on the infrastructure and asset management plan. The proposed plans need to come from the Municipal annual plan, it is not the role of those involved in Asset Management to determine these goals and objectives. AM staff may naturally advise on the development of these goals and objectives – pointing out the possible problems and difficulties and even potential opportunities but they do not set the goals and objectives.

[47] These goals come from the Municipality, the AAMP proposes how they are to be achieved.

The main body of the plan starts with an analysis[48] of the existing assets and how they are performing. This outlines details of asset capacity and performance (service deficiency) details where available, for example, how many buildings in use, for what, current condition etc. (Note, for water related assets this would include details of water production and production capability, likewise distribution and transmission lines and capability.) Basically this is a status report on the full range of assets held by the municipality. It should cover all assets, usually grouped functionally but may also be done geographically – there is no set rule. All data here should be valid, reliable and where at all possible current (the phrase 'as of dd/mm/yy' should be used to indicate the timeliness of data). All data included in this section should be verifiable and have the necessary support material attached as an annex to the report. This section comes clearly and totally from those involved in Asset Management. The full details of assets come in the annex.

Legislative Environment of the plan

This is normally the next section of the report. It deals with all legislative and regulatory issues that affect the asset element. It should briefly outline appropriate laws and regulations. It is essential to know the appropriate legal issues – those relating not only to assets directly but also Municipality Administration, Investment Planning and Spatial Planning. As with other similar type documents, larger texts – such as actual laws and regulations, should be included in an annex. Legal and regulatory concerns should be highlighted in detail. Input comes from many sources.

Future Asset Capacity & Performance

This is where details are provided of what assets are required and what assets are available to support the Municipality service goals and objectives. The gap between current capacity of the assets to deliver the required services and what actually needs

[48] This analysis can be at a different levels depending on the Asset and what is required of it. In cases where structural integrity of a building may be an issue then Civil Engineers (on staff or contracted for specific job) would carry it out. Likewise when analysing electric motors an electrical engineer would be tasked. Similarly for water and waste water networks.

to be delivered is explained here, along with a summary of proposed actions to reduce the gap.

There needs to be clear quantifiable performance requirements. An example would be:

- Kindergarten facilities for 100 children are needed, currently there are available facilities for 70;
- by renovating an existing collocated building another 20 places can be facilitated;
- This leaves a deficit of 10 places;
- An additional room can be constructed on the plot to meet this deficit;
- Each element is costed, not only the capital once off costs but also the additional operations and maintenance costs;
- The combined costs are then be compared to alternative solutions – like a new build facility for 30 places or indeed the full 100 places;

The chosen solution all depends on the cost benefit analysis, the socio economic CBA as well as the strictly financial CBA. Decisions may not necessarily be made on financial CBA but the decision makers need to be aware of it in evaluating their choice.

Life Cycle Management plan[49]

This contains data on how the Municipality currently manages its assets, which in itself is determined by and outlined in the AM Policy. For all plans and activities there has to be supporting data relating to the financial implications for the Municipality, as well as reference to any legal issues arising, these will be contained in a separate annex.

Routine Maintenance Plan

Maintenance includes reactive, planned and cyclic activities. This should contain anticipated maintenance actions and related costs covering the period of the plan.

[49] This particular subject will be covered in more detail in the Chapter 7.

Details to be in an annex. It should also refer to work to be done by own staff or by outsourced contractors.

Renewal / replacement Plan

This subsection of the plan includes details on how assets being proposed for renewal or replacement, are identified, and prioritised (much of this will be from the AMP) and how the work is planned and scheduled over the life of the plan. Details to be in an annex.

Creation /Acquisition /Upgrade Plan

This subsection details how new assets are identified, planned, prioritised and scheduled in capital works programs over the life of the plan. Again the initial part of this will reflect the AM Policy and the latter part will be elaborated on in more detail in the annex. The scheduled capital works will also be elaborated on in the Financial Implications section, with emphasis being naturally on the financial implications.

Disposal Plan

The justification for each separate disposal, as well as well as procedures to be followed.

Details of all assets referred to should be provided in an annex along with detailed procedures to be followed.

Financial Summary

This contains the financial requirements resulting from all the information presented in the previous sections of this annual asset management plan. Details and calculations should be included in a separate annex. This includes a major input from those carrying out the Capital Investment Planning.

Financial Implications & Projections

The financial effect of the plan is outlined here, both in terms of required capital investment and the changes in future operational and maintenance costs. The various

scenarios considered should be outlined here with the details of calculations, comparison analysis etc. with further detail included in an annex if necessary.

Funding Plans & Assumptions

This section contains a summary of financial projections and cash flows over the life of the plan and also the period of Municipality financial projections. As with the above this material comes from those involved in the financial aspects of the investment planning, although there is input from AM regarding asset life cycle costs.

Asset Management Practices

This section outlines the information available on assets, the information systems used and the processes used to make decisions on how the assets will be managed.

Accounting/Financial Systems

This subsection describes the accounting and financial systems and any change required as a result of this plan. It should also include details of changes that may include amending the chart of accounts to identify operational costs and the division of maintenance costs into reactive, planned and cyclic where appropriate.

Asset Management Systems

This section describes the asset management system and any change required as a result of this plan. This should also include reference to assets operated by Municipal daughter companies or indeed assets still owned by the Municipality but *de facto* operated by another party. Changes may include modification of asset categories or sub-categories to assist in maintenance management systems; change to a work order system for job planning and control, improvement to the quality of specific data, improvement to software systems and links to other systems (e.g. GIS), adopting a more frequent reconciliation between the financial and technical asset registers, etc.

6. COSTS/COSTING & BUDGETTING

Chapter Purpose

A purpose of this chapter is to reinforce the understanding that Assets cost money. It costs to have an asset sitting idle, it costs to maintain and use an asset and it costs to dispose of an asset.

Another but equally important purpose is to impress on all those in Municipality Management and not just those involved in assets, that those making decisions on assets should know the true costs of what they are dealing with.

It will also give emphasis to the value and necessity of developing and using budgeting as a planning tool.

Introduction

Elsewhere in this manual you will see reference to the fact that this is not financial accounting. Asset management is not accounting. However, it takes accounting information – normally classified as management accounting information – and using it in the making of decisions regarding assets.

Another issue that has to be recognised and which has been mentioned elsewhere is that those involved with Asset Management decision making need information that has to be generated by people whose priority is other work. This means that in order to get the information needed, AM people need to have very good working relations with those people and departments that generate the information.

Management Accounting V Financial Accounting

As the name suggests Management Accounting deals with management – it is the process by which costs/income are recorded and reported in a format that makes the data useful for operational management.

It is not Financial Accounting - the process by which all financial transactions are recorded and reported in a manner suitable for inclusion in Balance Sheets and Profit/Loss accounts. The Guidebook is interested in management accounting information in order to know what each asset costs to obtain, operate, maintain and dispose of.

In all Municipalities the Financial Accounting is mandatory but not the Management Accounting.

The Ministry of Finance system of accounting is a Financial Accounting system. The existing system does not produce accounting information to the individual asset level that is needed – see below.

Asset Accounting

For there to be comprehensive accounting of asset related costs, there has to be recording of all relevant costs at an individual asset level of detail. A problem that is to be faced is that the Ministry Financial Accounting system simply does not at present analyse expenditure to this level.

Theoretically the transaction coding level on the Ministry system should be modifiable to have individual asset codes added. This would enable all costs related to any particular asset to be recorded and subsequently be extracted and compiled for management use by the Municipality. The Asset classification for use in accounting operations is laid out in ANNEX A.

Important Note – Each asset has a unique number

This is only useful however if the Municipality has a list of its assets and has given each a unique number. The importance of having an asset list (that is up-to-date) with each asset being uniquely numbered is essential.

Many municipalities have an Excel based accounting application that can also be more or less similarly modified to produce cost data related to assets.

Different types of cost

Costs can be categorised in many ways. However from an Asset Management point of view there are two main approaches. One is to group according to asset processes. That is the cost to:

- Acquire the Asset:
- Maintain the Asset;
- Operate the Asset;
- Rehabilitate the Asset;
- Dispose of the Asset.

The second is to group costs according to the character of the costs and, in particular whether these are:

- Fixed Costs
- Variable Costs
- Direct Costs
- Indirect Costs

Fixed Costs – are not dependent on activity but arise simply because the asset exists. In the acquisition stage this is straightforward, for example, the construction costs for a particular asset – say, a water supply system for a village – is a fixed cost. The cost of construction is incurred whether or not the system is used. Calculating the initial total fixed cost should be broken down into the separate costs for plant and machinery (pump X so many GEL, main pipeline so many GEL, distribution network, and so on).

Once the asset is brought into use the fixed costs are those that are involved regardless of the level of use. For example if a property requires a security guard, this cost exists even if no activity takes place at the premises.

Variable Costs – are the costs that are influenced by an activity. Something happens that is connected with the asset and this costs money. As above these should be broken down to as low a level of asset as possible so that their structure (and potential for savings) can be understood.

Knowing that all municipal kindergartens cost X thousand GEL to maintain in a year is useful BUT it is very much more useful to be able to break that down the cost to each individual kindergarten.

Costs can also be categorised as being direct or indirect.

Direct costs are those costs that can be directly associated with a particular asset.

Indirect costs are municipal costs that cannot be allocated to an asset in a precise way but can be linked through an approximate calculation. Indirect costs are sometimes referred to as ‘overheads’.

For example, if material is bought specifically for use in a particular Asset or someone is hired to do a specific job at an Asset then these are direct costs. If someone is hired to work on a job involving multiple Assets then some of this cost can be attributed as an indirect cost. This is particularly relevant in relation to the allocation of costs of Municipality employees engaged in maintenance work. If a person works only at one asset then their salary would be a direct cost to the asset. However, if a person is responsible for a broad range of assets with occasional time spent at a specific asset, this is an indirect cost.

There can be a certain degree of flexibility in the categorisation of costs – particularly indirect costs. As a general rule costs should be measured as directly as possible.

Allocation of costs can be complicated. To further illustrate, suppose there is a building divided in to two distinct assets but there is only one bill is received for heating the building. If both units have heaters, the cost could be divided in proportion to the number of heaters or by floor space. This would be allocation of the indirect cost of the fuel bill using an estimate. However, if separate meters were installed in each asset, there would be separate bills and a precise direct cost could be allocated to each asset.

If a security guard is hired to watch two assets then the cost should be split – maybe evenly if assets are similar size, maybe proportionately depending on size difference. The allocation[50] or apportionment [51] does not have to be completely precise; the analysis is for management use not for financial accountability.

Asset Costing Records

These can be as simple or as complicated as is wanted and needed. BUT regardless of the simplicity or complexity they must all have the following basic elements:

- Asset ID number
- Asset Acquisition Cost details with both monetary values and references.
- Maintenance Cost details with both monetary values and references.
- Operating Cost details with both monetary values and references.
- Rehabilitation Cost[52] details with both monetary values and references.
- Asset Disposal Cost details with both monetary values and references.

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50 Allocation and apportionment are accounting methods for attributing cost to certain cost objects. (A cost object is simply any item associated with a cost figure of its own). Under these methods, cost assignments rely on rules or formulas instead of measuring resource usage directly. Allocation and apportionment are therefore examples of indirect costing. www.business-case-analysis.com/cost-allocation.html.

51 Ibid.

52 These are the costs incurred in taking an existing asset that is in bad condition and bringing it to a standard that allows it to fulfill its original function or similar function. For example taking an old dilapidated warehouse, reroofing it, installing plumbing and fitting it out to be used as a kindergarten

It should be possible to state and breakdown costs over the above headings and over time periods.

Talking with those responsible for financial accounting and explaining the requirements should enable a minimally disruptive data collection. Where data is already been collected and analysed using Excel some additional 'tweaking' of the application should be reasonably easy.

For those municipalities only using direct entry on to the Ministry of Finance Accounts system, the Ministry will have to be approached to add the additional Asset related ledger code details or a simple in-house accounting application could be developed on Excel.

Important Note: AM is not accounting

It does not need the same accuracy in monetary terms. A good estimate is better than having no figure

Important Note: Each asset should be a cost centre and a budget centre.

This applies to all costs – Fixed and variable, operational, maintenance etc.

This latter Important Note, is extremely important when Assets are being valued based on cost – which is a standard accountingpractice internationall and which is also in practice in Georgia. This not only applies to the fixed assets such as land, buildings etc but alos to plant and machinery. To do this properly the Accounts department needs to know how much an asset cost to procure, what is the cost of work done on rehabilitating or ugrading the asset and then works out the value of the asset by taking all the relevant costs and subtracting the proscribed depreciation charges from this figure – this gives ou the book value of the asset. This is all done in accordance to the relevant regulations covering Municipal accounts and is carried out by those working in the Finance or Accounting Department. The regulations regarding depreciation are

not negotiable (but do vary – land at one rate, plant and machinery at a different rate) – they may however change over time.

Budgets and budgeting

This is an essential planning and activity-monitoring tool for those involved in AM.

It is very important to always keep in mind the activity component of budgeting. Very often budgeting is regarded as being just a financial plan and very often it is just that. However, the activity component is not only an essential element in determining the GEL figures for the budget, but is also a means for explaining deviation from the GEL amount in the plan.

Asset related budgets can be annual or multi-year but the annual budget is obligatory and must be developed in conjunction with and as part of the Annual Asset Management Plan. All municipality plans for its assets must be reflected in the AAMP and consequently in the budget that it contains. If the AAMP has targeted an asset for disposal, and this asset needs work to be carried out to make it suitable for disposal, then this has to be budgeted for. Likewise, if it is planned to rehabilitate a building, then this has to be budgeted for.

Basically there has to be a budgeted figure for:

Asset Acquisition Cost - details should specify as much as possible. If this involves capital investment, all the necessary technical and cost studies, need to have been carried out. Ideally the tender launched and finalised – however in reality having a reasonably accurate estimate of the cost is enough. The cost of these studies/tenders should also be budgeted for.

Maintenance Cost - should be specified in as much detail as possible, this should be based on the condition of the building; previous costs may be a reasonable basis.

Operating Cost - as above but with the complication that often much of these costs are borne by another department – for example a kindergarten. Asset operating costs

should ideally be separated from the operating cost of the primary activity taking place in the asset. In the example, teaching staff costs come from one budget but what about security staff – should they be from that budget or from Asset Operations?

Is the security cost solely incurred because of the school or would part of it be incurred anyway simply to protect the asset[53]?

Rehabilitation Cost details with both monetary values and details. As with Asset Acquisition, if there is a capital investment component then all the required studies (including CBA) should be complete. The cost of these studies/tenders should also be budgeted for.

Asset Disposal Cost details with both monetary values and details. This should include any anticipated costs connected to the disposal – valuation [54], tender processing etc. – again may need to use estimates.

Budgets should be developed at an individual asset level – using Excel to develop a matrix showing Asset Numbers on one axis and the cost categories on the other axis. Using this matrix you will be able to present and analyse your budget clearly. This matrix can be used as the front sheet of a much larger spreadsheet with each Asset having its own sheet containing a breakdown of the costs being budgeted for and feeding into the summary cover sheet.

Maintenance Cost budgeting is of great importance to AM, particularly when Asset Life Cycle costing is taken into consideration. Should money be budgeted for rehabilitation this year or maybe more money budgeted for corrective maintenance next year? These are the questions that will have to be answered. There will be questions like, do we rehabilitate this year or just maintain the asset and replace next year – this will then raise the question – can we find external sources of funds to pay for the replacement?

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53 This is dealt with in the section on allocation and apportionment of costs above.
54 See Chapter 12 and ANNEX H – Approach of Revenue Capitalisation.

When it comes to maintenance, there can be a very simple categorisation or priority setting:

- An Asset that is critical, it must not fail, maintenance essential, there is no option – it simply has to be done, the cost of not doing the work could be higher than the cost of doing it[55].
- An Asset needs repair, though not critical – if funds are available it should be done.
- An Asset needs maintenance and it is nice to have it done if funds are available.

The budget should clearly indicate the criticality of maintenance in relation to each asset.

When looking at major asset budgets, consideration should be given to developing budgets for their full anticipated life cycle – these need not be over detailed but are quite useful, particularly as assets come near the end of their anticipated useful lives.

As has been referred elsewhere in this Guidebook, life cycle costs are something that have always to be considered. Assets bought in one budget period will have implications in future budget periods – operations and maintenance costs.

As has been mentioned above there is also an activity element to budgeting. The budget should include reference to what work is planned to be carried out – 10 km of new pathway, 100 new street lights, building fully rehabilitated including water and waste water. This measurement will be essential not only for Asset Management but also when measuring the progress arising out of expenditure. For example, in many construction projects there are payments based on % of work completed.

When presenting a budget for maintenance and rehabilitation in particular there should be an explanation of all and any future cost savings that will arise.

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[55] See Chapter 11 for more details on Critical Assets.

Basically, each budget line should be accompanied by a thorough justification and supporting documents.

Budget V Actual expenditure

As the budget periods months pass it is necessary and good management to routinely do a comparison between the budgeted and actual figures. This can be presented quite simply as shown below:

Activity	M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11	M12	Total	Budge	Balance	% Balance	Notes
A																	
B																	

This can be easily done on Excel, and can be linked to the budget formulation spreadsheet – it can be made as simple or as complicated as you want.

The last column 'Notes' is extremely important – it briefly explains why there is a deviation between Budget and Cost. Expenditure may be under budget but in reality less work than planned has been done. Please see the paragraph above about activity measurement. Likewise an item may be over budget – if so an explanation is given in this column.

There should always be a figure included in the budget for contingencies – nothing ever really goes according to plan. The amount will vary with the nature and complexity of the work.

Important Points: Budgets

AM budgets are plans – plans can change with circumstances. Proposed changes have to be justified.
Spending more than budgeted should not necessarily mean that you are spending too much – it can also mean that the budget was wrong.
Being under budget is not necessarily a reason to celebrate – it can also mean that the budget was wrong.

7. ASSET LIFE CYCLE MANAGEMENT & COST

Chapter Purpose

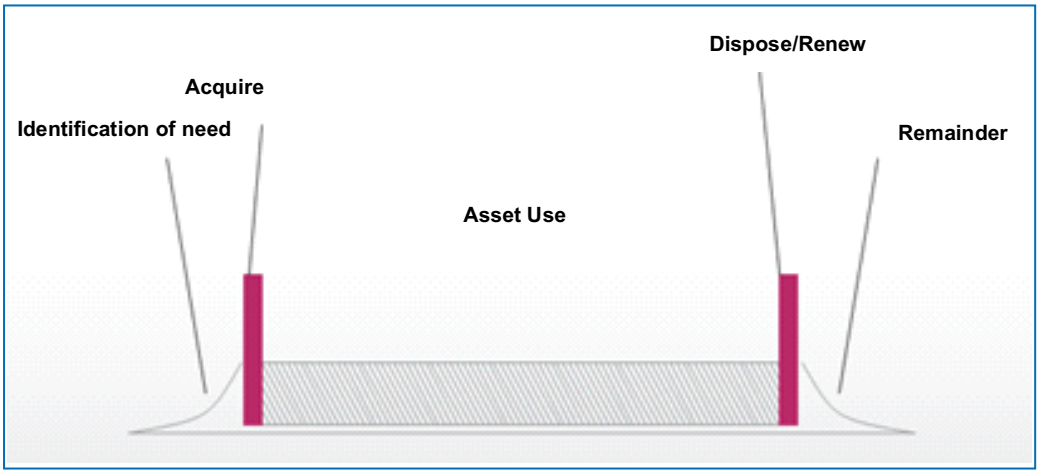
This chapter introduces an extremely important concept – that is the Life Cycle of Assets. AM staff will gain a detailed appreciation of the importance of Life Cycle Management (LCM), as well as an understanding of its implications. This understanding is necessary when looking at planning of/for and management of assets.

Introduction

The type of assets this Guidebook is dealing with have a life span or cycle. Some assets like land may have a lifespan of millennia in their basic format, buildings may last decades, monuments maybe hundreds of years, roads maybe a decade or so, water pipes maybe a decade.

Each category of asset will have a different life cycle, each category will also need different attention paid to it during its life cycle. This is extremely important for Asset Management. Land is a rather unique asset in terms of life cycle – it is extremely difficult to get rid of land, short of large-scale erosion by water. However what happens with land over time is that it can change and change dramatically. Arable land can become marshy and salty and thus lose its ability to grow crops. You still have land but it is no longer the land that you had in the first place. If you have a building as an asset and it is destroyed in an earthquake, you really no longer have a building, you have a collection of rubble, however you still have the land it stood on.

Asset Life Cycle [56] over time



Throughout the life cycle of any asset, as stated above, attention has to be paid in order to maintain it in its current state. For example[57], land near water, flood defences may need to be built, drainage system built, water may have to be pumped in to raise the fresh water level and pressure to counter possible salt water incursion[58] etc.

Land near where water is sourced for human consumption can lose part of its fertility and in extreme cases become arid.

These are extreme cases of changes in asset condition but they should not be ignored – the annual incremental change is not very noticeable and but when it is noticed, the deterioration has already been serious and maybe irreversible. Also to prevent and or even reverse this situation takes major effort, in terms of time, technology and funding

Land in a high subsidence prone area, land slide prone areas or flood planes are in a similar situation but the effects are more dramatically obvious.

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56 Source – Assets Magazine Sep 2011 – The meaning of life cycle by John Woodhouse.

57 Land is used as an example due to the diversity of potential issues that may have an impact on its condition. Some of these issues may not be obviously apparent in the short term – contamination with waste for example

58 Land near coastlines suffer from this incursion if the water table drops – which happens when coastal population centres draw their water from aquifers etc. The existing water table gets salt contaminated and eventually the land itself will also be contaminated.

The photograph below is a good example of a drainage system needing work and clearly shows that over time not only do nassets eed to be worked on – in this case cleaned out but also may need rehabilitation with the surface being scraped clear of any growth.

Source: www.facebook.com/ImeretisMxare/photos

In this particular case it might be worth looking at the depth of the drain and also the drop angle – thus allowing more water to flow faster. Alo some form of covering should be considered to reduce rubbish and leaves etc entering the channel.

In Georgia, there are some specific land related life cycle issues that some municipalities will have to consider and these are pollution related. For example either ground water contamination or the land itself being contaminated by heavy metal residues or other chemical contaminants from industrial activities, including oil spills or seepage from storage tanks. A plot of land regarded as an asset to be used for potential housing may be found to be unusable because of contaminated ground water or having chemical or heavy metal contaminants from old and/or nearby industrial activity, for example. Maybe it can be rehabilitated but the cost will not be cheap.

Municipalities that think they may have such sites need to have them scientifically and environmentally looked at – not just on the surface but for meters down.

The more common assets are not so dramatic in terms of what can happen and what can be done to keep them in the condition that they need to be in.

This is usually referred to as 'maintaining the asset'. Before looking in detail at maintenance there is one issue regarding individual assets that needs to be considered – its useful life. This is defined in the context of this Guidebook as the period over which an asset is expected to be available for use by the municipality. This must be kept in mind as the nature and severity of the maintenance (and related cost) changes over time. Eventually there will come a time where the cost of the maintenance may outweigh the benefit derived from having the asset. Sometimes the term Economic Life is used, this means the length of time for which maintaining and operating the asset remains the lowest cost alternative for providing a nominated level of service.

Maintenance is defined in this context as all actions necessary for retaining an asset as near as practicable to an appropriate service condition, including the regular ongoing day-to-day work necessary to keep assets operating, e.g. road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life. There are many types of maintenance

Types of Maintenance:

Maintenance Type	Elaboration
Planned maintenance Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was	This can apply to buildings/land as well as machinery and equipment. It is scheduled and planned in advance and can and should be included in the Annual Asset Management Plan and related budget planning. It arises from knowing the assets condition and determining its ability to perform as required.

Maintenance Type	Elaboration
done to develop a maintenance history and improve maintenance and service delivery performance.	This also includes preventative maintenance. An example of this would be the installation of anti-flooding devices in anticipation of river levels rising, or the reinforcement of landslide netting in anticipation of heavy rains.
Reactive/Corrective maintenance Unplanned repair work that is carried out in response to service requests and management/ supervisory directions. It is maintenance that is performed on an asset after it has failed.	This also applies to buildings/land and machinery. The asset has suffered a disruption of some sort, e.g. unanticipated part failure or accident and needs to be fixed. This is not possible to plan for in detail but there should be a budget allocation for such things[59] – particularly as assets get older. Also in particular relation to machinery assets, the issue of having a minimum level of spare parts immediately available needs to be planned for. Careful monitoring can be used to reduce this more disruptive reactionary maintenance.
Deferred maintenance The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.	This is maintenance that should have been carried out but which was not done at the appropriate time. Deferment is very often due to financial constraints and the lack of resources or other assets having a higher priority.

[59] A contingency budget allocation.

Maintenance Type	Elaboration
Specific Maintenance Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital maintenance threshold and needs to be identified in a specific (recurrent or operative) maintenance budget allocation.	This can also apply to all relevant assets but primarily relates to machinery and infrastructure. It is a sub set of planned maintenance that focusses on the replacement of or work on a component of an asset – replacement of motors, valves etc. The issue of spare parts availability is not as severe as with corrective maintenance but is still there. This can be and should be scheduled in advance and thus should be incorporated in the AAMP and related budget.

Most maintenance activities can and should be planned well in advance, some assets will require minimum maintenance in a year – particularly land. Some suffer more from operational use and may need frequent periodic care and attention.

There needs to be a schedule of all maintenance produced and updated on a routine basis. This should show all the assets and a visual display of planned maintenance based on timelines, showing start and end dates. This can be done on sophisticated software or very simply on MS Office Excel or MS Project Management if you want more sophistication. If you opt for Excel and plan your data carefully you can link to such as Google Maps and display the planned work onto a map covering the Municipality. Asset Management staff will not be responsible for actually doing the maintenance work but should be responsible for ensuring that it is done, as and when scheduled. AM staff should keep meticulous records of all maintenance carried out and should update the asset records as a matter of routine.

Important Note – Critical/High Priority Assets.

Some assets which may not have a high priority for routine maintenance but will have absolute priority for reactive maintenance.

This may appear contradictory but is actually quite logical in many cases. For example, there is a bridge on a major roadway in your area of responsibility. This gets routinely cleaned and maybe even painted every few years. If this is missed by a few months – deferred, there may be some complaints. However, if there is a flash flood and the bridge is washed away or damaged and unusable, it needs to be worked on immediately and will receive full focus.

This bridge being built is clearly a critical asset – it is also visible as not being a new build but a replacement for one that went before and which for reason unknown to the author needed replacing.

Source: www.facebook.com/ChiaturisMunitsipalitetisGamgeoba/photos

In less obvious cases, water pumps may fail and village supplies stop. This can be very disruptive for those suffering. In these cases however careful monitoring of the

assets performance might often give warning of an upcoming failure and preventative maintenance can prevent the disruption to service. In cases where machinery is involved, the holding of essential spare parts can often be necessary. There is always a trade-off here between stock levels and finance. Spares can be expensive and are very often viewed by finance people as being just money tied up sitting in a store. It is a bit like insurance, when you do not need it people think it is just paying money out, however, when you need it you really do need it.

If the water pumps are available locally then maybe you only need to know where to buy one (assuming procurement procedures and funding allow a speedy purchase) or maybe just keep one in store – and replenish the stored one from a purchase. If the item is not sourced locally and needs days if not weeks to arrive, you need to have a minimum stock to operate until the replacement arrives.

The same applies to water pipes, valves and even filters, not to mention the ubiquitous generators.

Obviously you do not need to keep a bridge or a road in store (even in its component parts but maybe some block work, concrete, asphalt or mesh would be useful. Just enough until more can be bought and delivered to the repair team.

It is essential that there be a reserve of time-sensitive spares kept close at hand – even if only for stop gap solutions that will keep the operation going or asset performing until more comprehensive recovery work is possible, An example here would be basic spare parts for pumps and generators, screens for water and waste water filters, metal mesh to plus gaps in fences, spare pipes. Even such basic items as a store of sandbags to help block or at least stem water overflows or indeed to even redirect the flow to less damaging locations. The same applies to guttering and hose pipes.

All assets need to be looked upon with this in view and particularly those that are essential and have a high priority.

Money can be saved and service improved by reducing the diversity of machinery being used. If the municipality is using a number of water pumps of different types,

then the necessity of having some spares for each type will have to be considered but if only one type of pump, you will not need to hold so many spares. Maybe two sets of the one type rather than one set for each of the six types. AM staff should have an input is setting the levels of spare parts being held.

As assets proceed through their life cycle (this needs to be tracked by AM staff – ideally in the same application as that on which maintenance planning is monitored) there will be need for more and greater maintenance in order for the asset to perform its function.

There will come a time (this needs to be anticipated well in advance by AM staff) where proposals have to be made as to how best to proceed with an asset:

- Continue as is, maintaining it at higher cost and suffering more disruption;
- Carryout a major rehabilitation of the asset, just rejuvenating it and extending its asset life;
- Replace the asset completely.

These are not decisions for the AM staff to make but AM staff should provide a full and comprehensive analysis of the cost and maintenance as well as operational costs of each option.

Some assets nearing the end of their functional life may be available for other uses – particularly buildings. Also assets that are currently not being used due to their bad state of repair could be looked at to see what can be done with them. Possibly with some rehabilitation they may be able to contribute to the Municipality's activities. This rehabilitation is much more than extreme maintenance, it is basically reviving an asset that is functionally dead. Assets in this condition should be identified and examined to see if they have any potential use after work has been done on them.

As some assets get near the end of their useful life it is harder to predict how they will perform, however, AM staff should routinely examine the performance of each asset. These findings should be recorded in the asset's file. Any findings of note should be discussed with the head of the department using the asset.

The Mayor should be made aware of the potentially contributing but not currently contributing assets. Again while not the decision of AM staff, they should point out assets that can be used in potential Capital Investment Projects. As with all such there should be a comprehensive cost benefit analysis provided by the AM unit.

Some assets, when they come to the end of their usefulness and cannot be repurposed or rehabilitated need to be examined to determine how best the Municipality can handle them. It may be that they should be abandoned (particularly buildings). Ideally, the buildings can be demolished and the land possibly reused with some benefit to the municipality through the sale of the bricks and scrap metal.

The disposal of assets should be proposed and included in the Annual Asset Management Plan.

As mentioned elsewhere the disposal of assets can be a specific policy decision in order to generate revenue. Based on this the AAMP would naturally provide a list of assets suitable for disposal and compliance with this policy or simple objective of revenue generation.

Important Note – Asset Disposal

All issues regarding the disposal of assets needs to be handled with great care. There are strict procedural and legal issues as well as financial considerations. These procedures have to be known and understood by all those involved in Asset disposal. There needs to be municipality specific procedures documented – these need to be incorporated in the Asset Management Policy documents and any associated procedures.

If there is any residual value[60] in the asset, how can the benefit to the municipality be optimised through the disposal process? Again where there are options available, they need to be quantifiably analysed and the findings presented for deliberation and a decision.

[60] Residual Value – (salvage value) of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal.

It is obvious throughout this chapter that those involved in AM, need to know the cost of the assets – not just the asset entry on the balance sheet. They need to know to the level of the individual asset what it costs to maintain and operate.

This financial data is needed on a routine basis and needs to be recorded by those in AM in a clear and convenient display and analysis format. It should ideally be in a single Excel type file along with the summary of asset data and asset maintenance schedule.

8. O&M – OPERATIONS AND MAINTENANCE

Chapter Purpose

This Chapter is an introduction to the fundamentals of Operating and Maintaining Assets (O&M). Naturally the actual operating and maintenance activities will vary greatly from asset to asset.

Introduction

No asset should exist without some element of O&M. Some assets may have no immediate operational function; they may be waiting for future use. Though this is not a desirable situation it is reality. No asset should be left without at least the barest minimum maintenance. Should this happen it means that basically the assets condition will deteriorate and the functional value of the asset end. Indeed the actual physical condition of the asset may quickly become such that whatever value the asset had for the Municipality may simply vanish.

Asset Purpose

Every asset has a purpose or use or more correctly should have a purpose or use. This purpose is what gives it value to the Municipality. In this Guidebook there is reference to an asset having to have value for the Municipality and that some value cannot be measured in monetary terms. The asset may not be 'profitable' in economic terms – nevertheless it is valuable. In fact not only may it not be making a 'profit', it may actually be costing the Municipality to just possess it. Statues do not make money – they cost money.

The purpose of O&M

The purpose of O&M is to maintain this functionality (capacity and integrity) of the assets. The ability to effectively operate and maintain an asset so that it performs as intended depends on the development and implementation of routine inspections and repair programs. Appropriate rehabilitation including selection of rehabilitation materials and equipment, construction and inspection, and testing and acceptance, all play an important role.

In summary the role of O&M is to:

A. Ensure the availability and functionality[61] of the assets as intended, having them perform in a reliable and cost effective manner;
B. Maintain the value, condition and functionality of the asset, preventing avoidable deterioration and decay. If an asset is not maintained, it will deteriorate through normal use and age, as well as corrosion and material decay – through atmospheric and pollutant interaction if nothing else.

Assets come in all shapes sizes and types. Land, can be agricultural or not, may need care because of proximity to water, buildings may be inhabited or not, parks may be big or small, water pipes may be big or small – plastic, cast iron etc. Some have major operational wear and tear. Some have a more passive life. Naturally it goes without saying that the O&M activities for say a plot of land near a river will be quite different then for a water pump supporting a well in a village, or a small city park.

O&M First Step

Though this is covered elsewhere in this Guidebook in great detail it is necessary that it be also looked at here. The first step in asset management is to have a register of

[61] This is of paramount importance when looking at critical assets.

your assets. This is not only having a list of your assets. It means having a list of assets, with a record of their location, status, technical specifications, operations record and maintenance conditions.

This detailed register of assets is essential to the ongoing sustainability and good financial management of any municipality's assets.

This asset register should be routinely updated with regard to the condition of assets and what maintenance has been carried out and what is planned. It should also contain details indicating the performance of the asset – e.g. if a water pump: litres per second performance, duration of working time between breakdowns etc. This latter type of data is necessary for all assets, especially machinery.

A final but essential element of the database is the criticality of each asset – this is the ultimate determiner of priority[62]. This basically refers to how important it is that the asset does not fail in its function.

Each asset has a unique ID reference [63]– this reference should be included is each and all reports – be they, site visits, inspections, work orders, progress reports and details of work done.

In parallel with the above is the existence of policies and procedures in relation to the authorisation of work, the planning of work. Staff should be adequately trained and have the necessary material and equipment at hand. This applies to contracted personnel as well as to the municipal (or related organisation) staff. Also there should be a clearly understood and enforced procedure for recording the work being carried out – this will be used for determining the costs to be charged against the asset and to keep management up to date on the status and condition of the asset.

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62 See Chapter 11 dealing with Critical Assets.
63 See Chapter 3 dealing with records in Asset Register.

Asset Operations

This can be extremely complicated for Asset Management (AM) staff for a number of reasons. Most, if not all assets, will **not** be operated by the Asset Management team. For example buildings will be used by those departments occupying them and machinery will be under the operational control of the relevant department or unit.

Whilst those responsible for AM there is also an added complication – there are basically four major types of assets:

A. Buildings, such as offices, kindergartens etc. The actual asset operation element is very low level with the functional activity within the structure being of a higher level. The asset operation level is really only the basic caretaking and security. AM should also be interested in energy consumption in such locations;
B. Infrastructure assets – roads, bridges, and flood defences etc., are as A above but with less municipal personnel activity – few if any staff on site. These are larger in scale than A and very often are more impacted by external factors – traffic and weather for example, thus giving rise to wear and tear deterioration;
C. Infrastructure assets – water pipes for wastewater and drinking water. In the main these are underground and are impacted not only by external factors such as soil condition and even weather but also by age and volume and nature of throughput. Problems with this group tend to occur more easily than with previous groups, and are also less easy to detect in the early stages. In fact in most cases the first you know about a potential problem is when you have the problem. At least with above ground structure it is possible that indications of problems can be seen in advance. This issue is extremely important with regards to maintenance planning;
D. Machinery – basically assets whose life is primarily measured in working hours or throughput rather than in years of existence. These are very often but not always connected to C above. In this grouping it is easier for Asset Management people to monitor the operations of the assets, without having to interfere physically – activity reports that would be useful for the department operating the asset can also be used to monitor the condition and performance of the asset. Pumps, valves, generators are simple examples of this group. This group also normally has a requirement for fuel/energy and lubricants.

Asset operations have two direct implications for asset management planning and procurement. If an asset has an operational function – again mainly those of type D above, there are two issues that need to be looked at by both Asset Management and Operations Management staff:

- Manpower requirements – number of people, time needed and cost of operation;
- Skills needed – how complex is the asset to operate, what qualifications and training do staff need. Staff with specialised skills can be hard to find, expensive to train and both difficult and expensive to keep on staff.

These two issues must be taken into consideration when looking at the acquisition of assets and their planned operation. Constraints on pay levels for public service staff can be avoided by the establishment of a separate but municipal controlled entity or through full outsourcing[64] of an activity – this allows for the retention of staff in operations but it has major cost implications for the Municipality's budget.

Whilst it is obviously important for those responsible for Asset Management to be familiar with and up to date with the operation of the various assets under their mandate, it must clearly be understood that the assets are operating outside of their control. It is essential that they be aware of the relevant financial aspects of the operations – how much are the core costs of each asset [65] [66].

Assets of type C&D are by their very nature and their functionality somewhat more complicated. The way these assets are operated can have a major impact on their life span and their ability to function. This is particularly true of machinery. Machines[67] are built to work within specific parameters. If machines such as pumps are run for too long or at higher than specified capacity this can seriously damage them and either shorten their working life and or greatly increase the need to maintain them.

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64 This can be staff or service support provided by the asset supplier or specialist firm.
65 This will be looked at more detail in the Chapter on Costs Chapter 6.
66 This is essential for Cost Benefit Analysis
67 Supplier supplied support and maintenance can be a component of the supply contract. Great care needs to be put into the inclusion of and management of these elements of a contract.

If equipment is working longer than it should or at a higher capacity than specified then this equipment needs to be monitored carefully. The need for this higher than desirable workload needs to be looked at. If it is unavoidable then the issue of anticipating a disruption or break down needs to be considered and remedial action taken.

This can take the form of:

- Having a higher level of spare parts available and having in place contracts to meet requirements;
- Carrying out more comprehensive maintenance when possible;
- Look at supplementing the existing asset – smaller pumps to take load off main pump for example;
- Examine the possibility of replacing the existing machinery with a more powerful model.

When a machine is bought it is planned for it to carry out a specific level of activity – run for 12 hours a day for example. Over time the need might rise to 18 hours a day. Therefore, when looking at acquiring such assets the future potential requirements must be considered. It may mean spending more now to have the capacity available next year. Financially this may not be popular but operationally it may make a lot of sense. When acquiring assets think for their use years ahead. This means being aware of the longer scale plans of the Municipality. The immediate plan may show that a water distribution system needed for 1000 people can really only supply 800. A 25% increase can be handled by say increasing the pump size. What if there are plans to increase the population in the area to 2000 in a few years? The short-term solution of a new pump will not work then – it is necessary to look at a bigger pipe network, building a small storage facility etc.

Short-term solutions work in the short term. Sometimes it might be more cost effective to adopt a long term approach earlier than later[68]. However always remember that what might be the 'right' solution from an Asset Management' perspective may not be

[68] See Chapter 9 dealing with Cost Benefit Analysis.

so on a Municipal level. There will be financial implications in the short-term that do not allow for this 'ideal' solution. The role of AM staff is to propose and defend the solution and the fact that it is not implemented should not be seen as being a negative mark on their work.

Maintenance – an elaboration

This subject is dealt with briefly in an earlier chapter; here it will be covered in more detail.

As mentioned elsewhere earlier in the Guidebook (Chapter 7), maintenance can be proactive or reactive or basically planned or unplanned.

Similarly to the operation of assets as mentioned above, certain maintenance activities can be outsourced. Also when taking new assets on the books via construction contracts, it is possible to build in a clause covering the provision of specialised technical maintenance for a set time frame.

Planned Maintenance

Planned maintenance is by its nature more cost effective in both short and long term, as the work can be planned in advance - materials sourced and placed in readiness, workers scheduled etc.

A good preventative maintenance plan has the following prerequisites:

1. Inventory of Assets[69];
2. Record of asset condition;[70]
3. Knowledge of availability of spare parts and related materials;
4. Availability of trained personnel;

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69 This is covered in great detail in Chapter 3.
70 Ibid.

5. Awareness of functional requirements of assets.- short term and long term;[71]
6. Awareness of long term plans for assets[72];
7. Knowledge of Municipality Policies and procedures[73].

Any plan without all of the above would basically be a useless paper exercise. An Asset Manager has to have all these prerequisites in place as a matter of standard practice.

All preventative maintenance needs to be planned in advance – this is not only good management practice it is a necessity in order to comply with Municipality budgeting practices. Planned maintenance, given that it can be and should be scheduled in advance, leads itself to being outsourced[74].

With the prerequisite information gathered, a proactive maintenance plan can be developed, rehabilitation needs identified, planned for and budgeted and work scheduled. Implementation and tracking of a proactive maintenance program can be substantially improved using mapping tools – these can range from expensive dedicated GIS applications to freely available online packages.

This planned maintenance should be outlined in brief in the Annual Asset Management Plan (AAMP) with more details included in an annex to the AAMP.

It is important to note here – though relevant throughout all AM activities - a plan is just that, a paper exercise: circumstances change, municipality priorities change, funds and resources may need to be redirected to more critical issues. It is not absolute. Also remember that a budget is a financial plan and the same applies. Also it is very important to note that just because there is an underestimation in how long it

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71 This relates to what the Municipality service levels require and the Municipality Annual plan.
72 This relates to the Annual Asset Management Plan and the long term objectives of the Municipality.
73 These are covered in detail in Chapter 4.
74 Outsourcing is an issue that should be covered in the Asset Management Policy and it should also factor into the AAMP.

takes to do a task or how much it will cost, this should not prevent it from being done as time progresses and more information becomes available.

Planned maintenance can be of a routine nature: inspect the asset, carry out low level, low cost work, identify possible issues for future investigation etc.– in a municipal case it would be: filling in cracks in walls, fitting windows, reashphalting and filling pot holes, or in the case of machinery – check motor, bearings, setting, repair/replace small parts as needed, identify potential future problems.

The ubiguitous pot hole (below) is never good for road, vehicles or municipality reputation. The lack of prompt maintenance not only leads to damaged vehicles and annoyed travellers, but also given the Georgia weather will increase in size very quickly.

Source : Authors.

All asset inspections should be documented – and recorded using the unique asset reference number as an index. All these reports should be recorded eventually electronically. It is easiest to make the initial reports on paper but these can and should be either scanned or transcribed and stored in appropriate folders on the computer system – as they are electronically stored they can be stored in multiple locations and forwarded very easily to relevant people as needed. Likewise, all and any repairs to assets should be similarly recorded and where appropriate disseminated.

Based on the findings of the periodic examination of the assets, there may have to be further maintenance in depth carried out. There are a number of elements to this:

A. Urgency of the needed repair;
B. Implications of not carrying out the work: The statue in the town square looking weathered is not the same as the anti-corrosion paint on part of the flood protection being badly weathered. Implications of not doing something has a major impact on the prioritisation of what sequence the work is done in;
C. Availability of resources – this relates to material, personnel and funds. If the work is not a problem with regards to A & B above and the Municipality might not have much cash available, then maybe the corrective work can be included in next year's AAMP and budget.

This photograph shows a street side storm drain in need of basic maintenance. The level of visible grown indicates that it has not been cleaned for some time. Also the amount of growth on the right wall may indicate that plants have taken root in the wall itself. If this is the case rehabilitation of the wall will be necessary. As with the other photographed drain above, standing water means there is a blockage somewhere in the system. Depending on location such standing water can be a breeding ground for mosquitos and other undesirable life forms. Routine maintenance will eliminate these issues.

Source: Authors

This type of maintenance is very simple to organise, budget for and implement, It is however not the only type of planned maintenance. OR maybe the funds can be used or made available for remedial work or rehabilitation of Critical Assets.

Planned maintenance can also be specifically targeted – this will be increasingly the case for those assets that are far into their life cycle. This targeted maintenance can be based on possible issues of concern that were identified in a previous year's routine inspections, with work deferred to this year.

Predictive maintenance looks at assets in which problems are anticipated. This anticipation can be based on observation and inspection (see above) or based on knowledge of the asset. Monitoring performance criteria over a period of time and observing changes in performance so that failure can be predicted and maintenance can be performed on a planned, scheduled basis.

As assets proceed through their life cycle, they or at least their components start to wear out and consequently need refurbishment, rehabilitation or indeed replacement. By being aware of the technical specification of an asset and the actual use of the asset, it is possible to predict when intervention is probably going to be needed. For this to be done efficiently those involved with AM must not only know the technical details of the assets but must also be up to date on the operational performance of the relevant assets.

When looking at this predictive maintenance – particularly of those assets far into their life cycle, there should be a basic Cost Benefit Analysis to assess whether the condition of the asset is such that it might be more cost effective to replace it in the near future rather than to continue to repair it. However it must be kept in mind that while it may make economic sense to invest in a replacement, the reality of funds availability may take precedence. If this is so, a proposal should be made to those involved in Capital Investment Planning (CIP).

Budgeting for this targeted maintenance should be straightforward – management should know what needs to be repaired/replicated in advance and should be able to cost this work.

Reactive Maintenance

Reactive Maintenance deals with something that has gone wrong and an asset has failed or is just about to fail. Reliance on the reactive maintenance always results in poor asset performance, especially as the asset goes further down its life cycle.

Normally, corrective maintenance indicates an inability to plan and schedule the works, incapacity of adequate budget planning and poor use of resources. However, it must also be understood that not everything can be predicted and foreseen. Most can be, but not all.

Reactive maintenance is either:

A. Normal reactive maintenance – this can happen on a daily basis whether it is a water supply pipe break or a wall collapse. Very often this issue can be prevented or be minimised with an effective maintenance program;
B. Extraordinary reactive maintenance actions are infrequent and usually much more serious in their implications, Damage might be caused by heavy rain rainstorm, floods, earthquakes and fires etc.

Damage can be minimised by implementation of a planned maintenance program and development of a comprehensive emergency response plan.

This last category of maintenance is not easy to predict in detail. It may be possible to say that the flood defences will be breached during the winter floods but it will not be possible to predict exactly where. Earthquakes and fires are even less predictable.

Certain anticipatory measures can be taken – and should be taken – particularly in the case of critical assets. As mentioned in the chapter dealing with Critical Assets, there should be contingency plans developed (periodically updated) and in place, along with

either a stock of necessary items (cement etc.), or that agreements to acquire the necessary materials are in place.

Budgeting[75] for such maintenance is not so straightforward and needs to be carefully thought out. For repairs or even replacement in the medium to long term funds can be sought from Government sources[76]. However, in the immediate time frame there will have to be some action taken to get the asset back to functioning if only to a minimum level of service. This interim and long-term solution will in all probability require work from those involved in CIP.

Important Note – documentation

All maintenance needs to be documented and where at all possible linked to a specific asset. This is not only for costing purposes but also to have detailed and complete records of the current state of each asset.

[75] Budgeting is dealt with in detail in Chapter 6.
[76] Including the RDF – Regional Development Fund.

9. CBA – COST BENEFIT ANALYSIS

Chapter Purpose

The purpose of this chapter is to simply introduce AM personnel to Cost Benefit Analysis – not to make them CBA practitioners.

It also shows how basic CBA can be used for cost comparison purposes and for activity planning.

For a more detailed look at CBA (in a more financially focussed way) please consult Chapter 3 of the Capital Investment Planning Guidebook that is produced in parallel to this Guidebook.

Introduction

Throughout this Guidebook you will find reference to Cost Benefit Analysis or CBA. In this Chapter, we will look at what CBA is, how it is 'built' and what use it is to Asset Managers and Municipalities.

CBA is a tool used (normally by finance people) when considering whether or not to invest in a particular project or set of activities. Put very simply, it is a framework for comparing the cost of a particular course of action to the benefit obtained from that course of action. It is used in determining whether or not to proceed with a capital investment – e.g. building a new road. It can also be used to put a figure (monetary value) on non-capital activities – e.g. run a farm-produce market over a weekend.

It can also be used to more or less objectively compare options available for a specific job. Do you build the road this way, or in that direction, or do you maintain the existing road? Unless you can put some numbers on the activities it is hard to compare.[77]

The methodology for doing a CBA is dealt with in detail in the SRMIDP Capital Investment Planning Guidebook written in parallel to this Guidebook and supplied to Municipalities along with this Guidebook.

CBA must not be confused with Feasibility Study [78]. A feasibility study is "An analytical study prepared at the appraisal stage, combining technical, economic and financial, as well as environmental and social assessments of a project proposal and carried out to reach conclusions on the overall feasibility and sustainability of a potential capital investment project."[79] Those involved in Asset Management should have a clear understanding of what a Feasibility Study involves and normally have a major input into the carrying out of the study. This is because, in reality, they have to manage the Assets that come into being as a result of the study.

In contrast to the feasibility study, a CBA is a "quantitative assessment of costs and benefits of the project in monetary terms on the basis of alternative cost estimation". [80]

As mentioned above CBA is really a tool to measure the effect of specific actions in financial terms. This is clearly stated in the name of the tool: Cost, Benefit and Analysis.

Costings[81] should be and in fact must be available with regard to the existence of each and every significant asset. In order to know how a proposed activity compares in terms of cost to an existing operation, the existing costs have to be known. It is not

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77 This will be looked at in more detail in the companion CIP Guidebook.
78 For details on what a feasibility study should contain please see ANNEX I.
79 This definition is also used in the Capital Investment Planning Guidebook also developed in parallel with this guidebook Section 1.2 Key definitions.
80 Ibid.
81 Costing will be dealt with in detail in Chapter 6.

much use to know that by spending 1 million GEL, the new cost of running an asset will be 10,000 GEL per month, if you do not know how much it costs the existing asset to operate before.

The Municipal accounts system must be able to generate asset level costings. Realistically this is not going to be possible for each and every asset in the municipality's control. It is not reasonable to have costings for each individual street light – extremely nice to have and may even be useful, but not really practical.

What the Municipality should and indeed ought to know is (for example) how much a particular building being used as a Kindergarten costs. How much it costs to maintain and keep in an appropriate condition. How much routine maintenance costs? How much does security cost? Lighting, Heating, Garden etc., How many staff – teaching, administration and maintenance and how much this costs? What is the condition of the building – does it need repairs, rehabilitation in the immediate to near future (1 to 3 years).

This latter element is extremely important due to the previously mentioned asset's Life Cycle Management and related cost. This simply says that as assets progress through their life cycle their care and upkeep costs increase and also possibly their operating costs.

As has been stated earlier in this Guidebook, the financial costs of various activities and options can be actual or estimated. Actual is better, but only works for historical costs. When looking at future anticipated costs there is no option but to use estimation – but, where at all possible, estimation should be based on reality and experience[82].

Without going into too much detail, an element of cost and indeed benefit must be looked at here. That is the time value of money[83]. Unfortunately money does not retain the same purchasing power over time. Inflation and exchange rates change and

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[82] The whole issue of costing will be looked at in more detail in Chapter 6.

[83] Time value of money is the concept that the value of money to be received or spent in future is less than the value of the same amount of money today.

impact money value; one hundred GEL in 5 years will buy less than a hundred GEL in 2 years. In practical terms, spending 100 GEL now to save 105 GEL next year is not financially a great deal, if you are saving 120 GEL next year – yes. When finance people are doing a CBA, they routinely use NPV – net present value. Net Present Value is the difference between the present value of cash inflows and the present value of cash outflows.

Municipality CBA is different

There are four major issues that make any municipality CBA different from what would be regarded as a 'normal' commercial organisation's CBA.

These are:

A. Difficulty/impossibility of putting numeric value on benefits – this is best illustrated by example. If a Municipality builds a road to a village, how do you put a monetary value on that? How do you allocate a portion of that value to the municipality? It is possible to determine the potential economic value of the road in terms of increased trade and this possibly might increase revenue for the municipality[84]. More often than not, it will simply just improve the quality of life for those living in the village and this benefit is almost impossible to value in money terms. Likewise an investment in street lighting – yes, shops may stay open longer and this may be beneficial financially to the municipality but benefits in terms of security are difficult to quantify. This is very much the case with critical assets that basically protect lives.

   CBA is carried out in two stages. First stage is done according to cash expenditures and cash revenue. This is called financial analysis. In this case non-monetary benefits are left out. Therefore, road investments etc. will not be profitable at the financial evaluation stage unless you pay money for using that

[84] There are rules or approaches for quantifying non-monetary benefits. This is valid for infrastructure investments like roads or for investments involving environmental benefits.

road. The second stage is socio-economic analysis and at this stage non-monetary benefits are taken into account.

This second stage or socio-economic analysis stage should be carried out by external specialists.

B. Most Capital Investment funds come not from Municipality funds but from various development funds or donors. This is a double-edged sword, the cost of the capital element of an investment project is usually 90% paid from outside of Municipality funds. From the municipality's point of view, this eliminates a major element of the CBA. However it raises another very important point – sustainability of investments. Most of the capital cost of an investment may be free to the benefitting municipality but there may be running costs and long-term maintenance costs that have to be borne by the Municipality in the years to come. A properly done CBA will bring these to the attention of those involved in investment planning;

C. Those funds that do come from municipal resources, either as part contribution to a bigger investment or as a municipality-funded investment, bring with them some complications. The Municipality may simply not have the funds to go it alone on an investment. Short term budgeting by organisations can lead to severe cash flow problems. Very often assets that should be replaced/rehabilitated are not replaced/rehabilitated in the short run. Even in cases where they are, the Municipality would save money in the long term. Many municipalities can afford high ongoing maintenance costs (or indeed let the asset further deteriorate by lack of maintenance) but simply do not have the funds to replace the asset. Some do not know that by replacing the asset they would save money in the medium to long term – this is even worse than not having the money;

D. As elsewhere in the world municipalities in Georgia are not profit oriented. Success is measured not in commercial terms but in services delivery and happy residents.

It is actually quite useful to carry out CBA on assets that are showing to be far into their life cycle – depending on results and cash flow or in some cases available external sources of funds, preventative maintenance or rehabilitation plans can be formulated and proposed for inclusion in the Annual Asset Management Plan.

Important Note – Money is not the only measure

Money is not the only way to measure the operational efficiency of assets. But it gives a great indication of assets that may have issues that need to be further investigated. This is particularly true of immovable assets.

CBA used to compare costs

CBA should be used as a means of comparing ongoing maintenance of an asset in its current condition with more serious rehabilitation options. It should be used to generate possible 'out of the box' solutions – for example, option B might be more expensive in total than option A but the ongoing future costs will be less; this is good for future cash flow. A Municipality can get assistance in the current year to cover the 'additional' cost of option B but would have to pay the higher long term costs of option A out of the Municipality's annual operating budget.

Though most Municipalities use external specialist when carrying out a formal CBA for presentation in an investment plan, it is important to know what goes into a CBA study.

Managing a CBA

1. Define and elaborate the project or activity being considered;
2. Identify all possible options within reason;
3. Determine the effect/impact of each option;
4. Put a monetary value on the costs and benefits on each option. Bear in mind putting a value on benefits may not be possible;
5. Also remember that in the case of Critical Assets the emphasis is on reducing the Cost – the Benefit is fixed. So look at different options;
6. Compare the options in terms of total cost/benefit as well as in sustainability and cash flow;

7. Take into consideration the various possible sources of funds;
8. Take into consideration Municipality strategy, objectives and plans;
9. Take into consideration the criticality of the assets and their priority for rehabilitation etc.

The above steps will not allow you to carry out a formal CBA – this is best left to financial/investment specialists, BUT it gives a good understanding of what is involved in detail. However, with some practice it will allow AM staff to develop a 'rough' and quick comparison or analysis.They will however allow you to do very useful cost of options comparisons – such as rehabilitate an asset this year or keep maintaining "as is" for a few years.

From the CBA, prepare a list of findings and propose various options to the Mayor.

There are four very important things about CBA:

1. It is a very useful tool – but only a tool.
2. It should be used regularly, not only for examining Capital Investments but also for examining maintenance/rehabilitation options.
3. It requires the existence of asset specific costing and where in existence asset specific benefit (in GEL).
4. When using CBA, also keep cash flow in mind. What makes good economic sense may not be possible in the real world due to a shortage of funds. To save money in the future through replacing an asset or rehabilitating one may simply not be possible due to lack of funds in the short term. It is however the role of those involved in Asset Management to point out the possibility of such savings.

10. WATER & WASTE WATER ASSETS

Chapter Purpose

The purpose of this chapter is many fold.

Initially it is to raise awareness amongst both Municipality management personnel in general and those involved in AM in particular of the specific Water/Waste water issues that make this probably the most complicated element of asset management.

Secondly, it is to introduce (and elaborate on) particular elements of water and waste water related asset management that require very careful attention.

Not a decorative fountain. Source BBC.com

The above photograph clearly shows what can happen when a mains pipe bursts (based on height of spray), The cause of this is unknown to the Authors but the effect is quite clear – loss of water supply to a lot of people, possible flood damage and even land subsidence due to saturation, even the nearby road may blocked,

Introduction

Water supply (and waste water but primarily water) is something that in the 21st century is almost taken for granted. The supply or more correctly the non-supply of clean drinking water has political, social, economic, health and environmental implications for the municipality deemed to be responsible.

Most municipalities have an outside entity supplying water[85] [86] to the larger population centres under their control. This is a reality on the ground. However, in all cases the municipalities have operational responsibility for the supply of water to smaller settlements and villages. Also Municipalities are often responsible for waste water in outlying habitations and parts of bigger population centres[87].

This means that the municipality is not responsible for the water related infrastructure in the higher population areas but is responsible for it in the areas with lower and usually more dispersed population. There are major financial implications of this arrangement. The outside entity charges a 'cost recovering tariff' for what water it supplies. Being in a geographically more dense population area its cost per consumer for infrastructure operations and maintenance is lower than if it was in a geographically more dispersed area. Municipalities may or may not endeavour to recover the cost of providing water to their citizens in the villages etc. – this is a policy decision and not an Asset Management decision.

Asset management personnel need to concentrate on ensuring service related assets are maintained and operated in a cost effective manner. Their involvement should be also with regards to acquisition of assets.

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85 Even though legally responsibility for the provision of this service lies ultimately with the municipality.

86 In some locations there is an issue of what assets still belong to the Municipality

87 The Organic law of Local self-Government Code (A16, P2) covering the supply of water and waste water put the responsibility with the Municipalities.
www.matsne.gov.ge/ka/document/view/2244429?publication=41 Article 163

Water (and waste water) assets are not a single type, there are buildings, above ground and below ground pipes, wells, pumps, reservoirs and if including wastewater there will be waste water treatment plants – it must be remembered that assets in contact with waste water cannot and must not be used for water.

Important note – water related asset failures are usually very public, very fast

When these assets fail, the results are usually very public and difficult and costly to repair.

Key Issues for Managing Water Assets

Responsibility

This is a very complicated issue; some water related assets may not in fact be 'owned' by the municipality but by an unconnected third party who is responsible for the supply of water. Nevertheless, for a variety of reasons, the municipality may maintain or have assumed responsibility for the maintenance and upkeep of the system. It is particularly important here, due to the complexity of the assets, the intensity of their use and their consequent maintenance and rehabilitation cost, that those who are responsible for the state of assets interact with those who actually operate the assets? Maintaining a pump in a good state may mean running it at a level that is inadequate for it to provide the required water flow. Also there is the issue as to how those who are responsible for Asset Management get the information they need to do their job without overly inconveniencing the asset users who are the source of the data needed.

It is clear that those who operate assets need to work in collaboration with those responsible for the assets. With complex assets requiring very technical operations and maintenance, it is best if those dealing with asset management take a more observational and advisory role – basically leave the professionals do what is needed but keep being aware of what is going on. Keep your management structure aware of options and implications and let them decide. It is not up to you to prioritise asset condition over operational requirements or indeed the other way round.

Asset Recording

It is very tempting and even natural to see and register a water supply system as a single asset. This can be done initially when setting up your asset register BUT at the first available opportunity you should break down the system or network into as many logical operational components as possible. This breakdown is essential due to the diversity of the components – building, pipes, machinery etc., all with different life cycles, maintenance requirements and operating characteristics.

Criticality

This issue has been looked at in other chapters, but it needs to be further emphasised here. Continuity of supply is not only highly desirable but is also something that can be readily attained if assets are managed properly. If there is a disruption in water supply in the short term it can have social and economic consequences. If waste water services get disrupted for more than a few days there can be also ecological and health concerns.

Also it is much easier to implement an emergency water supply via truck than it is to implement emergency waste water services.

This is equally important for waste water but the time element may be somewhat different. If water supply breaks down people will know almost immediately but if waste water system breaks down it may be a few days before effects are obvious. However it must be noted that depending on circumstances the implications may be more serious.

Critical assets already have a dedicated chapter but when it comes to water related assets, there needs to be reference to water specific issues.

When it comes to water related operations not all assets are equally important, some assets are highly critical to operations and others are not critical at all. Furthermore, critical assets are completely system specific. Certain assets or types of assets may be critical in one location but not critical in another. Each municipality must examine its own assets very carefully to determine which assets are critical and why.

City Street in Erzurum City – East Turkey – May 2018

Source: www.hurriyet.com.tr/

This is as a result of the collapse of a storm water channel. Nobody was killed but a lot of damage was done. Not only to the road and traffic flow but also to the users of the cabling that can bee seen. The fixing of this would take a lot of time and money and would be extremely disruptive. This may indeed be a case of where preventative maintenance would have prevented it happening.

To determine criticality, two issues have to be examined:

- how likely the asset is to fail, and, second;
- the consequence if the asset does fail.

This determination has several implications, such as allowing the municipality to manage its risk and in determining where to spend operation and maintenance money and make capital expenditure.

To determine criticality, asset management needs to look at what is known about the possibility that a given asset is going to fail. The data available to assist in this determination is: asset age,
condition assessment,
usage level,

failure history,
historical knowledge, experience with that type of assets in general and knowledge regarding how that type of asset is likely to fail.

An asset may be highly likely to fail if it is old, has a long history of failure, has a known failure record in other locations, and has a poor condition rating[88]. An asset may be much less likely to fail if it is newer, is highly reliable, has little or no history of failure and has a good to excellent condition rating.

Allocating a numeric grading of 1 to 5 to the above would be a first step in developing a tool for measuring the failure risk for a particular asset. With experience this can be evolved into a more sophisticated tool. A weighting element may be introduced based on experience etc. giving say a 5 in 'failure history' more impact than 'asset age'.[89]

The failure of an asset has many consequences – some of which can and should be measured financially. Some of these costs are direct In terms of the consequence of failure, it is important to consider all of the possible cost of failure. The costs can include:

a. **Actually fixing the problem, repairing or replacing the asset**.
Depending on the type of the asset and the extent of the failure, repair may be simple or extensive. A small leak in a pipe can be repaired with a clamp. A chlorine pump can be replaced with a spare pump or perhaps the diaphragm can be replaced inside the pump. A failure of a well may be much more involved and may require much more extensive repair efforts. The cost of the repair of the failed asset should be considered in the analysis of the consequenc of failure. If the asset can be repaired easily and without any huge cost, then there is a lower consequence. If

[88] A cast iron water mains pipe that was put in place 50 years ago in an area known to have suffered earthquake aftershock is at higher risk that a new non cast iron pipe put into a an aftershock free location in the last ten years.
[89] See grading the condition of Assets below.

the cost of repair is higher, then the consequence of the failure is also greater.

b. **Social costs related to the failure of the asset**:
When an asset fails, there may be an inconvenience to the consumer. In some cases, this inconvenience may be minor, while in other cases the social cost may be much higher. If a pipe must be repaired in a residential area, there may be a few consumers who are out of water for a short period of time. This break in supply is an inconvenience, but would not be a severe situation. On the other hand, if the system has very few isolation valves so that any repair on the network requires the whole/or bigger part of the network to be shut down, the inconvenience to the population is much greater. Though not really possible to measure this cost element in GEL, it is nonetheless of extreme importance.

Note that the social cost of a break in the wastewater network can go from an inconvenience to being a major issue if it is not resolved quickly or there is a resulting flow of effluent on the surface.

c. **Costs related to collateral damage caused by the failure**: When an asset fails, damage may be caused to other assets unrelated to the water or wastewater system e.g. a water line fails causing a sinkhole which then causes damage to the foundation of a building or a house or causes major sections of a road to collapse, or a sewer pipe leak than leaks sewage. The rehabilitation costs will include not only the cleaning up and decontamination but also possible major reconstruction. The costs of the consequence of failure can be quite high – particularly if sewage or waste water is involved.

d. **Additional legal costs related to additional damage caused by the asset failure**: individuals or businesses may take legal action against the utility for damages or injuries caused by an asset failure. These

would be in addition to the costs or repairing and replacing damaged property

e. **Environmental costs related to the failure:** Some failures can cause environmental impact. The costs related to these impacts may not always be easy to assess in monetary terms. However, some attempt should be made to establish some type of monetary value to the environmental consequences. An example of an environmental cost related to a failure would be a sewer pipe that leaked sewage into a waterway or onto land[90]. The determination of a GEL cost for such an event will be difficult to arrive at. Clean up and rehabilitation costs are going to be high, both in terms of GEL and municipality reputation and good will.

f. **A reduction in Level of Service:** If an asset fails, the ability to deliver the targeted level of service may be compromised. An asset that has a major impact on the ability to meet the level of service would be considered more critical to the system than an asset whose failure would not have a significant impact on the level of service.

g. **Other costs associated with failure or loss of asset:** These basically are all that are not included in the above categories. Included would be cost of specific equipment including health and safety gear. There will also be a loss of good will and reputation that will be not measurable in GEL but will need a lot of time and effort to recover.

The consequence of failure can be high if any of these costs are significant or if there are several of these costs that will occur with a failure.

[90] A sewage leak into a reservoir or into a water source would have major social and environmental implications

The numeric grading of failures may also, for example, differentiate 'Environmental cost' as having more impact than 'Reduction in Service level'

Maintenance cost & planning

There are pipes – above ground, underground, some are metal, some concrete, some with asbestos, some are from the Soviet period and some more modern – their location and condition has to be known and where necessary remedial and preventative maintenance planned.

Also susceptibility to earthquake damage needs to be identified and mapped.

For detailed planning to be possible there has to be, not only a detailed list of assets, but also details of location and current status, as well technical details of the particular items, their life span, their working limitations etc.

This awareness of the components of a water system or indeed a waste water system is also necessary for costing and budgeting.

Costing not only covers the maintenance of the components but must also take into account the human resources costs, the cost of fuel and lubricants and also the cost of chemicals – both to operate and maintain.

There has to be a systematic operation and maintenance program for the effective management of a water supply and sewerage system. As with all assets the operation and maintenance objective is to maintain design functionality – basically keeping the asset performing as it should and where this is not happening, to restore the system components to the original condition and functionality. This may require not so much maintenance but comprehensive rehabilitation if the asset has deteriorated a lot. This may no longer be a case of simple maintenance but also major replacement of at least components of the network. Effective monitoring, inspection, cleaning and rehabilitation are the key activities for optimising the proper functioning of a water supply and sewerage system.

Depending how the system is structured will depend how the operation and maintenance of the water supply and sewerage collection system functions.

However, the basic approach of operation and maintenance of the networks is to monitor the performance of the system under different working conditions. A specific set of activities should be implemented to monitor the effects on the networks that, in turn, will allow the operator to have a better overview of the system performance.

Any disruption of water supply is not good. A disruption in supply to a street for a few hours while a new pipe is being installed can be bearable for those affected. However to have a mains pipe burst, flooding a road or buildings and causing a loss of supply to hundreds if not thousands of people is something else. Now imagine if that mains pipe was carrying waste water!!!

Waste water services[91] & water treatment plants

These can vary from small-scale operations for a small village to large tens of million GEL establishments.

They are very complicated units that depending on size may need full time dedicated technical staff.

In all cases there will be the necessity to have on site a range of chemicals – chlorine for example. These will require special secure storage and very careful use. They are also complicated to transport and handle. All this has implication for safe operations, emergency planning and contingency planning[92].

All this costs money – not only to operate and store but also to be able to counter unplanned unwanted mishaps. What happens if 10 times more chlorine gets into the water supply or a couple of thousand litres gets into a local river? There has to be a realistic risk assessment carried out and appropriate measures developed and put in place should things go wrong.

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91 Included here is storm water defences and drainage systems.
92 For more on this see Chapter 11 on Critical Assets

In some locations the operation of these large-scale technical sites may be done by a third party. However, the issue what organisation ultimately controls the assets? If a third party with no connection to the municipality does, then there is no involvement of municipal AM people. If a subsidiary or a third party entity set up by the municipality does, then the assets should be recorded and treated as municipal assets.

In some cases assets of the municipality are handed over to these separate entities, then they should be taken out of the municipality records system.

This burst pipe (not large) in Gurjanni is not as dramatic as the one in the previous photograph, but in clearly show that even small pipe bursts can be dramatic and in this case disruptive of pedestrian traffic. Not to mention the loss of water supply and the cost of pipe repair and footpath rebuilding.

Source :SPEQTRI.GE

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Budgeting & Procurement

Expenditure in this area is usually on a larger than normal scale. This is definitely the case when it comes to procurement. The specification of what is required in the first place is quite complicated – given human, social, environmental, legal as well as technical considerations.

These are multi-year from 'concept to delivery' activities. Even in cases where the municipality will not own the assets there has to be AM involvement – land has to be acquired for example, not only for the plant but also for the pipelines[93]. When doing investment planning the determination of responsibility for funding ongoing repairs, maintenance and even operations has to be clearly defined and agreed.

Drawings and maps

These large-scale operations most often involve a lot of linear style assets (e.g. pipelines). These can be extremely problematic – even those that are over ground. Who owns the land that the pipeline is going through? Is there access for installation and repairs, routine inspection? Where are the gas pipelines, water supply pipelines ? [94]

All these linear elements – whether municipal assets or not, need to be mapped and available to those that need to know what is on the ground, over the ground and indeed under the ground.

Ideally the municipality should also have maps showing all power lines and towers, along with details of any other linear structures crossing the territory that is under their remit.– for the same reason.

Those that are assets should have all the material digitised, with the asset reference number incorporated to facilitate searching. By placing all digitised documentation

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93 Who will own these? Daughter Company, Water Supply Company?

94 This latter point is of major concern when it comes to the location of waste water pipelines. Where water pipes and waste water pipes are close the waste water should always be below the water pipes.

relevant to a particular asset in a single folder it is easy then to link this material with the Computerised asset register entry for that asset by hyperlinking the file to the asset record.

Benefits of involving the ultimate beneficiaries of the asset.

This section is particularly important when dealing with the supply of water related services to outlying towns, villages and other settlements, the locations for which the municipality is directly responsible for the supply of water and related services.

By their very location the establishment of networks can be quite complicated and both capital and operationally expensive.

Ask the beneficiary what they want from the system – if they want 24 hour supply, can this be met with a small local storage facility thus reducing the dependence on the feed pipe – allowing for the need of a less immediate response to breakdowns and thus reducing the need for an expensive critical maintenance response. Maybe the people will be happy to have regular predictable supply although not necessarily 24/7 – in such cases there would be the possibility of savings in pumping costs, both by using less fuel or electricity but also in less wear and tear on the pumping equipment.

The same could also apply to waste water – maybe the service level acceptable to the local residents may not require a link to the mains system, thus eliminating the need for a lot of expensive piping.

It may be acceptable to the users that the municipality be responsible for the supply to a single point in the location and they take responsibility for the installation and maintenance of the final stage of the network. The extent of such responsibility can vary from total responsibility, or to providing labour and maybe even equipment needed for excavation. Maybe they will accept responsibility for maintaining the system after it has been installed.

There may be a willingness and ability to pay for the service, either in full or in part. They may not be able to pay a full cost recovery price but any offsetting revenue is beneficial.

Once a level of service has been agreed on it should be formalised and honoured. The level of service should be reviewed on a regular basis. Such a review would be undertaken by the municipality (Mayor appointed member of staff or even the Mayor's office itself) in close consultation with the beneficiary representatives.

Grading the condition of Assets

This is included in this chapter due to the complexity of water related assets but this section applies to all assets covered by this Guidebook.

When recording the condition of assets it is important that there are descriptions of what each standard means.

The following tables shows the Condition grading, its meaning and its implications for the medium term and any implications for capital investment requirements. It should be noted that the condition is based on current usage rate and does not take into account any increase in demands made of the assets.

Civil Structures & Buildings Assets

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
1 Very Good	Sound modern structure, well maintained in "as new" condition. e.g. A new building – for administration, kindergarten etc.	Asset adequate for the medium term with only routine maintenance	Foreseen in the long term

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
2 Good	Sound modern structure, well maintained, but showing signs of minor wear and tear and/or deterioration of surfaces. No evidence of corrosion in structural steel components. e.g. A building showing some surface wear – for administration, kindergarten etc.	Needs to be re-inspected in the medium term. Unlikely to require more than normal maintenance in the medium term	Foreseen in the long term
3 Moderate	Functionally sound structure but appearance affected by minor cracking or staining, but no leakage to/from vessels with potable water. Buildings have more than superficial wear and tear as columns are affected by rust staining, minor cracking of brickwork or masonry, with barely adequate pointing. Minor leakage to/from vessels not containing potable water. e.g. older building with façade corrosion and staining	Will need maintenance in the short to medium term	Potential for capital maintenance in medium term to prevent deterioration to Grade 4

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
4 Poor	Structure functioning and just safe but with problems due to significant leakage, cracking, spalling, loss of stability or deformation. Buildings have roof leaks, rising damp, rotting structural woodwork, decayed brickwork or pointing. Corrosion substantially reducing size of structural members. Danger of contamination of potable water. E.g. building with major deterioration and structural integrity problems.	Needs almost immediate maintenance	Needed in short term
5 Very Poor	Out of commission because unsafe to use, corrosion causing significant reduction in size of structural members and overstressing, contamination of potable water has been a serious problem. e.g. as above but more severe	Out of commission. Requires immediate replacement.	Needed urgently in short term

Water Mains, Sewage or Sludge Pumping Mains

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
1 Very good	Modern pipe material designed to current standards with no evidence of internal or external degradation. No bursts have occurred.	Routine Maintenance	Long term need
2 Good	As condition 1, but not designed to current standards in respect of pressure ratings, design specification or corrosion protection. Deterioration causing minimal influences on levels of service.	Needs routine monitoring	Medium to long term
3 Adequate	Water mains, sewage or sludge pumping mains are generally sound. However, a few pipe wall or joint failures or evidence of some external or internal degradation. Some deterioration beginning to be reflected in levels of service.	Careful monitoring needed. More preventative maintenance Major rehabilitation may prolong life.	Medium term at best

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
4 Poor	Water mains, sewage or sludge pumping mains with a significant level of joint failures or evidence of significant external or internal degradation or likely to cause a marked deterioration in levels of service. Some asset replacement or rehabilitation needed within the medium term.	Careful monitoring needed. More preventative maintenance Major rehabilitation may prolong useful life.	Definitely medium term major rehabilitation or replacement
5 Very Poor	Unsound water mains, sewage or sludge pumping mains with extensive pipe failures, or significant external or internal degradation.	This should have been foreseen and maintenance plan in operation until replacement possible.	Urgent – should be in AAMP for current year

Network Pipes

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
1 Very good	Modern pipe material designed to current standards with no	Routine Maintenance	Long term need

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
	evidence of internal or external degradation.		
2 Good	As condition 1, but not designed to current standards in respect of pressure ratings, design specification or corrosion protection. Deterioration causing minimal influences on levels of service.	Needs routine monitoring	Medium to long term
3 Adequate	Pipes are generally sound, however, a few failures requiring replacement or repair. Some deterioration beginning to be reflected in levels of service.	Careful monitoring needed. More preventative maintenance Major rehabilitation may prolong life.	Medium term at best
4 Poor	Pipes with a significant level of failures requiring replacement or repair, with evidence of significant external or internal degradation or likely to cause a marked deterioration in levels of service. Some asset replacement or rehabilitation needed within the medium term.	Careful monitoring needed. More preventative maintenance Major rehabilitation may	Definitely medium term major rehabilitation or replacement

Condition Grade	Explanation	Expected Durability /Maintenance implications	CIP Implication
		prolong useful life.	
5 Very Poor	Unsound pipes with high level of failure, or significant external or internal degradation, which has failed or is about to fail, causing unacceptable levels of service. No life expectancy, requiring urgent replacement or repair.	This should have been foreseen and maintenance plan in operation until replacement possible.	Urgent – should be in AAMP for current year

11. CRITICAL ASSETS

Chapter Purpose

To reinforce existing awareness amongst those in AM that certain assets are critical not only to economic wellbeing but also to the physical and psychological wellbeing of the Municipality's citizens.

Water related assets are more complicated due to their diverse nature and functional use. Also they have a higher level of criticality therefore there is more detailed elaboration on this issue in Chapter 10 –Water & Waste Water Assets.

As with all chapters, this is written taking accepted international best practices into consideration, blended with Georgian circumstances

Introduction

This Chapter is a logical follow on and elaboration of the preceding Chapter on Water related assets.

An asset is defined as being 'critical' to both the Municipality and the Community it serves, if its failure to perform as specified is severely disruptive of the Municipality's services and is detrimental to the wellbeing of the community being served.

The failure of an asset can come suddenly as in say, a bridge collapsing due to flooding or over time, as with erosion of a flood barrier. Some events happen with little or no warning – although in most cases such can be anticipated. Some events are almost by chance; others are simply a matter of time.

The task of Asset Management staff is to be aware of those Assets that are of such importance that their failure either in part or completely is quickly and highly disruptive

to all affected. Asset Management staff must also be aware of the nature of the risks and have a good appreciation of the probability of occurrence.

Some critical assets are not what would be termed infrastructure, pumping equipment at a critical water supply line, would be a case in point.

Some critical asset failures can be regarded as posing a major disruption in community life and municipal services, but some may also be life threatening (this can be directly, as in case of flood defences failing, or indirectly through, for example, chemicals contaminating a water source or supply due to flood damage of storage units or even direct failure in a storage unit).

The initial step in managing critical assets is determining which of your assets fit into this category. This is not at all as straightforward as it first appears.

Clearly, statues and monuments are not critical assets based on the conditions outlined in the first paragraph above. But what if its location was such that there was a high risk of it falling and ending up in a school playground. Though in the formal sense of the term, it would not be a critical asset in the long term, in the short term it should be treated as such due to immediate risk to life.

What about bridges? A bridge in the centre of a town is obviously more critical than a bridge on an isolated little used road.

A dike protecting a pasture area from flooding is not as critical as one protecting a village or a hospital.

It is obvious that it is not really the nature and form of the asset that makes it critical or not, but more importantly the consequence of it failing to do its job.

Another and significant factor determining criticality is the probability of a failure triggering event happening and the frequency of it happening. This seriously complicates determining how critical an asset is. An event that happens annually – say, a river flood, has a different priority to something that happens once a generation.

However the timing of the first event is more predictable than the second event. Also unfortunately these more infrequent events tend to be more severe in their consequences.

Some events can be forecasted with a high degree of accuracy. There is going to be flooding of the river during the rainy season, particularly after a certain number of days of heavy rain – this regularly almost routinely happens in say the spring. Defences against this can be planned and implemented.

This photograph is a good example of river in flood and the disruption of infrastructure.
River Nenska; Tchuberi village of Mestia

Source : www.agenda.ge/en/news/2018/1432

Bridges are very often clearly critical assets and depending on location are often subject to hardship from rivers running fast and high swollen with flood water. This flood water very often brings with it stones, even bolders and all sorts of debris. The interaction of all this with the bridge structure can be quite damaging.
Preventive measures may alleviate some of the more serious damage – entra reinforcing pylons for example. Good local weather andriver behaviousr knowledge is essential in these ares in anticipating problems.

Some 'failures' are not based on external factors but are based on either the age of the asset, either in terms of years of existence or based on lifespan as based on activity. Buildings and structures have a lifespan measured in years, over time the materials degrade for a variety of reasons usually relating to the specific materials and their interaction with the environment. Concrete deteriorates faster in a salty environment, as do wood structures.

Some assets run on a life duration normally measured in working hours. Aircraft engines and even airframes are measured in hours of activity. In municipalities the assets that would be similarly measured would usually be generators, pumps, basically electrical and mechanical equipment. The more hours used the higher the risk of something going wrong. If a machine is set to operate within certain parameters and it is run at a higher rate than these, then naturally the possibility of something going wrong is higher.

All assets have unique life cycles[95]. As they progress through this, the requirement for maintenance and inspection increases. Assets require more care and attention in the twilight of their life – to use the human comparison.

Before going into detail on the assets, the obvious must be stated – all critical assets cannot be treated equally. No Municipality has unlimited resources in terms of finance, personnel and equipment to eliminate the threats to such assets. Decisions regarding the allocation of resources have to be made. The knowledge of and information available to those in Asset Management, not only makes this decision making easier, it should also greatly improve the benefit of the decisions being implemented – in terms of asset protection and the judicious expenditure of scarce resources.

[95] Asset Life Cycles and management will be dealt with in detail in Chapter 7.

Identifying and Managing Critical Assets[96]

Assessing criticality requires an examination of the possibility of failure and the consequence of failure as described above. The assets that have the greatest possibility of failure and the greatest consequences associated with the failure will be the assets that are the most critical. The most critical assets will fall into three main categories:

- Assets that have a very high possibility of failure with low consequence;
- Assets that have a very high consequence with a low possibility;
- Assets that have a medium possibility and medium consequence;

The remaining assets that have low consequence and low possibility will be the least critical assets.

How to identify and prioritise your critical assets:

1. Establish a small multidisciplinary team, including road, water engineers, environmentalist specialists etc.[97];
2. Collect as much mapping data on your municipality and surrounding areas[98] as is possible – ideally in electronic format e.g. Google Maps;
3. Make sure that you also include all relevant other party data[99] – all buildings, domestic, industrial etc. All storage of fuels, chemicals etc. also should be shown and clearly identified – this will include all and any materials that might be affected by an asset failure or which may cause problems to Municipal assets should something untoward happen, e.g. a damaged acid storage tank in a factory would flow onto a street, or into the waste water system therefore damaging the equipment in the waste water treatment plant;[100]

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96 See Chapter 10 – Water & Waste water assets for more details.
97 The addition of personnel with specialist knowledge is dictated by the location and geography of the Municipality.
98 This is important as the failure of an asset in one Municipality may have implications for another Municipality.
99 Municipality company, Water company, Electricity company, chemical storage or using company. Likewise those storing fuel. Municipality should have contact details, as well as information on any items that pose a risk. Municipality should have details of any emergency plans for such sites.
100 The Municipality may not be directly responsible for preventative measure but may be able to work with concerned parties to reduce potential threats.

4. Develop what is often referred to as a Risk Assessment for each asset that may be categorised as critical;
5. The various potential sources of threat [101] need to be listed, documented and analysed – based on probability, severity and impact. This analysis of threats needs to be correlated with the Asset records and potential risks determined and analysed;
6. Each potentially impacted asset needs to be documented in detail, current condition, need for repairs, rehabilitation etc. This requires not only a paper based exercise but should also involve on the ground inspection;
7. All necessary documentation relating to the asset needs to be collected – maps, technical drawings, photographs, bills of quantity, previous site visit reports etc. These should be retained by those responsible for asset management and where possible should be scanned and available digitally;
8. Based on the information available, and the collective knowledge and experience of the group members a detailed threat assessment can be produced for each asset – looking at threat, probability and impact;
9. Based on 8 and on 6, there should be proposed potential remedial action to minimise or ideally eliminate the threat and also the damage[102];
10. Based on 9, action plans related to the individual assets to be established – this may involve remedial action or maintenance, parts replacement or in extreme cases where no asset exists, actual creation of the asset through construction;
11. As in 7 above, these plans should be documented and where at all possible, should be digitised[103];
12. A Cost Benefit Analysis (CBA)[104] needs to be carried out on the various options being proposed. This is particularly relevant where an option for continuing to

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[101] The nature of the threat need not be external to the asset. Flood defences may fail because of disintegration of the concrete holding it in place, or a generator motor burning out.

[102] Bear in mind that any such action needs to take Spatial Planning considerations into account – it may not be acceptable to divert river flow into and flood an environmental conservation area for example. This is more so the case if dealing with chemicals and such items.

[103] The issue of digitisation will be looked at in detail later in this chapter.

[104] CBAs will be looked at in more detail in a separate chapter. It is important to note that CBA usually deals in hard numbers – it will not be possible to put a price on people suffering, their property loss can be measured, also their medical bills but not their suffering. Likewise the long-term impact on the environment is hard if not impossible to accurately put a cost on.

maintain as asset that is running high maintenance costs, overhauling the asset or even replacing the asset;

13. Once the CBAs have been completed, they are summarised and combined with a summary of the threat assessment as mentioned in 8 above;
14. The combined CBA and Threat Assessment is sent to the Mayor for consideration and decision;
15. Based on the decisions arising out of 14, the planned preventative maintenance activities[105] will be adjusted in the Annual Asset Management Plan and Capital investments will be initiated;
16. A schedule for reviewing the status of those assets considered to be of continuous high risk to be determined and implemented. After each review the situation of each to be reconsidered and remedial action planned, proposed and where accepted, implemented. All reviews to be documented and filed in the relevant asset files;
17. When there has been an event – for example a flood, it should prompt a site visit to the affected asset and a comprehensive re-evaluation of its condition, functional performance and risk status. If remedial action is required, plans (including CBA) should be drawn up and proposed;
18. For those assets whose life is measured in working hours, a comprehensive documentation and reporting procedure is developed with those actually operating the assets. The issue of spare parts holding, local supply contracts being developed and put in place, as well as ongoing recording of asset operational performance is also to be included here. All relevant documentation to be filed in the relevant asset file;

Through research and inter-agency liaison awareness of changes in the type and form of threat needs to be ongoing, recorded and personnel updated accordingly;

Those personnel involved directly in asset management and also those dealing directly with equipment operations, should keep themselves up to date with relevant

[105] A planned preventative maintenance should be included in the Annual Asset Management Plan, as outlined elsewhere in this Guidebook.

technological developments (in relation to operations and maintenance) and Georgian and international best practices;

Those dealing with asset management need to be routinely updated on infrastructure and other related changes initiated and carried out by other organisations – new pipelines, power lines, roads, extensions to treatment plans, new housing etc. All such items need to be incorporated in 2 above;

This examination of critical assets is not just a once off event. It should be done annually and the necessary adjustments to assets incorporated into the AAMP and consequently the Capital Investment Plan and the Municipality Action Plan.

An interesting example of a Critical Asset is the Cable car system of Khulo Municipality – see below. This can be regarded as critical for a number of reasons – disruption of service is detrimental to the economic and social wellbeing of the people – and this in the immediate aftermath of the disruption. Failure in operation can prove fatal to the users of the system.

Source www.khulo.ge/ge/tourism/skhaltis-eklesia

Important note – determination of criticality

This is done by taking the current and anticipated future condition of the asset into account, along with the cost and other implications of its failure.

The digitisation of material (referred to above) is extremely important for a number of reasons:

A. It allows for relatively easy organising and collation of data – just make sure that the reference number given to the relevant asset is included in the file name;
B. It makes the transfer and sharing of data between people and organisations extremely easy – almost at the push of a button;
C. It is way more ecologically friendly than having multiple copies of material circulating. It is also more cost effective, through a reduction in printing requirements;
D. Finally, it allows easy offsite storage of important data. Ideally, all asset records should be digitised. This not only allows for safe transmission etc. but also enables a copy of them to be easily kept in a safe location outside of the municipal offices. Having data digitised is good but really not much good if it is always collocated with the hardcopies in the office (which has just burned down or been flooded)

12. IMMOVABLE ASSET VALUATION – SPECIFICALLY REGARDING PRIVATISATION

Chapter Purpose

This short chapter's purpose is to introduce Asset Management staff to the valuing of immovable property assets, specifically with regards to the privatisation of Assets. This Chapter is important for all municipalities but in particular for those that have a policy of privatisation. It does not deal with the normally accepted valuation of assets in accounting terms – this is handled by the financial accounting department. There is no flexibility in this strict accounting process. The issue for AM in this case is to ensure that individual assets are identified and accounted for.

Accounting for the asset on the balance sheet of the Municipality and for disposal are the two reasons for valuation; this section relates to disposal. Asset valuation for balance sheet inclusion is a financial accounting issue and does not impact directly on Asset Management as covered in this Chapter.

The aim is to raise the awareness and knowledge of staff who deal with these issues within the Municipality and enable them to provide the outside specialists with all necessary information and documentation they need in order to do their job – better and quicker.
The knowledge can also be used within the Municipalities for the unofficial valuation of assets, in order to facilitate the development of Asset Management Plans and the related Capital Investment Plans.

Before going into detail on the approved and official method, a quick rough and ready valuation method should be looked at – this the comparison method. In fact this method is actually a component element of the Capitalisation method that is gone into in much detail in the following pages. On its own it is not official in any way but may

have a value in preliminary planning. However it has many points that need to be looked at. For comparisons to be any way valid and reliable, like has to be compared with like. A plot of land can really only be compared with a similar sized plot of similar land in a similar environment – this is obvious. A 200 Square metre plot of land in a town cannot be compared to a 200 square metre plot of agricultural land 10 kilometers rom a town centre or a derelict contaminated factory site of same size. However, a 4 story building in a block in reasonable condition can indeed be compared with a similar sized building in the same location (this comes into the capitalistion approach) . However, if the second building is owned by the Municipality and has not been valued all that can be said is that both have a similar but not specified value. If it has been formally valued then the comparison can be more useful.

Introduction

This chapter will briefly deal with issues related to the formal valuation of immovable assets specifically for privatisation (See ANNEX H for details).

It is understood that the official valuation needs to be carried out by a professional and certified individual or company and not a member of the Municipality staff. However, the Annex will explain in detail what goes into this calculation and will thus help municipalities better understand the complexity of the exercise.

For those assets not being privatised and remaining on the municipality's balance sheet, it is essential that all rehabilitation work details, condition status reports and all Asset specific costs be available. This will give the necessary data and supporting documents to determine the actual condition of the asset but also to determine the costs incurred in arriving at that condition. This is dealt with in detail in Chapter 6 on Costs and related issues.

For this to be possible, there have to be relevant records – maps, drawings, engineering reports on status and on work done, even photographs available and linked to the specific asset.

It must also be possible to collate all costs related to a specific asset – this is dealt with in more detail in a later chapter specifically dealing with the subject.

Valuation.

Official valuations are required in order to dispose on an immovable asset.
These are expensive to have carried out and should be budgeted for in the Annual Asset Management Plan; also the property disposal should be in the AAMP.

The normal method of valuation employed by external professional valuators is the capitalisation of revenues. This methodology is not only the practice followed in Georgia for such exercise but is also established international best practice in this regard.

Capitalisation of Revenues - General Overview

Introduction

The purchase of an income generating immovable property is generally considered as an investment and therefore from the standpoint of the investor, the revenues represent the major element in determining the value of the property with consideration of risk factors.

In other words, the investor invests the money with the purpose of gaining future revenues the current value of which exceeds the invested sum. Thus, for the property appraiser, the approach of revenue capitalisation involves the methods, techniques and mathematical procedures by the means of which the possibilities of gaining income from the property are analysed and current value of these revenues is determined.

The appraisal process is viewed as a unified analysis of the approaches for the purpose of establishing competent and accurate market price.

Information on revenues, costs and sales is available through a comparative approach.

Definition of (revenue) Capitalisation Method

The capitalisation method is fundamental because by determining the current value of the future revenues it is possible to establish the price of the property. Therefore, all capitalisation methods, techniques and procedures are used to determine the current value of expected future revenues.

General principles of revenue capitalisation

This process involves determining/forecasting expected revenues and establishing capitalisation rates and coefficients, which take into account possible changes that may take place in a certain period of time.

The key principle of this method is expectation, i.e. value is determined according to expected revenues; therefore, by means of any of the capitalisation methods the value can be established according to the current value of future revenues.

There are two main sources of the revenues from the investment in immovable property: periodic (monthly, annual) cash inflow and cash inflow through the sale of the property. In order to determine the price of an asset it is necessary to establish periodic revenues and revenues through the sale. It can be difficult to determine future operating revenues and immovable property does NOT have a fixed value that would enable us to establish the selling price at the end of the period.

The Capitalisation method should reflect alterability/volatility factors that exist and these factors are reflected in the percentages of the risk, discounting and capitalisation.

General Principles of Direct Capitalisation

The method of direct capitalisation considers a one-step activity: transformation into the figure of the one-year revenues. It is used when the data of such comparable facilities (rates and coefficients) is available and stable on the market. Direct capitalisation is segregated from the approach of revenue capitalisation and does NOT involve analysis of the cash flows except for the first year.

ANNEXES

ANNEX A - Classification of assets used in state budget of Georgia

This Classification is purely for financial accounting purposes and not for AM as covered in this Guidebook. This is the classification used for the recording of financial transactions.

Each asset will be assigned an Asset Accounting Code in the asset record – these will not be unique in most cases but it is the reality

Classification of assets used in state budget of Georgia

The classification is regulated by Finance Minister's Decree No.672 dd. 25 August, 2010. Actual classification codes and order is listed in Decrees' annex in Chapter V (p. 67-69). This document is also available at Georgian Legislation Messenger.

Chapter V (8.07.2011 N 678)

Classification of non-financial assets and their transactions

Classification of non-financial assets and their transactions represents grouping of non-financial assets, as well as operations on their purchase and disposal by types. The table below lists clauses of classification of non-financial assets and their operations.

Asset operation code					Asset code					Description
31					61					Non-financial assets
31	1				61	1				Fixed assets
31	1	1			61	1	1			Buildings
31	1	1	1		61	1	1	1		Residential buildings
31	1	1	2		61	1	1	2		Non-residential buildings
31	1	1	3		61	1	1	3		Traffic mainlines
31	1	1	4		61	1	1	4		Streets
31	1	1	5		61	1	1	5		Roads

Asset operation code					Asset code					Description
31	1	1	6		61	1	1	6		Bridges
31	1	1	7		61	1	1	7		Tunnels
31	1	1	8		61	1	1	8		Sewer and water supply systems
31	1	1	9		61	1	1	9		Electricity transmit lines
31	1	1	10		61	1	1	10		Pipelines
31	1	1	11		61	1	1	11		Other buildings
31	1	2			61	1	2			Machinery and inventory
31	1	2	1		61	1	2	1		Transport vehicles
31	1	2	1	1	61	1	2	1	1	Trucks
31	1	2	1	2	61	1	2	1	2	Off-road light cars (SUVs)
31	1	2	1	3	61	1	2	1	3	Light cars
31	1	2	1	4	61	1	2	1	4	Tractors, combine harvesters and other agricultural machinery
31	1	2	1	5	61	1	2	1	5	Bulldozers and other special machinery
31	1	2	1	6	61	1	2	1	6	Other vehicles
31	1	2	2		61	1	2	2		Other machinery (non-vehicles) and inventory
31	1	3			61	1	3			Other fixed assets
31	1	3	1		61	1	3	1		Cultivated assets (plants or animals)
31	1	3	2		61	1	3	2		Non-material fixed assets
31	1	3	2	1	61	1	3	2	1	Licenses
31	1	3	2	2	61	1	3	2	2	Other non-material fixed assets
31	2				61	2				Material stock
31	2	1			61	2	1			Strategic stock
31	2	2			61	2	2			Other material stock
31	2	2	1		61	2	2	1		Raw material and other materials
31	2	2	2		61	2	2	2		Unfinished production
31	2	2	3		61	2	2	3		Finished production
31	2	2	4		61	2	2	4		Commodities bought for further realisation

Asset operation code					Asset code					Description
31	3				61	3				Values
31	4				61	4				Non-produced (natural) resources
31	4	1			61	4	1			Land
31	4	2			61	4	2			Fossils/minerals
31	4	3			61	4	3			Other natural assets
31	4	3	1		61	4	3	1		License on radio frequency use
31	4	3	2		61	4	3	2		Other remaining natural assets
31	4	4			61	4	4			Non-produced (natural) non-material assets

Detailed classification explanations are listed below.

Methodological definitions of non-financial assets and operations associated with them

Non-financial assets (31)

The classification of non-financial assets and operations according to this classification is divided into 4 major groups, namely: fixed assets (311); material stock (312); values (313); non-produced assets (314).

Note: Acquisition includes all types of expenses related to the acquisition of assets such as: expenses incurred for transportation, appraisers' costs, costs for auctions and dealers, costs related to installation and dismantling of the asset, etc. In the event of selling the assets, the cost related to transfer of property is recorded in the article on "goods and services".

I. Fixed assets (311)

Fixed assets are produced assets that have been used multiple times or continuously for many years in the process of production or service delivery and the cost of which

amounts GEL 500 and more. Items that have a long life cycle but are not intended for multiple use can not be classified as fixed assets (such as coal used as a fuel).

Significant improvement of existing assets, which increases their production capacity, prolongs life cycle or both, represents a capital repair and is recorded as a fixed asset acquisition. Capital repair refers to the renewal, reconstruction and expansion of an asset that is analysed investment decision and it increases the operational characteristics of the asset, the capacity or prolongs the period of the pre-specified useful service life of an asset. In addition, current costs of the maintenance and repair of the fixed assets which does not affect their production capacity and life cycle, is recorded as "Goods and Services" (22).

Purchase of arms (e.g. missiles, shells) and technical equipment (such as rocket launchers, combat vessels, submarines, tanks, airplanes) as well as the purchase of armed vehicles by police and internal security services is considered as fixed assets. At the same time, the purchase of similar equipment by military agencies is recorded in the article on "goods and services" (22). It should also be noted that purchasing items that are useful for both military and civilian purposes (such as military aerodrome, harbour, hospitals, and office equipment) are considered as acquisition of fixed assets. In addition, funding of projects from foreign sources and grants within the framework of capital projects, which is used to create non-financial asset for project implementer, as well as the state (with the exception of non-financial assets purchased to be transferred to the agency on another governmental level) is recorded in non-financial assets.

Buildings-structures (3111)

This category includes the cost of buildings-structures, including newly constructed buildings/structures, as well as the costs associated with the cleaning and preparation of the surrounding territory for building process. As well as the cost of all equipment, installations and fittings that are an integral part of this building.

At the same time, buildings-structures include purchased/constructed buildings-structures intended for military personnel and/or military purposes, if they are similar to civilian buildings and can be used in a similar manner.

Residential buildings (31111)

The residential buildings are the buildings that are used entirely or mainly for residential purposes (including garage and other structures related to residential buildings). The same category includes sailing houses, barges, living vans and trailers that are mainly used as a dwelling place.

Non-residential buildings (31112)

Non-residential buildings include to all buildings, except residential buildings. The examples of such buildings united under this category are: office, administrative buildings, schools, hospitals, public entertainment buildings, warehouses, industrial buildings, shopping malls, hotels and restaurants.

Other buildings (311111)

Include all buildings not categorised under the 31111-311110 codes of this chapter

Machinery and Inventory (3112)

Note*: Machines that constitute an integral part of buildings and other facilities are included in the price of these buildings or facilities and are not included in the category of machinery.

Note**: Purchase of such small and long-term goods that are purchased regularly and stable amounts are not considered as fixed assets.

Transport vehicles (31121)

In this category, all kinds of traffic means is considered which is intended for transportation of people and goods. Specifically: the locomotives of railway, water, air and motor transport, including sports and special transport – electric/diesel locomotives, servicing and sailing boats, ships, trucks and fire trucks, motorcycles, bicycles , buses, airplanes, helicopters, etc.).

Other machinery and inventory (31122)

This category includes all types of machinery and equipment/installations and inventory except transport vehicles. This article includes - vehicles of general and special use; office, accounting and computer equipment; electrical equipment; radio, television and communication equipment; medical devices; optical tools; furniture; wrist and other types of watches; musical instruments and sports goods.

In addition, the article includes paintings, sculptures, costumes, other artworks and antiques, as well as various types of expensive collections and other inventory owned by state museums and other similar organisations for non-market services. If these items are not used or market or non-market services, they will be classified as values (313).

Other fixed assets (3113)

Cultivated assets (31131)

Cultivated assets include animals and plants that are used multiple times or continuously for more than a year to produce other goods and services, including service animals. Cultivated assets are only cultivated animals and plants under supervision, control and governance of state units. Other animals and plants are classified as non-produced assets or do not belong to economic assets at all. Animals included in this category are: breeding animals (including fish and poultry); milk producing animals; breed cattle; sheep or other animals used for wool production; as well as animals used for transportation and races.

Plants united in this category are: trees, vineyards and shrubs that are cultivated to produce fruit, hazelnuts, resin, timber etc.

Sale of cultivated assets considers the sale of animals and plants that includes the animals to be slaughtered or animals slaughtered by their owners and plants that were cut down before expiration of their life cycle.

In addition, if these plants and animals are single use, such as animals predetermined to be slaughtered and trees that are to be used a firewood, it is classified as material stock (312) and not as a fixed asset (311).

The withdrawal of cultivated assets does not include animal or plant losses caused by pollution, drought, famine or other natural disasters. Losses of animals and plants caused by the natural causes, as well as reduction of their value due to their age is considered by use of main capital.

Non-material fixed assets (31132)

Licenses (311321)

This category includes licenses for ten years and more, except for the license for using radio frequency spectrum (31431), which is considered as "other natural assets" (3143).

Other non-material fixed assets (311322)

This category includes objects of one type that are in production for more than one year and are used only by the subject having the ownership or license. This category includes:

Costs related to search of minerals, such as: pilot drilling costs, as well as testing, in particular, the costs of air reconnaissance or transportation;

Computer software. These include programs, their descriptions and supporting materials for both systematic and applied applications that are expected to be used for more than one year; this also includes development or procurement of large databases;

Various entertainment genres such as movies, sound recordings, manuscripts, radio and television programs, musical works, sports events, literary and art works, etc.

Even though scientific research, market research and other similar measures can generate economic benefits, the costs associated with them are treated as "other goods and services" (2210) and not as intangible fixed assets.

II. Material stock (312)

Material stocks include goods which are stored for further sale, use in the production process or future use.

Note: The withdrawal of material supplies is reflected when selling goods, use in production, and also transfer of material stocks into another category takes place.

Strategic stock (3121)

Strategic stock includes: goods stored for strategic purposes and special occasions; goods stored by market regulatory bodies; and goods that have special significance for the country (e.g. wheat and oil).

Other material stock (3122)

Raw materials and other materials (31221)

Raw materials and other materials include all natural resources and materials that are stored as a resource during production process.

Unfinished production (31222)

Unfinished production includes the products that are semi-finished or partially processed by the manufacturer and the production of which will be completed by the same manufacturer in the future, but usually they are not subject to sale, delivery or transfer to another party without further processing.

Finished production (31223)

The finished products include the goods that are the result of the production process, are still kept by its manufacturer and are not subject to further processing until delivery to other entities. State units may have finished products only when goods are produced for selling purposes or transfer to other units

Commodities bought for further realisation (31224)

This article covers the goods purchased for further sale or transfer to another unit, the significant physical shape changes of which are not carried out, because the goods at the moment of purchase are already in the form of finished products.

The holder of the goods purchased for further realisation can transport, store, categorise, sort or packet it in order to make it more attractive for the final customer. Any state unit may have the stock of goods intended for further realisation if it sells goods at economically significant rates. This category also includes goods purchased by the state unit for free of charge transfer or selling at economically low price.

III. Values (313)

Values are produced goods that have a significant value/price. They are acquired and stored primarily as a means of accumulation and are not primarily used for production or consumption. It is expected that their real value will increase over time, in the extreme case will not be reduced, and the quality will not deteriorate when stored in appropriate conditions.

Following are included in values:

- Precious stones and metals such as: diamonds, nonmonetary gold, platinum, silver etc. This is not intended as an interim resource for consumption in the manufacturing process;
- Paintings, sculptures and other things that are recognised as works of art or antiques;
- High value jewellery, collections and other values made from precious stones and metals.

The majority of assets owned by state units, which belong to the values, are classified as other machinery-equipment and inventory (31122). Since they are mostly exhibited in museums and are not included in the means of accumulation.

Note: Acquisition of values includes both the value of this asset as well as the cost of ownership transfer, and in case of withdrawal, the cost of the property shall not be reflected in the price of the property, which is recorded in the "Other Goods and Services" (2210).

IV. Non-produced assets (314)

Non-produced assets include naturally created assets, created through legal or accounting operations, which can be secured property protection. In other cases, this does not represent economic assets and is not considered as non-financial assets

Land (3141)

The land includes the soil, soil cover and surface water with its significant improvements, which can not be physically separated from the ground, except for the following objects:

- Buildings or structures constructed underground such as: roads, office buildings and tunnels;
- Cultivated vineyards, fruit gardens/orchards and other plantations , grain crops and animal breeding areas;

- Minerals
- Uncultivated biological resources;
- Underground water recourses.

Surface waters include: reservoirs, lakes, rivers, and other inland waters which can be secured by property ownership. This can later become the basis for carrying out transactions between the entities.

Significant improvement of land, which is physically impossible to separate from the ground, is included in the land value. Such improvement increases the quantitative and qualitative characteristics of the land, or its productivity, or prevents dererioration of its quality. An important improvement example is draining of the land area at the expense of the sea by the construction of dams; cutting down forest cover for the use of the land for entrepreneurial purposes; irrigation of dry lands with the construction of irrigation channels; drainage of bogs, construction of dams and other barriers to prevent flooding and erosion.

Minerals (3142)

The minerals include: proven reserves of oil, natural gas, coal (including anthracite, bitumen and black coal), metal ore (including black, colour and precious metals) and useful non-ore minerals (quarries, clay and sludge quarries, chemical substances and fertilisers, salt, quartz , plaster/gypsum, natural gemstones, bitumen, peat and other deposits). Mines, bore-wells and other equipment necessary to obtain useful minerals represent the fixed assets (311).

Other natural assets (3143)

License on Radio frequency use (31431)

The license for using radiofrequency spectrum includes the license to use frequencies for ten years and more.

Other remaining natural assets (31432)

This category includes uncultivated biological resources, water resources and electromagnetic spectrum.

Uncultivated biological resources include animals and plants on which property rights may be established and protected, but their natural growth and/or renewal (regeneration) are not under any direct control, responsibility and management of any state unit. For example: untouched forests and fish reserves that can be commercially exploited. This category covers only those resources which have the economic value and are not included in the value of land related to it.

Water resources include the resources of ground and other underground water resources that are quite deficient in order to justify ownership rights and /or their use. Such resources are used for economic purposes or can be used in the near future. They also have an economic value that is not included land value.

The electromagnetic spectrum consists of radio frequencies, which is used for transmission of sound, data and TV signals.

Non-produced (natural) non-material assets (3144)

Non-produced intangible assets include products intended for public arrangement/use based on legal or accounting activities. Some of such assets allow their owner to carry out specific activities or produce specific goods or services and at the same time forbidding for other entities from carrying out similar activities without the owner's permission. Non-produced intangible assets include patent facilities, lease contracts and other contracts, as well as purchased goodwill.

Patents provide protection of inventions with legal or judicial decisions. Examples of protective inventions are: composites, processes, electronic and electrical schemes, devices, pharmaceutical compounds and new types of artificially created living organisms.

Lease agreements and other contracts that are classified as economic assets include lease agreements on land and buildings/structures; exclusive rights of the use of electromagnetic spectrum or utilisation of minerals; contracts with sportsmen and authors; also, the rights of purchase for material assets which are yet not produced.

Purchased goodwill is the difference between the cost paid for the operating enterprise and the value of its assets, minus obligations. Goodwill costs include long-term economic benefits, which are not identified as separate assets.

ANNEX B – Examples of Asset Related data Fields.

Though comprehensive this is not a definitive list.

The fields can be used either individual or in combination to categorise the assets.

	Field name	Example	Source
01	Asset ID	Numeric. Sequential from Asset Register Book. May have asset subunits recorded if assets are geographically grouped – say village water project. Then primary Asset Number. Sub number. X.yy	This comes from the asset Register Book.
02	Basic Asset Type	Movable/Immovable	
03	Date Asset taken on book	DD/MM/YY	Extract from NAPR/other documentation inc. transfer decree
04	Asset Description text		Visual Inspection, engineering drawings etc.
05	Asset Description		?
06	Asset Location		Address

	Field name	Example	Source
05	Asset GPS coordinates	GPS indicated reference	NAPR Data/Inspection with GPS[106]
08	Cadastre Map Reference	ID Reference as on Cadastre System Will not exist if not registered.	NAPR web site[107] [108] Links into 09/10/11/12/13 below
09	Location 01 details	Municipality	For existing NAPR property, this is available from website. For new assets, it will have to come inspection and other official documents.
10	Location 02 details	District	For existing NAPR property, this is available from website. For new assets, it will have to come inspection & other official documents.
11	Location 03 details	Sub District	For existing NAPR property, this is available from website. For new assets, it will & and other official documents.
12	Location 04 details	Street etc.	For existing NAPR property, this is available from website. For new assets, it will have to come inspection and other official documents.

[106] Some Municipalities use this information to develop maps displaying their Assets – this is usually done on Googlemaps and is very useful and to be commended. It will be looked at in detail in a later chapter of this guidebook. This is highly recommended.
[107] www.napr.gov.ge.
[108] See ANNEX G regarding the National Agency of Public Registry and related legislation

	Field name	Example	Source
13	Unique location/Building ID Number		For existing NAPR property, this is available from website. For new assets, it will have to come inspection and other official documents – house number etc.
14	Land Classification	Agricultural/Non Agricultural	For existing NAPR property, this is available from website. For new assets, it will have to come inspection and other official documents.
15	Land Area	Area in hectares – 2 decimal point	For existing NAPR property, this is available from NAPR website. For new locations, it will have to come from maps, drawings etc. Or on site measurement.
16	In case of Agricultural Land particular function of land		For existing NAPR property, this is available from website. For new assets, it will have to come inspection and other official documents.
17	In case of Agricultural Land ameliorated		Inspection/information from Ministry of Agriculture
18	Floor area	Area in Square Metres – 2 decimal point	For existing NAPR property, this is available from the site. For new locations, it will have to come from maps, drawings etc. Or on site measurement.
19	Number of floors	How many floors	For existing NAPR property, this is available from NAPR website. For new locations, it will have to come

	Field name	Example	Source
			from maps, drawings etc. Or on-site Inspection.
20	infrastructure		Inspection/maps from Architect Department
21	servitude(s) if any		For existing NAPR property, this is available from NAPR website. For new locations, it will have to disk and on site research.
22	access description		Inspection, maps and site drawings
23	fixture(s)		Physical inspection, engineers, architects drawings.
24	normative value		Data from Municipality Annual Decree, supporting documentation if any.
25	book value	.	Municipal Accounts Department - calculations
26	Date value reviewed	DD/MM/YY	From last review documentation.
27	market value if applicable		Research by relevant specialist.
28	Date value reviewed	DD/MM/YY	This would be the date taken from the valuations study or research.
29	comparable(s) sale information		Research by relevant specialist.
30	comparable(s) rent information		For existing NAPR property, this is available from NAPR website. For new locations, it will have to disk and on site research.
31	current use	What is the asset currently being used for.	On-site inspections, municipality records and any relevant licences

	Field name	Example	Source
32	Suitable for? Use	What could the asset be used for e.g.	Inspection/ Assumptions of specialist
33	building permission opportunities according municipal regulation:	This is Yes/No – if Yes then use details field	Department of Architecture
34	details		Department of Architecture
35	Spatial plan regulation(s) if applicable	This is Yes/No – if Yes then use details field	Department of Architecture/Department of Spatial planning
36	Details		Department of Architecture/Department of Spatial planning
37	Any special regulations or restrictions	This is Yes/No – if Yes then use details field	Department of Architecture/Department of Spatial planning
38	Details		Department of Architecture/Department of Spatial planning
39	Any private commercial interest	This is Yes/No – if Yes then use details field	Chancellery of Municipal administration
40	Details		Offers from application
41	natural resources in neighbourhood	This is Yes/No – if Yes then use details field	Inspection/local information
42	Details		Inspection/local information
43	Road Access	This is Yes/No – if Yes then use details field	Inspection/maps from NAPR/Google maps
44	Details		

	Field name	Example	Source
45	Rail Access	This is Yes/No – if Yes then use details field	Inspection/maps from NAPR/Google maps
46	Details		Inspection/local information
47	Water Access	This is Yes/No – if Yes then use details field	Inspection/maps from NAPR/Google maps
48	Details		Inspection/local information
49	Need for rehabilitation	This is Yes/No – if Yes then use details field	Inspection/other documentation if any.
50	details		Engineers assessment report
51	Level of Rehabilitation needed	Grading 1- 5	Inspection/other documentation if any
52	Urgency of Rehabilitation	Grading 1 -5	Engineer's assessment Report.Municipality usage plans
53	Date of last review	DD/MM/YY	Review documents
54	Planned time for rehabilitation	Free text	Engineering or other plans and estimates
55	Date of last review	DD/MM/YY	Taken from last Engineer inspection report,
56	Available for disposal	This is Yes/No – if Yes then use details field	Municipal Decision
57	Details		
58	Date of last review	DD/MM/YY	Date on last review document
59	Department/Organisation responsible for the asset	Department/Unit / Municipality Owned company etc.	Municipality documents

	Field name	Example	Source
60	Person/Office to be contacted for further details	Name & Contact details for further information	Local Information
61	Additional Documents available	Maps drawings/tender docs etc.	
62	Linkages with other assets	Is there any connection with other assets -	Inspection/other Documents
63	Asset Ownership Status	Government/Municipality/Private	NAPR/other Documents
64	Date Change of Asset Status	DD/MM/YY	Date on change Authorising document
65	Asset Accounting Code	Based on existing financial accounting codes	This code can be tagged onto the existing accounting codes and thus would have a minimal disruptive effect on existing operations. Some additional work would need to be done by the Ministry in order to be able to extract the useful data. This approach is not in conflict with existing Ministry of Finance accounting for assets or their classification of assets. This will eliminate many of the potential barriers to the add on code.
66	Transfer Conditions	Any use or disposal conditions tied to the asset	When transferred from central government are there any conditions restricting use or disposal. Admin only, Kindergarten only etc.

ANNEX C – Procedures related to the Acquisition of Asset from Central Government.

As mentioned in the body of the text above this issue is complicated and very procedural. Consequently the Authors have included but a small sample of the documentation related to the process here. A much more comprehensive Annex is included under Annex C of the Georgian version of this

This extract is included here to give some detail on the subject.

When looking at the transfer of assets TO municipalities the following have to be considered :

- **General Provisions of the Civil Code of Georgia**

On registration of data by the public registry about the rights on an asset and non-material goods, sequestration and tax lien/mortgage, changes and termination, as well as waiver of ownership and pursuant changes.

- **Law of Georgia on Public Registry, Instruction on Public Registry**

On following registration process in the public registry: registries regarding the rights on immovable property ownership, public-legal restrictions, tax lien/mortgage, ownership of movable property and non-material goods, entrepreneurs and non-entrepreneurial (non-commercial) legal entities, addressing and economic activities. Annex C1 – extract covers property description, identifies the owner, gives references to documentation proving ownership, provides details on use and restrictions on use, liabilities, mortgage and public-legal limitations/data on registry of debtors.

- **Organic Law of Georgia - Local Self-Government Code**

Overview of issues related to registration of municipal property in the National Agency of Public Registry (NAPR). Review of legislative acts obligatory for registration of the municipal property (in NAPR), which was given to the municipality based on this law. Annex C2 – documentation for registration of municipal property: 1) Order on registration of municipal property by the city hall; 2) dimensional drawing (soft and hard copies).

- **Registration of property transferred into the municipal ownership by the state**

Issues related to registration of property (in NAPRP) transferred to the municipality by the state.
Annex C3- documentation for registration of municipal property: 1) request of the municipality regarding registration of property rights; 2). Order issued by the National Agency of State Property (NASP) regarding transfer of ownership; 3) dimensional drawing (soft and hard copies).

- **Special rule on systemic and sporadic registration of land plot ownership rights within the framework of state projects and improvement of cadastral data.**

Overview of the issues related to the registration (in Public Registry National Agency) of the decisions made by the committee of the self-government representative body about recognition of ownership rights of arbitrarily occupied land.

Review of the issues related to identification of the land plot by the representative of the municipality and registration in the National Agency of Public Registry.

Annex C4 – documentation stored in the registry is fully sent to the Property Rights Recognition Committee and city hall of the municipality (these will be discussed during seminars). For the registration purposes the NAPR received the decision (Ownership certificate) of Property Rights Recognition Committee.

- **Resolution №233 of the Government of Georgia, dated 24 October 2007, on the non-agricultural land owned by the self-governing unit**

Registration of non-agricultural land ownership rights in the registry of immovable assets is carried out according to the documentation established by legislation that proves the rights, cadastral data and consent of the agency.
Annex C5 - documentation for registration of municipal property: 1) Order of municipal city hall on registration of the property in the municipal ownership; 2) the letter (consent) of National Agency of State Property (NASP) on registration; 3) dimensional drawing (soft and hard copies).

ANNEX C1

Ministry of Justice of Georgia
LEPL – National Agency of Public Registry

Barcode:

Extract from the registry of rights on immovable property

Application registration number, date:
Preparation date:

Land/immovable property

Cadastral code				Land plot ownership type:
Zone	Sector	Settelemnt	land plot	Targeted use of land:
XX	XX	XX	XX	Land plot category:

Verified area:

Previous number of land plot:

Buildings/structures:

Address:

Additional information:

Document:

Owner

Application registration number, date:

Date of registration of rights:

Document confirming right:

Owner/owners:

Name, surname, ID (in case of physical entity)

Company name, identification number (in case of legal entity)

Use/limited use

Application registration number, date:

Date of registration of rights:

Document confirming right:

Entities:

Name, surname, ID (in case of physical entity)

Company name, identification number (in case of legal entity)

Subject:

Term::

Additional information:

Mortgage

Application registration number, date:

Date of registration of rights:

Document confirming right:

Entities:

Name, surname, ID (in case of physical entity)

Company name, identification number (in case of legal entity)

Subject:

Additional information:

Liability

Application registration number, date:

Date of registration of rights:

Document confirming right:

Entities:

Name, surname, ID (in case of physical entity)

Company name, identification number (in case of legal entity)

Subject:

Additional information:

Public legal restriction/ debtor registry

1) Tax lien/mortgage

   Application registration number, date:

   Entity

   Name, surname, ID (in case of physical entity)

   Company name, identification number (in case of legal entity)

   Subject:

   Basis:

2) Seizure / prohibition

   Application registration number, date:

   Entity

   Name, surname, ID (in case of physical entity)

   Company name, identification number (in case of legal entity)

   Subject:

   Basis:

3) Registry of debtors

   Application registration number, date:

   Entity

   Name, surname, ID (in case of physical entity)

Company name, identification number (in case of legal entity)

Subject:

Basis:

- The authenticity of the document can be verified on the official web page of NAPR www.napr.gov.ge;
- Extract can be obtained on the website www. napr.gov.ge, in any territorial service, in the houses of justice and from the authorised persons of the Agency;
- In case of technical errors in the extract, please contact us at: 2 405405 or fill the application form on the website;
- Consultation can be obtained through the hot line of the House of Justice: 2 405405;
- In case of unlawful actions by Public Registry staff, please contact us on the hot line:08 009 009 09;
- Write to us via e-mail regarding any topic of your interest: info@napr.gov.ge.

Order №151 of the Minister of Justice of Georgia, dated 1st of August, 2016 - website, 01.08.2010.

ANNEX C2

City Hall of _____ Municipality

N Date: dd/mm/yyyy

Order

On registration of seven units of 25 m^3 agricultural land plots (located in the villages of _____ municipality) in the ownership of _____ municipality:

According to the articles 106 and 107 of the organic law of Georgia – local self-government code and Instruction on Public Registry, the city hall of _____municipality is entitled to register immovable property (land plots), which it uses.

Therefore, in accordance with the articles 106 and 107 of the organic law of Georgia – local self-government code and article 8 of Instruction on Public Registry

I order

1. To address NAPR in order to register the land plots located in … (for the purposes of constructing electric transmission poles) in the ownership of _____ municipality.
2. _____ municipality City Hall shall ensure implementation of all necessary activities for the enforcement of the order and designate the responsible entity according to the rule set forth by the legislation.
3. The order shall be published on the information board of the city hall according to the rule determined by administrative code and shall become effective upon publication.
4. The order may be appealed according to the rule foreseen by the legislation, within 1 month after publication (address of the municipality).

Mayor of _____ municipality

ANNEX C3

National Agency of State Property (NASP)

ORDER

Date:
dd/mm/yyyy

On transferring state owned immovable Property to _____ Municipality.

In accordance with the article 113 of the organic law of Georgia - local Self-government Code, resolution N 391, dated Sep 12th, 2012, on approval of the statute of NASP by the government of Georgia, and based on the Memo of _____

I order

1. To transfer the property (property data) to _____ municipality.
2. The order hereinafter may be appealed in the Ministry of Economy and Sustainable Development of Georgia (address) within 1 month after its issuance and later in the court.
3. The order becomes effective upon signature.

Acting Deputy Head of National Agency of State Property.

ANNEX C4

Ownership Certificate N

Committee on recognizing ownership rights of arbitrarily occupied land plots in _____ municipality

Given to: Name/Surname and ID number:

Confirming that this person was given the land in co-ownership:

Agricultural land

_____ Land plot area _____ m^3_____ located in:

_____

Certificates is issued in 2 copies; 1 copy is provided to the owner, the second is stored in the issuing body. The certificate is valid together with the cadastral dimensional drawing, which represents the integral part of this certificate.

Issued on: date

Signature of authorised person_____

ANNEX C5

Annex №

Sample form for site inspection of the immovable property (within the framework of state project) by the municipal representative

Site inspection of the immovable property within the framework of state project

Form №_____

Name/surname of authorised municipal representative:

_____

Position of authorised municipal representative:

_____

_____

Owner/user of immovable property:

_____; ID

№_____

/name, surname/

Address of immovable property:

_____

_____

Cadastral code of the immovable property (if any) _____

Document(with its references) proving property rights:

_____

_____

_____

_____

Information on owners of bordering land plots (if any):

_____; ID

№_____

/Name and Surname/

_____; ID

№_____

/Name and Surname/

_____; ID №_____

/Name and Surname/

Inspection date and time: Year 20___ ___ _____; Hour _____

Parties/experts/specialists participating in the inspection process:

_____; ID №_____

/Name and Surname/

_____; ID №_____

/Name and Surname/

_____; ID №_____

/Name and Surname/

Opinions/comments of the entities participating in the inspection process (if any):

_____

_____

_____

_____

_____

_____

Outcomes of inspection/study:

_____

_____

_____

_____

_____

_____

Annex: cadastral dimensional drawing _____ pages.

Signatures of the entities participating in the inspection

_____

_____

_____

Signature of municipality's authorised person

_____

Note:

1. Form number has 5 digits and is numbered in consecutive manner (e.g.: 00001 etc.).
2. Form numeration is done by all authorised entities independently.
3. Address is indicated as follows: 1. Municipality; 2. Settlement, 3. Name of the area within the settlement as known by the local residents or/and which is reflected on topographical map (if any) or other identifying address indicating location of the land plot (immovable property);

ANNEX D – Procedures related to the disposal of an asset.

Once a decision has been taken within the municipality and approved by either Council or Mayor, the procedure for disposal of the relevant asset goes into its final stages. All asset disposals should be included in the Annual Asset Management Plan.

The decision to dispose of the type and size of asset that this Guidebook is dealing with, does not happen spontaneously. The asset has to be identified as being suitable for disposal and that's its disposal is beneficial to the Municipality, in some cases there may even be an informal Cost Benefit Analysis carried out.

Assets are disposed of in either of two ways – either to the public through privatisation (which is what is covered in this annex) or through assigning the asset ownership to central government.

When disposing of assets to the public through privatisation this is done through electronic auction (see www.eauction.ge**)** or public auction. The purpose being to have transparency in the action. This is clearly specified in law.[109]

With the decision to privatise the municipality is obliged to carry out various administrative procedures.

These include: identification of the property – mapping, coordinates, and deeds of previous ownership etc.
– This should be carried out prior to the decision being made.
Registration of the property in owner's name,
Entering and acceptance on privatisation list – this has to be done within 10 days of approval.
The preparation and production of the formal decision to proceed with the privatisation.
The establishment of the assets valuation – including all and any

[109] Organic Law of Georgia Local Self Government Code and Decree 669 of the Government of Georgia

reports and analysis.

To ensure citizen participation in the exercise of local self-government, municipal bodies shall be obliged to take measures to inform the population of the municipality of their activities and on the possibility of citizens to participate in the exercise of local self-government. This particularly applies in the area of privatization – both at the planning stage and in the actual implementation.

Accounting, reporting and audit

As part of the policy of transparency and in order to separate audit and valuation professions, the Government of Georgia shall elaborate legislative act before 31st of December 2017.

Prior to its enactment:

a) Legal Entity of Public Law- National Accreditation Centre under the Ministry of Economy and Sustainable Development of Georgia – shall carry out monitoring and accreditation of valuators certification body in accordance with the rules and procedures adopted by the Accreditation Centre.

b) Accredited certification bodies that are members of the International Valuation Standards Council (IVSC) shall ensure availability of the Georgian versions of the international standards of assessment;

c) Only the entity that has employed a valuator certified by the accredited certification authority shall be entitled to provide valuation services. The right to conduct the valuation and to sign the report/conclusion of the assessment shall be given to the valuator certified by the accredited certification body;

d) The Certification Authority accredited by the Accreditation Centre shall ensure further education of the valuators, compliance of their activities with ethical norms and monitoring of their performance in accordance with certification scheme.

ANNEX E – Sample Asset Management Policy.

A policy is a set of ideas or a plan of what to do in particular situations that has been agreed officially by a group of people – in this case a Municipality.

It is a guide for the way the Municipality carries out its operations. There can be policies regarding Finance, Human Resources, even document retention.

The municipality's view on asset disposal through privatisation and other issues relating to asset generating revenue should be reflected here.

Policies should be reviewed and updated regularly.

The Municipality of ???INSERT NAME HERE??? ,
at a Council Meeting held on DD/MM/YY

Hereby declares the following as the policy to be followed in relation to Infrastructure Asset Management.

The Municipality is committed to making the best use of its budgets, and advocates a proactive asset management approach in order to help deliver the best long term services to its people. This approach will also take into account current and projected financial pressures and will explain how available funds and resources should be utilised to maximise their benefit.

01 All infrastructure assets will be recorded in the Municipality's Asset Management Database. The data entered into this application will be supported by hardcopy references and supporting documentation in order to ensure sustainability of the records and transparency. This will include all Assets owned/operated by Municipality Daughter companies.
These records will be available for review by the public via clear procedures.

02 All costs incurred in the acquisition/maintenance/operation/disposal of each asset will be accounted for against the specific assets. Thus allowing for the cost of each specific asset to be determined. Those operating/maintaining assets are to ensure that those tasked by the Municipality with Asset Management, are supplied with all relevant and required information in a regular and timely manner. They in turn undertake to report in a programmed schedule to the Mayor all issues of concern relating to the use and status of the relevant assets.

03 The Municipality undertakes to maintain and manage infrastructure assets at (Council) defined levels These need to be clearly defined in writing and disseminated. Key Performance Indicators (KPIs) will be developed as a way of measuring asset levels of performance. These assets are to be kept in a safe to use condition and in such a manner as to ensure their long-term sustainability. All and any renovation of assets is to be carried out bearing in the mind the existing architectural style of the asset and it surroundings. These KPIs and resulting attainment of targets data will be routinely available to the public. The KPIs will be periodically reviewed for relevance.

04 Assets physically suitable for privatisation are to be identified and a cost benefit analysis carried out with regards to their current contribution to Municipality operations. Where determined to be economically prudent selected assets will be made available for privatisation. Assets suitable for income generating through rent or leasing are to be dealt with in a similar manner.

05 The Municipals assets must only be used in accordance with Georgian Law and Municipality guidelines and procedures in the furtherance of the objectives of the Municipality's plans and objectives. All practices and procedures have to be clearly known and understood and transparent in their application.

06 The various communities and interest groups within the Municipal boundaries are to be involved in a consultative capacity in order to best

support the people and to ensure that assets are used for local community and economy betterment and development. This will build strong civic spirit and also improve the acceptance of what decisions are made.

07 Assets are to be used in a manner that is ecologically beneficial (if at all possible) and not detrimental to their long-term sustainability.

08 Asset Management will be overseen by specific designated people who will have clear responsibility and relevant authority to ensure that these policies are adhered to. These people will be properly training in and routinely updated on the developments in the discipline and on relevant international best practices and Georgian laws and regulations.

09 No Action Plans or Capital Investment Plans will be proceeded with without the inclusion of a relevant asset management component.

ANNEX F – Sample Asset Management Key Performance Indicators (KPIs).

KPIs are a tool or set of tools by which an organisation can measure progress. They can be simply to record activity or target achieved. They are a means of quantifying a result that would otherwise be vague – the train is late, that is vague – the train is 5 minutes late is not vague.

KPIs can simply be recording an activity – 5 houses built or can be used to compare activity with a target baseline – target 10 houses, achieved 5 therefore 5 remaining. They can be used for comparison with other KPIs – continuing with the house example.

Target 10 houses
Budget 10 million
Time line 10 months
Reality - 5 Complete, 8 million spent and 9 months passed

Maybe another element has to be measured – houses completed, houses near completed, houses in early stage.
5 Complete, 5 near completed - result more or less ok
5 Complete, 2 near completed, 3 in early stage – result indicates possible problems – 90% of time gone, 80% money spent and 30% in early stage activity??

KPIs can be used to compare actual with target – this includes financial data,
It can be used to compare activities in different time periods, they can be used to compare activities between departments or organisations.

The targets used should include those set in the Municipality Action plan, more could be included for internal control as well.

Excel is ideal for setting up and monitoring KPIs – it can be used not only for recording the data but for generating graphs.

When presenting KPIs the use of not only graphs but also such as Googlemaps greatly improves the delivery of the data.

Below are an example of KPIs that will be useful but please note that the list of potential KPIs can be extremely long.

The following are just a few examples:

Ref	Activity	Target	Attained	Notes
01	New Road/Storm drain/water pipe etc.	Usually set in KM	Could be separated into completed/almost complete/initial stages	There has to be set criteria to measure the yet to be completed work
02	Expenditure on the above	GEL	This can be complicated by cash based V accrual accounting and when is a cost actually recorded and recognised.	This can be compared with 01 above . The timeline for activity can also be incorporated here.
03	Properties available for privatisation	Number of units	Immediately available/need renovation/rehabilitation	This can be for specified time period and/or cumulative.
04	Properties to be valued	Number of units	Number completed/in process	This can be for specified time period

Ref	Activity	Target	Attained	Notes
				and/or cumulative.
05	Properties to be privatised	Number of units	Number completed/in process	This can be for specified time period and/or cumulative.
06	Linear Asset Rehabilitation – as 01 above	Usually set in KM	Could be separated into completed/almost complete/initial stages	There has to be set criteria to measure the yet to be completed work
07	Building rehabilitation – as 06 but dealing with nonlinear assets	Usually set in Units but may be more specific for example number of Kindergartens. Even Bridges, Culverts etc.	Could be separated into completed/almost complete/initial stages	There has to be set criteria to measure the yet to be completed work
08	Capital Investment Projects	Number of Projects	Could be separated into completed/almost complete/initial stages	There has to be set criteria to measure the yet to be completed work
09	Connections to Water related services	Number of villages/houses/individuals connected	Could be separated into completed/almost complete/initial stages	There has to be set criteria to measure the

Ref	Activity	Target	Attained	Notes
		to water related services		yet to be completed work
10	Expenditure on the above	GEL	This can be complicated by cash based V accrual accounting and when is a cost actually recorded and recognised.	This can be compared with 09 above. The timeline for activity can also be incorporated here.
Some others				
11	Number of properties that have their paperwork completed	By unit		All documentation sorted and ownership confirmed.
12	Number of asset related complaints registered and resolved.	Broken down by type and status of each type		
13	Number of kindergarten places available	By number of children		

Ref	Activity	Target	Attained	Notes
14	Numbers of properties available for rent – even potential income	Number of units -	Number rented and value of income	
Other miscellaneous examples				
15	Public lighting	units	Number install/rehabilitated/replaced	
16	Pot holes	units	Number identified/fixed	
17	Trees planted	Units or area	Literally how many planted	

As you can see form the sample above – if a number can be used to measure an activity then it has potential as a KPI.

Some examples above include a GEL element – some don't, simple to eliminate the obvious.

Ask management – Mayor and/or council what they would like to have progress measured in and if a number can be assigned use that as a KPI.

ANNEX G – The National Agency of Public Registry.

As stated in the body of this Guidebook The NAPR does not include all the assets that this Guidebook, it covers all buildings and properties but not the machinery and equipment that may be situated within.

Registering with NAPR is **required** for the relevant assets but is **essential** for those assets being considered for privatisation.

The process of registering requires a lot of supporting documentation (varies considerably depending on the specific nature of the asset – buildings, land etc.).

The issues that will be looked at include the rights on immovable property ownership, public-legal restrictions, tax lien/mortgage, ownership of movable property and non-material goods, entrepreneurs and non-entrepreneurial (non-commercial) legal entities, addressing and economic activities.

Given the complexity of the paperwork, the registration of asset on NAPR is best left to people experienced in the process.

The website for NAPR is napr.gov.ge. This contains all relevant details regarding procedures and legal requirements.

ANNEX H – Approach of Revenue Capitalisation.

Introduction

With the capitalisation approach, it is fundamental to determine expected revenues, risks and possible changes because this approach implies determination of the current value of the future revenues.

Definition of Important Terms

Potential gross/total income (PGI)

To determine PGI, other incomes (that are generated by owning this property) are added to the calculated gross income.

The figure of PGI is the foundation upon which the revenue method is based on, therefore determination of PGI requires special accuracy.

Gross income

The appraiser starts describing the data “reconstructed” by revenues and costs by calculating gross/total revenues, which may be gained by operation of immovable property during one year, given that at the time of the appraisal property was vacant and available to be leased out.

To calculate the PGI it is necessary to study the lease market segment to which the subject property belongs to. It is important to compare immovable property with other corresponding analogues that are leased and enter the changes in the rent figures considering identified differences.

Market lease price is calculated by studying lease prices of the comparable properties on the market. Making changes based on the differences among the prices of rented (to be rented) spaces and comparable spaces is carried out according to the methodology described in method of comparable sales.

In those cases when it is impossible to confirm corrected figure by market prices, the appraiser is left with only one option – using a highly technical model – best left to the external expert.

The entering of changes in lease price without market data introduces a low level of confidence in the output of the revenue method.

During appraisal, it is possible to use the figures of lease currently paid by the lessees, but, as a rule, these figures do NOT correspond with the market lease price at the time of the appraisal. In addition, it should be considered that the owner or manager (lessor) of the leased property may NOT have specific experience in this field, therefore contractual and market lease prices may be different.

Calculation of total revenues implies revenue generated by leasing immovable property by 100%, i.e. total revenue = total space to be rented out (m^2) X 1 m^2 of the market lease price.

Other Revenues

Aside from the revenues that are generated by leasing space of the building under appraisal, the revenues may also be determined by other means, such as:

- revenues from using/renting washing machines, laundry and drying equipment,
- revenues from trade machines,
- revenues from renting garages and parking spaces,
- revenues from placing advertisement/promo signboards,
- revenues from placing stationary TV aerials.

In addition, you must consider the fact that other revenues should NOT include the revenues that are associated with the entrepreneurial/business activities of the owner.

Effective Gross Income (EGI)

The EGI is calculated by subtracting the figures of uncollected monetary funds and vacancies from PGI.

Losses from non-leased parts of the property (vacancies) and uncollected lease sum (losses)

Regardless of how reliable the lessee is, there is always the possibility that the rent will NOT be fully recovered/collected within the forecasted period of ownership.

Despite the fact that the calculation of lease market price is based on the assumption that immovable property is vacant and available for leasing out, it would be incorrect to imagine that the lessee will not pose any problems with respect to payments or shall stay a lessee for the whole forecasted period.

There are NO standard procedures regarding calculation of uncollected rent and vacancies; the best way to get these figures is to review similar comparable facilities that have available data for long period of time regarding collection of rent and rental vacancies.

Cost Analysis

The costs of operating/maintaining immovable property (in order for it to function and generate income) are divided into 3 groups: fixed costs, operating costs and reserves. These notions also belong to the special terms of the appraisal, which are used to classify the costs in the “reconstructed” reports. Before using the data, collected from various sources, it is necessary to correct them.

Fixed Costs

Fixed costs do NOT depend on number of the vacancies and includes property and land taxes, as well as obligatory types of insurances.

Operating costs

These are periodic, annual costs, the amount of which depends on the number/size of rented spaces.

These costs are also referred as changeable/mutable costs which include:

Administrative Costs,

Costs of utility services,

Costs for waste disposal,

Salaries,

Maintenance costs,

Service fees,

- Firefighting,;
- Elevator,;
- Internal communications and extension line/telephone,
- Landscaping and lawns,

Pool maintenance costs,

Office cleaning costs,

Snow cleaning costs,

Disinfection costs,

Representational expenses,

Bank fees,

Fees for legal service,

Advertising costs,

Costs for cars/vehicles,

Other costs.

All real estate/immovable property may NOT have all such costs, but there may also be expenditures which are NOT included in the list above.

It should be mentioned that costs calculated during appraisal do NOT represent the actual expenditures of the owner; instead they are forecasted costs for the next year, given the assumption that the year will be typical.

Example: Fuel Costs for the forecasted period (1 year)

The appraiser looka at the data relating to what the owner of the immovable property was spending on the fuel for the last 5 years:

Last year	3200
Year before the last year	3330
Two year ago	3100

Four years ago	3100
Five year ago	3300

The forecast of the appraiser is as follows: fuel cost for the typical year is GEL 3200, and the fuel price for the next year does NOT exceed 1.3/1 per litre. Therefore, forecasted fuel costs amount (3200X1.3) 4160.

Reserves

Some costs are very changeable from year to year, while some may change once or twice during several years. It is necessary to determine which part of the reconstructed report should include such types of costs, e.g. repair of water supply system may be included in the maintenance field, i.e. operating costs. Repair and maintenance costs are typically NOT included in the maintenance costs, but as a rule, they are included in the reserves.

The use of the reserves must be explained in detail in the appraisal report, because the word reserve implies that money is put aside (reserved).

Example: typical operating period of the fridge is 5 years, while new fridge costs 1200, thus it is possible to determine annual reserves that amounts 240 (1200/240).
The elements which are traditionally included in the reserve field are:

Kitchen equipment,
Furniture,
Carpets,
AC system;
Washing machine,
Tableware and crockery,
Non-permanent components of the building,
Pool systems.

The most common mistake that the appraisers make is that they include same elements in maintenance costs and also in the reserves, or vice versa, they exclude these elements from both groups.

Other, non-reflected costs

Some costs, which are used for the taxation purposes, are NOT included in the reconstructed operating report; this is due to the fact that they are reflected in the capitalisation rate (including them as costs of reserves will cause "double reflection"/overlapping), or they are NOT considered as costs that are directly linked with the operation/maintenance of the property. The following belongs to this group:

Mortgage loan/credit %,

Amortisation of the main loan of the mortgage credit,

Insurance of the mortgage loan,

Profit tax.

Methods for determining rates and coefficients

Calculating capitalisation rate

There are several ways to determine capitalisation coefficient. We will discuss several of them in this chapter:

Market method,

Cumulative arrangement method,

Method of linked investments and investment groups.

Market Method

The simplest and best way for determination of capitalisation rate is to define this rate through the collected market data. If main formula transforms Net Operating Income NOI into market value, then following will transform value into capitalisation rate:

Capitalisation coefficient = NOI / Price of the Property,

Capitalisation coefficient determined in this way is called total rate.

When calculating total capitalisation rate the important precondition is to have the data on the sale of the comparable facilities, that are similar to the subject property and the elements of comparison are NOT substantially different from one another.

Example: The subject property the NOI of which was established by the appraiser as 36 000. There is data on 3 comparable sales and their NOI which is:

Indicators	Comparable sale #1	Comparable sale #2	Comparable sale #3
NOI	32 000	38 000	30 000
Selling price	125 000	175 000	150 000
Capitalisation coefficient	0,26	0.22	0.20

The appraiser established Capitalisation coefficient of 0.22, because N2 facility is the closest according to data and characteristics of the subject property.

It is common practice that that other assessments can be used as the basis for determining capitalisation rate, during which the dates of the assessment and data on sales are taken from the recent period.

When there is information regarding sold immovable property it is essential to reconstruct the data of its revenues/costs in a way as if the appraisal takes place at the current date, otherwise the capitalisation rate, which is calculated based on the available data, will be incorrect.

Cumulative arrangement method

During appraisal of the immovable property the capitalisation rate consists of two elements:

Rate of the revenue on the investment (rate of revenue on the capital) represents compensation, which an investor must receive for the monetary value, considering time, risk and other factors, that are associated with specific investment,

Norm of return on capital. Return on capital implies coverage of the sum for the first cash contribution/down payment. In addition, this element of capitalisation rate is used only for the property, which undergoes changes in value/price.

Rate of return on investment

Rate of return on investment contains the following:

- Risk-free rate of return/income,

- Risk Premium,
  - Risk of investing in immovable property,
  - Premium for low liquidity of immovable property,
  - Premium for investment management.

Risk-free rate of return

This rate is used as a market rate on which the listed components are added. To determine risk-free rate on return we can use the risk-free operations' data of local as well as developed markets (USA, Germany, and Japan).

According to the methodology of the countries with developed markets, the risk-free rate is considered as long-term (20 years) rate of the revenues on global market for governmental obligations. When using such risk-free rate we must add investment risk for the country (country risk).

As a rule, country risk is calculated by rating agencies, but this information is commonly unavailable for the appraisers, in such case the appraiser determines the rate of the country risk by expert methods according to established practices, but it must be mentioned that in cases like these the risk of the subjective approach/bias increases substantially.

Countries with developed markets have various methods for calculating country risk, e.g. in Russia the data is taken based on the rate of return on state obligations, which represents better figure than currency deposit rates of the highest category banks. Risk-free rate determines the minimal compensation for investing in a specific facility.

Risk Premium

Risk premium consists of the following components:

- Risk of investing in the immovable property,
- Premium on low liquidity of the immovable property,
- Premium on investment management.

Risk of investing in the immovable property

In given cases, incidental losses of consumer prices of the facility is considered and risk can be determined according to the insurance rates of the highest category insurance companies.

Premium on low liquidity

Such type of premium is calculated due to impossibility to immediately take back the sum invested in the immovable property. It can be determined according to the dollar inflation level during the period of exposition of facilities similar to the subject property; in addition we must consider that this premium is especially high in the countries where mortgage is underdeveloped.

Premium on investment management

The riskier and more difficult the investment is, the higher is the requirement to manage it competently. We should not confuse investment management with immovable property management, the cost of which is included in the operating costs. The amount of such premium may be determined by considering coefficient (percentage figure) of uncollected rent and vacancies.

Calculation of capitalisation rate by cumulative arrangement method

The calculation of capitalisation rate by cumulative arrangement method is done by summing up all of its components.

Example: determination of capitalisation coefficient with cumulative arrangement method:

Risk free rate on return/revenue - %	*3*
Risk of investing in the immovable property -%	*7*
Low liquidity premium -%	*5*
Premium for investment management -%	*5*
rate of capitalisation -%	*20*

I.e. capitalisation coefficient is – 0.2.

Calculation of capitalisation coefficient considering change in the asset value

As mentioned above, the capitalisation coefficient to be used for immovable property contains a rate of return/revenue on investment and norm of return (compensation/payment) on capital. If change in the asset value is forecasted, then it becomes necessary to consider the return on capital in capitalisation rate.

There are 3 ways to calculate rate of return (compensation/payment) on capital:

- Linear return on capital (Ring's Method),
- According to the fund for return on capital and rate of return/revenue on investment (Inwood method). It is sometimes referred as annuity method,
- Return of the capital by recovery fund and rate of return on investment (Hoskold method). [from internet - The Hoskold Method of Capitalisation is a method of capitalising net income to determine the value of property. The method involves the creation of a sinking fund at a 3 percent rate.]

Linear return of capital (Rings; method)

It is advisable/expedient to use this method when systematic decrease in the revenues is expected, while compensation of the main sum will take place in equal parts. Annual norm of return on capital is determined by dividing 100% value of the asset by useful life, i.e. it is a figure, which is opposite to term of asset use.

Example: Terms of Investment:

- Investment sum is 2000,
- Investment period/term is 5 years,
- Rate of return on investment is 12%.

Solution: norm of annual linear return equals 20%, because 100% of an asset will be written off during 5 years (100: 5). In this case capitalisation coefficient is 32%.

20% of the initial investment will be returned annually (GEL 400), together with 12% investment revenue. The % to be received will decrease year by year, because it shall be accrued on the diminishing balance of the total sum.

	12% 2000 GEL	12% 1600 GEL	12% 1200 GEL	12% 800 GEL	12% 400 GEL
% in GEL	240	192	144	96	48
Return of the main sum in GEL	400	400	400	400	400
Years	I	II	III	IV	V
Total GEL	**640**	**592**	**544**	**496**	**448**

ANNEX I - A Template for CIP Feasibility Study.

The relationship between AM & CIP is symbiotic by its very nature. In fact CIP has an integral input into the AAMP while at the same time being totally influenced by the state of the assets and their ability to fulfil the objectives set out in the Municipal action plans

This annex is an extract from Annex 2 of CIP Guidebook and is also included here for the convenience of the reader.

Note: Usually the Capital Investment Plan is an appendix to a municipal council resolution on adoption of this plan. Reference to the number of the relevant resolutions should be on a cover page.

1. COVER LETTER

As the Capital investment Plan (CIP) is a formal document presenting projects that municipality intends to implement the Mayor should present the document to the community and other stakeholders in a form of the cover letter.
Usually it includes a reference to the future vision of the municipality and short justification of the Plan in context of priorities set by municipal authorities.

2. EXECUTIVE SUMMARY

This is a summary of data presented in the following sections. It is recommended that the summary should answer the questions:

- How was the CIP document reached?
- Who was involved in its preparation?
- Who was consulted?
- How were citizens involved in the process?
- What criteria were used to select the projects?
- Other procedural issues if applicable.

The summary should define how much money municipality intends to devote on capital investments in the horizon of the plan and (if applicable) how much funds are to be gained from external sources.

If the plan consists of a few projects only, it is possible to describe them briefly the projects (or the most important ones) and explain what needs of the community will be fulfilled thanks to the implementation of these undertakings.

3. PRESENTATION OF AN INVESTMENT PLAN

This is usually a tabular section. All project are presented in the table that consists the following information:

- The Project title,
- The Unit responsible for implementation,
- Tasks to be done under the project (e.g. preparation of documentation, construction works, purchase of equipment, etc.)
- Expenditures in GEL planed for particular years in CIP horizon,
- Sources of financing.

It is also possible to include in the table other information like:

- Advantages arising from implementation of the project,
- Beneficiaries (to whom the project is directed),
- Monitoring indicators.

Depending on the size of a municipality this section may be divided:

- According to programs (option 1).
  The programs are designed to reflect strategic priorities of development for the municipality. In one program there might be a few types of projects. For instance in the program “Increasing of tourism attractiveness” the municipality may have investments related to road rehabilitation, creation of a tourist information centre and others.

- According to sectors / budget classification (option 2)
  In this case the investment projects are presented in sectors that are defined by law e.g. in budgetary classification. The layout of the table will therefore reflect the layout of the budget.

- According to stage of implementation or project status (option 3)
  In this case investment projects are presented in two groups:
  - On-going projects (already under implementation),
  - New projects (to be included in the next municipal budget).

- According to other criteria (option 4)
  For instance in a bigger municipality one may divide all projects into "strategic investments" - a few major projects - and "other projects" consisting of many small improvements of local infrastructure.

It is recommended that the investment projects should be presented on a map / plan of the municipality.

4. INVESTMENTS OF THIRD PARTIES

If it is justified the CIP document may also include investment plans of other entities to give a broader picture of how the municipality will develop during next few years. It is possible to include other public investments (not implemented by the municipality) e.g. governmental ones and investments of municipal utilities.

5. MONITORING THE CIP

If it is a second or next edition of the CIP it should be described how the previous version was implemented and what major changes were introduced to the Plan compared to the last year version.

Appendix: Investment projects cards

The cards describe each project in details giving more information than presented in section 3. Usually the layout of a card is similar to the layout of an application form used in projects submission phase of CIP preparation.

Appendix 5: The scope and methodological approach of feasibility study

Feasibility study is an analytical study prepared in the appraisal stage, combining technical, economic, financial, social and environmental assessments of a project proposal and carried out to reach conclusions on the overall feasibility and sustainability of a potential capital investment project.

In other words it is an analytical tool which is used in the project planning process and presents how the project will work under certain assumptions. It is also a supporting decision tool: it examines the practicality of the project.

Methodological Manual indicates the following steps in order to reach feasibility study:

Step 1: Define the project objectives and scope,

Step 2: Identify and choose the project alternatives for appraisal ,

Step 3: Demonstrate the demand for the services of the project and alternatives,

Step 4: Prepare economic analysis,

Step 4.1 Identify relevant benefits and costs,

Step 4.2: Estimate economic benefits and costs,

Step 4.3: Calculate net present values for project alternatives,

Step 5: Prepare risk analysis and a plan for their management,

Step 6: Prepare affordability and sustainability analysis,

Step 7: Identify the preferred project alternative and make recommendations for decision-makers.

Usually the FS are outsourced in specialised companies and a role of the municipal staff is to develop an appropriate terms of reference, contract the study and check the final result. On the basis of the PCN and the preceding analysis, it should be possible to draw up coherent terms of reference for the feasibility study.

There is no one binding structure of the FS. The exact contents of a Feasibility Study may also vary by sector. However the above mentioned Manual indicates the following chapters:

1. **Executive Summary**
   - Summarise the key findings of the Feasibility Study and recommendations aimed at high-level decision-makers.
2. **Analysis of the Existing Context for the Project**
   - Review the context for the project, including the current institutional framework.
   - Summarise government policy in the sector/sub-sector in which the project belongs and the respective roles of the State and the private sector.
   - Describe the role of the Economic Entity in the sector/sub-sector and how it became involved in the project. If there have been any previous attempts to initiate the project, explain why these failed.
   - Summarise the findings and conclusions of any preliminary or previous studies, including the pre-feasibility study where relevant.
3. **Examination of the Project Alternatives**
   - Assess the level and quality of existing public services to be improved by the project and identify any shortcoming or deficiencies, for example, poor quality services or bottlenecks or interruptions in service delivery.
   - Consider the levels of service mandated in government policy compared to existing services.
   - Identify who uses and needs the services, so that target users can be identified, for example, target users can be defined geographic location or socio-economic category.
   - Examine the different alternatives for meeting the identified needs for the relevant service. Alternative might include: regulatory changes or improved sector management practices, and no investment; rehabilitating existing facilities; or building completely new facilities.

4. Market Assessment and Demand Analysis

- Provide a forecast of the potential demand for the defined outputs (services) among the target users of the project and of the expected growth in this demand over the lifetime of the project. Include an estimate of any suppressed demand that is currently not being met because of insufficient coverage or service quality.
- Present estimates of the willingness and ability to pay for the services by potential users, where relevant.
- Present forecasts as scenarios representing different possible outcomes, including the most likely outcome and the worst-case scenario.

5. Summary of Technical Studies and Project Costs

- Provide a technical description of the engineering and non-engineering aspects of the project. This should summarise the technical and technological studies undertaken to assess the technical feasibility of the project and alternatives. Detailed studies should be appended to the Feasibility Study.
- Identify the input parameters for the project and their prices, including labour costs for construction and operation of the project.
- Provide detailed estimates of capital and operating and maintenance costs. Capital cost estimates will be on the basis of the preliminary technical design.

6. Spatial Planning

- Review spatial planning issues in relation to the project and its location. Summarise the implications for the project of local and national spatial plans.
- Describe the steps proposed to ensure conformity with the plans. Identify the official approvals required to proceed with the project.
- Set out the land acquisition requirements of the project and the procedures and timetable for meeting these requirements. Land acquisition and obtaining approvals must be factored into the project implementation plan.

7. Economic Analysis

- Present the economic analysis approach - economic cost-benefit analysis or, where appropriate, cost-effectiveness analysis
- Identify and value relevant and material costs and benefits
- Describe the data inputs, estimation techniques and assumptions used
- Present results of economic analysis for the proposed project compared to realistic project alternatives and the do nothing alternative,
- Append detailed work and any economic modelling undertaken for the Feasibility Study to the main report.

8. Risk analysis and management

- Identify the main sources of risk for the project and assess their impact on the economic feasibility and financial performance of the project and their likelihood.
- Present a plan for managing the key risks, including mitigation measures and reactive measures for if the risks should occur.

9. Financial and Fiscal analysis

- Present the financial analysis of the proposed project and the results of the assessment of financial sustainability of the operating entity, describing the data inputs and assumptions used to arrive at these results.
- Present an assessment of the net impact on the public finances, including changes in tax revenues, of the proposed project during construction and during operation.
- Append detailed workings and any financial modelling undertaken for the Feasibility Study to the main report.

10. Environmental and Social Impacts

- Summarise the environmental and social impacts, both positive and negative, of the project.
- Append full environmental and social impact assessments, where undertaken, to the Feasibility Study report.

11. Implementation and Operational Arrangements

- Present an assessment of the capabilities of the organisation(s) responsible for implementing and/or operating the project.

- Set out the outline plan and timetable for implementing the project, indicating key milestones in detailed planning, approval and construction.
- Describe the project management arrangements, including the organisational arrangements and the allocation of responsibilities between the different parties involved.
- Outline the organisational arrangements and allocation of responsibilities for operating and maintaining the project once completed.

12. Conclusions on Project Feasibility

- Summarise and interpret the findings of the preceding analyses to arrive at a conclusion concerning the technical and economic feasibility of the project, its sustainability and the associated risks.
- Make recommendations to decision-makers

ANNEX J - Asset Management related Job descriptions

These job descriptions cover infrastructure and other municipal physical assets. Other assets, intangible and even those involving consumables come under the management of others.

MANAGER

MAIN PURPOSE OF ROLE:

The Asset Management Team is responsible for capturing and interpreting the condition and performance of Municipality infrastructure and other municipal physical assets. This information is used to inform investment decisions, develop service initiatives and deliver asset refurbishment and replacement programmes on the basis of cost, risk and benefits.

The Asset Management Team Leader will be responsible for the continued development of the Municipality's asset management systems, establishing and maintaining accurate records and providing information relating to utility assets, land and buildings etc. as well as large machinery.

RESPONSIBLE TO:
Mayor. Municipal Council.

RESPONSIBLE FOR:
Asset Management Team Assistant

MAIN DUTIES AND RESPONSIBILITIES:

01. To oversee the establishment, collation and maintenance of accurate records and information relating to the asset infrastructure, which includes handling, processing and disposal.

02. To oversee the development and implementation of Asset Management systems to improve core asset data. To supervise the development and implementation of new ways to view and share asset data throughout the organisation, supporting other departments to perform their duties.
03. To provide a point of contact to address enquiries from property developers, citizens etc. seeking to confirm the details and location of the assets for their particular location.
04. Research and collate new and historic works information to update and maintain asset management data held within the Municipality Asset database.
05. To oversee the creation, maintenance and recording of the asset register including planned preventative and reactive maintenance works that are managed through this system.
06. To produce periodic and ad hoc reports on the condition, performance and status of the Assets.
07. To present periodic and ad hoc Asset reports to the Mayor and Town Council.
08. To be responsible for the delivery of various minor works projects required as part of the Asset Management function. Projects are wide ranging and could include software systems development all the way through to land and property refurbishment etc.
09. To oversee the maintenance and updating of the documents which detail the various processes and procedures which are significant to Asset Management implementation and delivery.
10. To coordinate with other departments relating to Asset Management.
11. To be familiar with relevant Georgian laws and regulations, as well as national and international best practices relating to Asset issues.
12. To raise issues of concern with Mayor and Municipality Department Heads.
13. To advise the Mayor, Council and Department Heads on Asset related issues.

KEY CRITERIA:

ESSENTIAL

01. Ability to communicate effectively both orally and in writing.
02. Ability to cultivate good working relationships at all levels and work as part of

a team.

03. Self-motivated and able to use own initiative to drive projects forward to completion.
04. The ability to produce accurate work under pressure and to prioritise workload to meet deadlines.
05. Experience in the use of information technology especially MS Excel.
06. Experience in the management and handling of data sets and databases, preferably in relation to Asset Management Functions.
07. Experience of using and updating Asset Management systems.
08. Willingness to undertake further training and development.

DESIRABLE

01 Interdisciplinary knowledge and experience – finance, engineering, IT.
02 Take ownership of problems in their own area of responsibility.
03 Set and achieve challenging goals and monitor quality

ASSISTANT

MAIN PURPOSE OF ROLE:

The Asset Management Team is responsible for capturing and interpreting the condition and performance of Municipality infrastructure assets. This information is used to inform investment decisions, develop service initiatives and deliver asset refurbishment and replacement programmes on the basis of cost, risk and benefits.

The Asset Management Assistant will support the continued development of the Municipality's asset management systems, establishing and maintaining accurate records and providing information relating to utility assets, land and buildings etc. as well as large machinery.

RESPONSIBLE TO:

Asset Management Team Manager.

RESPONSIBLE FOR:

Self.

MAIN DUTIES AND RESPONSIBILITIES:

01. To establish, collate and maintain accurate records and information relating to the asset infrastructure, which includes handling, processing and disposal.
02. To assist in the development and implementation of Asset Management systems to improve core asset data. To assist in the development and implementation of new ways to view and share asset data throughout the organisation, supporting other departments to perform their duties.
03. To provide a point of contact to address enquiries from property developers, citizens etc. seeking to confirm the details and location of the assets for their particular location.

04. Research and collate new and historic works information to update and maintain asset management data held within the Municipality Asset database.
05. Assist with the creation, maintenance and recording of the asset register including planned preventative and reactive maintenance works that are managed through this system.
06. To produce reports on the condition, performance and status of the Asset.
07. To be responsible for the delivery of various minor works projects required as part of the Asset Management function. Projects are wide ranging and could include software systems development, all the way through to land and property refurbishment etc.
08. To assist with the maintenance and updating of the documents which detail the various processes and procedures which are significant to Asset Management Implementation and delivery.
09. To provide technical support to other departments relating to Asset Management.

KEY CRITERIA:

ESSENTIAL

01. Ability to communicate effectively both orally and in writing.
02. Ability to cultivate good working relationships at all levels and work as part of a team
03. Self-motivated and able to use own initiative to drive projects forward to completion.
04. The ability to produce accurate work under pressure and to prioritise workload to meet deadlines.
05. Experience in the use of information technology especially MSExcel.
06. Experience in the management and handling of data sets and databases, preferably in relation to Asset Management Functions.
07. Experience of using and updating Asset Management systems.
08. Willingness to undertake further training and development.

DESIRABLE

01 Interdisciplinary knowledge and experience – finance, engineering, IT.

02 Take ownership of problems in their own area of responsibility.

03 Set and achieve challenging goals and monitor quality

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