Ministry of Housing and Urban Affairs
Government of India

National Urban Digital Mission (NUDM)

Asset Management

Knowledge Standard

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0. INTRODUCTION

The terminology and vocabulary used for municipal governance differ among Urban Local Bodies (ULBs) across India due to the federal structure of governance, state-specific laws, and varying e-governance system implementations. Non-standardized interfaces and storage also result in challenges related to data interpretation and interoperability. As a consequence, measuring municipal performance can lead to significant inconsistencies not only from city to city but also from state to state. Therefore, without clear definitions, vocabulary, specifications, and benchmarks for municipal governance, it is challenging to enable 'Data-Driven Governance.'

The municipal governance standards are being designed to include minimum base data elements common across municipal services in ULBs/ development authorities or parastatals to ensure interoperability, harmonization, and data-driven governance. ULBs with more complex processes can adopt and expand on these initiatives. The Knowledge Standards will help in:

a) Identifying and categorizing important data elements for a domain
b) Resolving differences in terminology for urban governance
c) Analysing current city domain models, processes, reports and Key Performance Indicators (KPIs); thus, retrofitting existing data models with missing data

The asset management taxonomy defined in this standard includes asset management classifications, channels, stakeholder matrix, processes, reports and KPIs with their definitions. The definition of entities for Asset Management mentioned in this document has been curated from relevant national standards and may be read synchronously with relevant state and local laws. In the absence of such laws, these definitions may be directly adopted. The taxonomy structure in this document is scalable both vertically and horizontally to accommodate ULB specific complexities as well as changes in people, process and technology over time.

This knowledge standard, i.e. asset management taxonomy will be used in developing technical standards i.e. Asset Management Data Models and Application Programming Interface (API) Specifications as well as for creating metadata specifications. Few sample parameters and specifications are also given in the Annex-A for understanding purposes.

Together these standards will ensure semantic and syntactic interoperability among all e-Governance systems in India.

The audience for this standard includes but is not limited to government organisation, industry, academics, architects, customers, users, tool developers, regulators, auditors and standards development organizations. This Asset Management Taxonomy is developed as an open standard under the National Urban Digital Mission by National Institute of Urban Affairs. No part(s) of the document can be sublicensed further by any other organisation. Any attempted sublicense, whether voluntarily or otherwise, shall be null and void, and will attract penal actions.

This document is also interrelated with other Indian standards such as -National Municipal Accounting Manual (NMAM), National Municipal Asset Valuation Methodology manual,

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(ASLB-17)- Accounting Standard for Local Bodies, (ASLB-17) - Property, Plant and Equipment.

ULBs across India often use different terms and have varied administrative structures, leading to inconsistencies in how assets are classified.

For instance, larger ULBs may have decentralized zones with their own hierarchies, and the officials in charge of these zones might have different levels of financial authority. This variation can result in the same type of asset being categorized differently across zones within the same ULB. Consequently, when considering major ULBs nationwide, numerous classifications or taxonomies for identical assets emerge. To address this issue, it is advisable to harmonize asset taxonomy within the existing administrative framework of the ULBs. This can be achieved by implementing standardized data models and interoperability frameworks, which facilitate consistent asset classification across various zones/ departments in the same ULB as well as across different ULBs in the State.

To achieve effective municipal asset management, it is essential to delegate asset management responsibilities to requisite levels, where local departments can oversee and manage their assets based on their specific needs and operational priorities.

Once the assets are managed at the requisite level, these records should be consolidated at the ULB level to create a unified and accurate database of all municipal assets. This centralized asset register ensures transparency, supports informed decision-making, and provides a comprehensive overview of resource allocation across the ULB. By adopting this systematic approach, municipalities can enhance resource efficiency, strengthen decentralized governance practices, and ensure alignment with budgetary provisions at both local and national levels.

0.1. Governing Principles in the Design of Knowledge Standard

To ensure this taxonomy fits the needs of interested stakeholders the following design principles have been followed.

0.1.1. Minimalist

The standards are designed to have minimum base elements common across ULBs to ensure interoperability, harmonisation and data-driven governance. These can then be adopted and built upon by some ULBs with higher process complexities.

0.1.2. Evolvable

The standard is designed to evolve over a period of time thereby adapting to changing needs and emerging technologies thus making the system comprehensive progressively.

0.1.3. Modular

The classifications and categorisations in the knowledge standard are designed modularly, yet they function together as a whole. They are independent and self-contained and may be combined and configured with similar units to suit separate contexts, for e.g., managing a computer as an IT asset involves classifying it, determining digital and non-digital channels

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for communication, establishing stakeholder responsibilities, and adhering to a lifecycle process encompassing acquisition, verification, maintenance, valuation, and disposal. KPIs and reports are then used to monitor asset health and inform decisions, and thus a modular approach allows for prioritizing areas like security through focused improvements in classification, maintenance, and stakeholder training.

0.1.4. Extendible

The standard is designed to be exhaustive and the elements of urban governance are positioned in a hierarchy that can accommodate both horizontal and vertical additions. This leaves room for wider adoption and innovation to suit the contexts of any ecosystem. The end goal is to build a knowledge practice that supports Open Standards with the Data Element taxonomy as a base.

0.1.5. Open

The standard is designed to be 'open' to enable wider ecosystem participation and use. The standard is intended to be used by State Governments, ULBs, industry and technology providers, academia and civil society organisations who are either working in the domain or are providing services to the ULBs in any manner.

0.1.6. Accessible & Inclusive

The standard is designed to be inclusive and accessible in nature for all types of stakeholders. The standard will enable the technology to reach every section of society.

0.2. Sample Use Cases

The use cases mentioned below describe the workflow for managing assets in an urban context from creation or acquisition to disposal.

0.2.1. Use Case- 1 (Municipal Road)

To systematically manage a municipal road throughout its useful life, ensuring optimal service delivery, cost efficiency, and compliance with regulations the following processes are followed:

0.2.1.1. Acquisition

a) Identification & Planning

- ULB identifies the need for a new road based on city expansion, traffic demand, or policy directives
- Feasibility study conducted (budget, location, material selection)

b) Procurement & Construction

- Tendering process initiated, and contractor selected
- Road constructed as per design and specifications

c) Commissioning & Documentation

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- Road inspected for compliance before acceptance
- Asset registered in the ULB's digital asset register with unique ID, valuation, and expected lifespan

0.2.1.2. Repair & Maintenance

a) Routine Maintenance

- Regular inspections (e.g., cracks, potholes, drainage)
- Preventive measures (seal coating, minor patching)

b) Periodic Repairs

- Resurfacing or minor reconstruction based on wear and tear
- Emergency repairs after extreme weather or accidents

c) Performance Monitoring

- Use of sensors, GIS mapping, and citizen feedback for condition assessment
- Decision-making for major rehabilitation based on usage and deterioration rate

0.2.1.3. Depreciation

- The road's book value reduces annually based on a predefined method (e.g., Straight-Line or Declining Balance)
- Recorded in financial statements for budget planning

0.2.1.4. Disposal

a) Decommissioning Decision

- Structural integrity assessment determines the road is beyond repair
- Alternative options (full reconstruction vs. asset repurposing) evaluated

b) Removal or Redevelopment

- If disposed, assets (e.g., materials, streetlights) salvaged for reuse
- If repurposed, land may be reassigned for new urban projects (parks, transit corridors)

c) Financial & Legal Closure

- Final depreciation recorded, asset removed from books
- Regulatory compliance ensured before handover or sale

0.2.2. Direct Application (Water Treatment Plant)

Below is a use case for managing a water treatment plant as a critical infrastructure asset, incorporating key stages and financial conside4rations:

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I. Acquisition

a) Need Assessment: Identified growing demand for clean water in expanding urban zones through public consultations and demographic analysis

b) Budget Allocation: Secured ₹50 crore funding via municipal bonds and state grants, validated through cost-benefit analysis

c) Procurement: Selected EPC contractor via transparent bidding (L1 tender system). Asset registered in ULB's GIS-enabled inventory with details: Cost: ₹48 crores, Expected lifespan: 30 years, Location: Ward 12 coordinates

II. Repair & Maintenance

a) Preventive Maintenance: Biannual filter replacements, quarterly pipeline inspections, and real-time sensor monitoring for turbidity/pH levels

b) Condition Assessment: Annual RSP (Remaining Service Potential) evaluation using:

- Metric: 85% functional performance (vs. 75% threshold for action)
- Corrective Actions: Replaced pumps (₹2.1 crore) in Year 15 after detecting efficiency drops

III. Depreciation

a) Method: Straight-line depreciation (₹1.6 crore/year) over 30-year lifespan

b) Impact: Annual municipal budgets allocate depreciation reserves for future replacements

IV. Disposal

a) Auctioned salvageable machinery: ₹4.3 crore revenue
b) Land repurposed for public park under Smart City Mission

0.2.3. Indirect Application (Indirect Asset Management of Information Technology Services)

Below is a use case focusing on the management of indirect IT services through a third-party cloud service provider.

0.2.3.1. Acquisition

- Need Assessment: Identified the need for a robust data management system to streamline operations and improve public service delivery
- Budgeting: Allocated ₹1 crore from the annual budget for IT services, recognizing the need for external expertise and infrastructure
- Vendor Selection: Issued an RFP to solicit proposals from cloud service providers, evaluated based on criteria such as cost, service offerings, scalability, and

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compliance with data protection regulations. Selected a vendor for a three-year contract worth ₹2 crores, covering hosting, maintenance, and support
- Documentation: Signed contracts detailing SLAs, data security measures, and performance metrics

0.2.3.2. Repair & Maintenance

- Service Level Monitoring: The ULB regularly reviews the vendor's performance against agreed-upon SLAs to ensure uptime and responsiveness. Monthly performance reports are generated to track service quality
- User Support: Established a helpdesk for staff to report issues with the cloud service, ensuring timely resolution of technical problems. The vendor is responsible for system updates and security patches

0.2.3.3. Depreciation

- Indirect Depreciation: As the ULB does not own the physical assets (servers, storage), depreciation is not directly applicable. However, costs associated with the service are amortized over the contract period (three years). This includes initial setup costs and ongoing service fees.

0.2.3.4. Disposal

- Contract Review and Renewal: At the end of the three-year contract, the ULB evaluates the performance of the cloud service provider against its needs and market alternatives. If satisfied, they may renew or renegotiate terms; if not, they explore other vendors or solutions.
- Data Migration Plan: Should a new provider be selected; a comprehensive plan is developed to ensure secure data migration while maintaining compliance with data protection laws.

0.3. Information Consistency

Consistent use of Data elements, processes, KPIs and their definitions from this Knowledge Standards helps in implementing Information consistency across ULBs. To ensure information consistency, ULBs should use new or existing integrated platforms for delivering Asset Management services. They should use Metadata tags from the data elements defined in this knowledge standard.

1. SCOPE

This Indian standard provides a unified view of asset management and its processes in a municipality and introduces common and widely accepted terminologies and semantics that can be used across multiple systems. Taxonomy for asset management captures the most important entities, their properties, categories, subcategories, parameters, and specifications within this domain as well as other associated areas. For the purpose of this standard, asset

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management is synchronous to fixed asset management for municipalities (India, December, 2004).

2. REFERENCE

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

SP 7:2016 National Building Code of India (Third Revision)

IS 18006 (Part 1) Municipal Governance - Reference Architecture.

The other parts in this series of standards consist of the following individual parts of IS 18006.

Part 1: Reference Architecture

Part 3: Property Tax

Part 5: Municipal Grievance Redressal

Part 6: Trade License

Part 7: Water and Sewerage

Part 8: Building Plan Approval

3. TERMINOLOGY AND ABBREVIATIONS

3.1 Terminology

For the purpose of this standard, the definitions given in IS 18006 and IS 18006 (Part 3/Sec 1): 2021 shall apply, in addition to the following:

3.1.1 Aadhaar

Aadhaar is a verifiable 12-digit identification number issued by Unique Identification Authority of India (UIDAI) to the residents of India.

3.1.2 Application Programming Interface (API)

The term Application Programming Interface (API) means any mechanism that allows a system or service to access data or functionality provided by another system or service. The API is generally used to interact (like query, list, search, sometimes submit & update) directly with the specific information on a system, to trigger some action on other systems, or to perform some other action on other systems.

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3.1.3 Data Elements

The basic principle of data modelling is the combination of an Object class and an Attribute to form a more specific 'data element concept', for e.g.: Asset ID, equipment specifications, and maintenance schedules.

3.1.4 Digi-Locker

Digi-Locker is a secure cloud-based platform for storage, sharing and verification of documents & certificates.

3.1.5 Domain

A sub-category under an Information Technology field is a Domain; specific purpose within a "Domain" is known as "Area". For example, "Document type for Web publishing content" is one Area under the "Presentation" domain.

3.2 E-governance

A procedural approach in which the Government and the citizens, businesses, and other stakeholders are able to transact all or part of their activities using Information and Communication Technology (ICT) tools.

3.2.1 Interoperability

The ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged.

3.2.2 Metadata

Metadata describes how and when and by whom a particular set of data was collected. Metadata is essential for understanding the information stored, for e.g. Metadata Fields required for Municipal Asset Management in India. Metadata examples for Condition and Maintenance are as under:

Field Name	Description	Example Value
Current Condition	Status of the asset	Good
Last Inspection Date	Date of last inspection	15-01-2024
Next Maintenance Due	Scheduled maintenance date	15-07-2024
Maintenance Frequency	Routine maintenance cycle	Biannual

S.No	Field	Description
1	**Asset ID**	Unique identification code for the asset
2	**Asset Name**	Name of the asset (e.g., Municipal Water Tank)

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3	**Asset Type**	Category of the asset (Movable, Immovable)
4	**Location**	GIS coordinates or address of the asset
5	**Date of Acquisition**	Date when the asset was procured
6	**Source of Funding**	Funding scheme (e.g., Smart Cities Mission, AMRUT, JNNURM)
7	**Condition Assessment**	Current status of the asset
8	**Last Inspection Date**	Date of the most recent assessment
9	**Maintenance History**	Past repairs and servicing records
10	**Responsible Department**	Municipal department in charge of maintenance, etc

These metadata fields help in tracking, maintaining, and optimizing municipal assets for effective governance and service delivery.

3.3 Depicted Symbols

Classification is depicted as  for e.g. Asset Management

Channels are depicted as  for e.g. Digital, Non-Digital

Stakeholders are depicted as  for e.g. Stakeholder Matrix

Processes are depicted as  for e.g. Acquisition, Verification etc.

Reports & KPIs are depicted as  or e.g. Asset Register Accuracy

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3.4 Abbreviations

BIS	Bureau of Indian Standards
CDG	Centre for Digital Governance
AMP	Asset Management Plan
API	Application Programming Interface
BER	Beyond Economic Repair
KPI	Key Performance Indicators
ULB	Urban Local Body
ID	Identification Document/Number
IVR	Interactive Voice Response
MoHUA	Ministry of Housing & Urban Affairs
NIUA	National Institute of Urban Affairs
NUDM	National Urban Digital Mission
O&M	Operation & Maintenance
UPYOG	Urban Platform for deliverY of Online Governance
UT	Union Territory
NMAM	National Municipal Accounting Manual
ICAI	Institute of Chartered Accountants of India
IPSASB	International Public Sector Accounting Standards Board
IFAC	International Federation of Accountants
IFRS	International Financial Reporting Standards
IASB	International Accounting Standards Board

4. ASSET MANAGEMENT

Municipalities play a very important role in efficient and continuous services to its people and are generally concerned with provision of basic amenities to the people. Moreover, municipalities generally function on the basis of resources, which are collected from the public through various taxes and non-taxes. They also receive grants from the Government and donations from various sources. Hence, the aspect of accountability is also imbibed in the functioning of the municipalities. With the growing importance of devolution of functions to municipalities (ref. 74 amendment), its governance has come under constant public scrutiny. In most of the municipalities, poor control over stocks, stores, fixed assets, land and buildings have resulted in wide-spread theft, misuse, misappropriation and encroachment.

Effective asset management is essential for municipalities to ensure optimal utilization of resources, deliver high-quality services and ensure sustainable development. The National Municipal Accounts Manual (NMAM) provides a framework for integrating asset management with municipal financial systems, enabling transparent and informed decision-making regarding asset acquisition, maintenance, and disposal. Asset management must be tackled as a matter of urgency. Municipalities control the largest and costliest

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portfolio of assets, which include both pre-existing and newly acquired assets. There is a need for proper guidelines and adherence to good asset management practices.

This taxonomy for Asset Management shall capture the most important entities, their properties, categories, subcategories, parameters, and specifications within this domain. A well-structured Asset Management taxonomy helps by:

a) **Improving Efficiency** by categorizing assets systematically and streamlining asset tracking, retrieval, and management. This reduces the time spent searching for information and enhances overall operational efficiency.

b) **Enhancing Decision Making by** providing a structured overview of asset performance, condition, and value. Managers can easily analyze and compare assets based on their categories and status.

c) **Ensuring Compliance** with industry regulations and standards by clearly defining asset categories and their associated requirements.

d) **Facilitates risk assessment and mitigation** strategies by highlighting vulnerabilities across asset types.

e) **Facilitating Data Consistency and Standardization** by creating a standardized framework for asset classification, thus ensuring consistency across data entry and reporting, which is crucial for accurate analysis, audits, and long-term asset planning.

f) **Supporting Long-Term Planning and Maintenance** for asset replacement or upgrades by providing detailed insights into the life cycle, usage patterns, and maintenance schedules of assets. This leads to more proactive management and cost savings.

As per the National Municipal Accounts Manual (NMAM), an asset register is a comprehensive and centralized system for tracking and managing an organization's assets throughout their lifecycle.

For the correct value to be included in the asset register, the following details should be provided:

a) Completed Asset Installation Note
b) Copy of Gift, Donation and Processing Form (clearly marked copy); and
c) Confirmation of the market value of donated item

It serves as a detailed register of all assets, providing essential information necessary for effective asset management. Most States/ UTs and their ULBs are moving towards IT solutions for digital delivery of services. An integrated IT solution with a digital asset register[1] shall additionally facilitate asset management in ULBs.

[1] A digital asset register is an electronic system that records and manages all municipal assets, facilitating efficient tracking, maintenance, and reporting

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Financial statements are closely linked to asset management because they reflect the financial impact of asset-related transactions.

5. TAXONOMY FOR ASSET MANAGEMENT

Taxonomy for Asset Management cannot be built in a silo and needs to be accompanied by entities like Asset Management Classification, Channels, Stakeholders, associated Processes, Reports and KPIs. ***See Fig.1.***

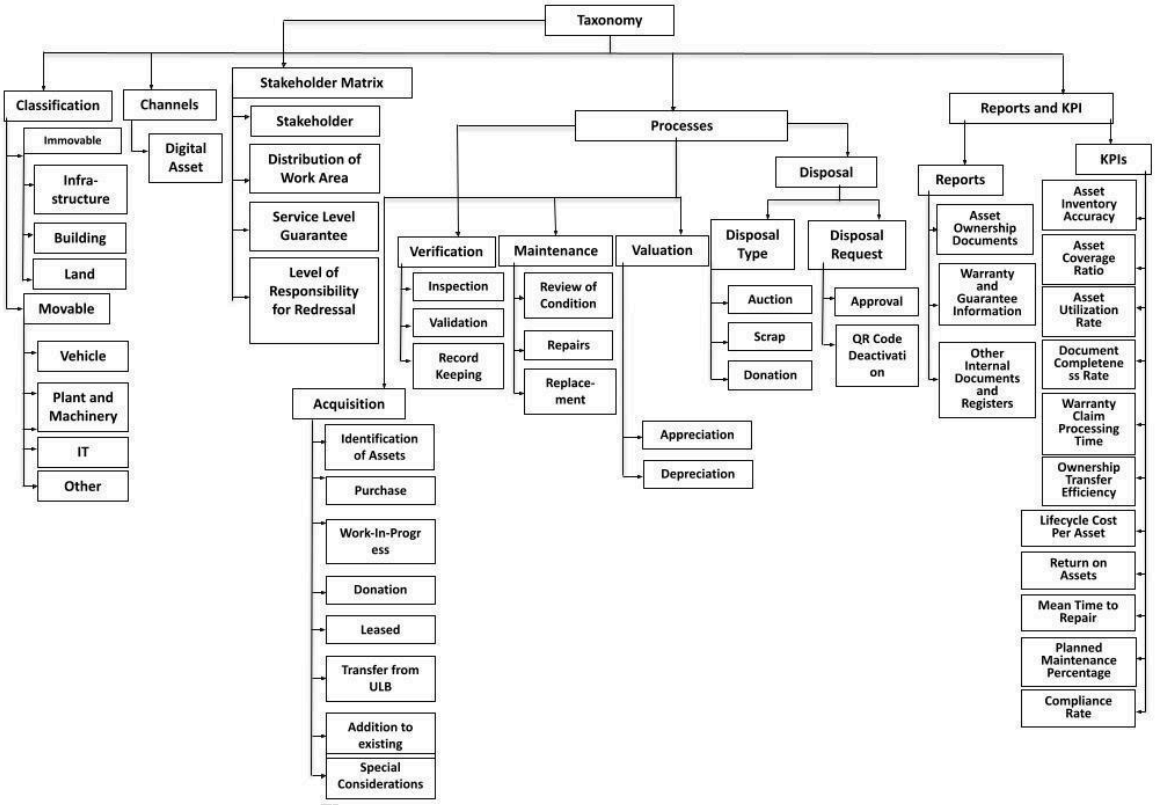


Figure 1 Taxonomy of Asset Management

5.1 Assets & Classification

5.1.1 Assets

"Tangible objects or intangible rights owned by the ULBs and carrying probable future benefits" (ICAI) as defined in NMAM 2004.
Institute of Chartered Accountants of India (ICAI), defines a fixed asset as: An asset held with the intention of being used for the purpose of producing and providing goods or services and is not held for sale in the normal course of business. (Service Delivery Potential)

Assets having a useful life more than a year are termed as fixed assets. For the purpose of this standard, fixed assets are being synonymously used as assets. Hence, this standard shall detail the taxonomy of fixed assets.

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5.1.2 Classification of Assets

The National Municipal Accounting Manual (NMAM) (India, December, 2004) provides a structure for fixed assets classification based on a mix of 'function' and 'nature' roles.

This standard intends to supplement the NMAM and hence, the same classification of assets will be extended for use in this Standard. Where states have modified the NMAM heads or added further detail codes, the modified heads may be used.

An asset should be recognized in books of accounts when (Indian Railways Valuation Methodology)

a) it is being used,
b) future economic benefits associated with the asset will flow to the ULB; and
c) the cost of the asset can be measured reliably.

However, there are several assets that are not owned by municipalities but controlled by them such as heritage buildings. Herein, the concept of control of an asset's economic benefit is the key issue in determining whether that asset should be reported in the financial statement of the municipalities.

As per NMAM, fixed assets, such as buildings, infrastructure, and equipment, are categorized under the Major Head Code "4" for capital expenditures and assets. These assets are valued at their cost of acquisition or construction and depreciated using the straight-line method. [2]

Accounting subjects in the context of municipal accounts are structured into primary and secondary levels. **Primary account codes are numeric and consist of 7 digits, divided into Major, Minor, and Detailed Head Codes.** The Major Head Code indicates the nature of the account (e.g., revenue income, capital expenditures). Minor Head Codes provide further details within each major category with states allowed to add new codes. Both major and minor head codes are mandatory in the book of accounts. Detailed Head Codes offer further details and are identified by states, allowing for flexibility in adding new heads. This structure ensures a comprehensive and organized accounting system that is interoperable and reconcilable.

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[2] The **Straight-Line Method of Valuation** is a simple way to calculate asset depreciation. It spreads the **cost of an asset** evenly over its **useful life**.

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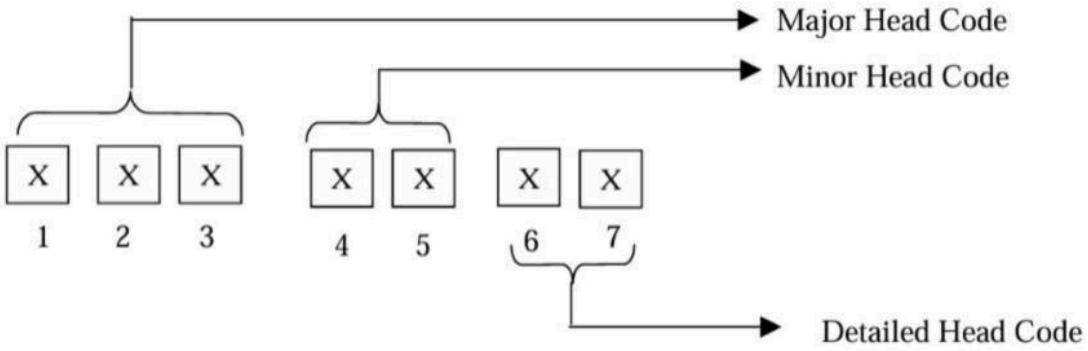


Figure 2 Major, Minor & Detailed structure of codes as per NMAM

Example 1: A municipal cloud-based data center under the NMAM framework is categorized as 600-20-02. It falls under Major Code (600) – IT & Digital Infrastructure, Minor Code (20) – Data Centers & Servers, and Detailed Code (02) – Cloud-Based Data Center. This classification ensures efficient tracking, resource planning, and governance of municipal IT assets, supporting smart city infrastructure.

This standard pertains to the first 5 digits of the account codes - the major and minor heads. The detailed head code can be customised in various states and municipalities as needed.

The fixed assets in municipalities can be classified under immovable and movable assets (Fig-3) For municipalities, movable assets aid in operations and immovable assets form the core infrastructure of a city.

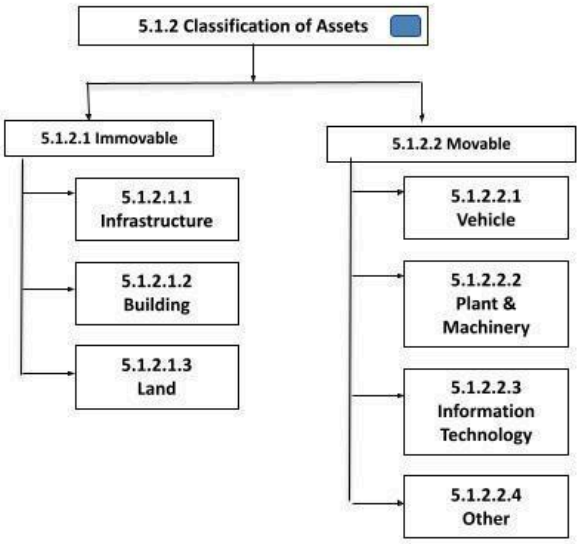


Figure 3 Classification of Assets

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5.1.2.1 Immovable Assets

These assets are stationary and cannot be relocated without significant structural changes, for e.g. land, buildings, roads, bridges, water supply systems, and public parks.

Immovable assets are considered long-term investments and are generally recorded as **capital assets** in municipal accounting.

5.1.2.1.1 Infrastructure Assets

An infrastructure asset is an immovable asset with the characteristics of being a part of a system or network, specialised in nature and does not have alternative uses, and is subject to constraints on disposal (India, December, 2004).

Plant and machinery used specifically in waterworks, pumping stations, sewerage treatment plant etc. which are classified under this section.

5.1.2.1.2 Buildings

A building is defined as a structure that is permanently attached to the land, has a roof, and is partially or completely enclosed by walls. It is not intended to be transportable or movable. In the context of municipal accounting, buildings are considered long-term fixed assets used for providing municipal services.

The construction of buildings involves several stages, including planning, design, procurement, and execution. This process is crucial for municipalities as it involves significant capital expenditures. These expenditures are recorded under the Major Head Code "4" for capital expenditures and assets. Buildings are capitalized and depreciated over their useful life according to accounting standards. Multipurpose buildings that are constructed for more than one purpose, may also be considered under this classification.

Example of Classification:

- **Major Head Code**: 4 (Capital Expenditures & Assets)
- **Minor Head Code**: 20 (Buildings)
- **Detailed Head Code**: 01 (Specific Building Type, e.g., Art Gallery Building)

Buildings include all the types of buildings as categorized under URDPFI such as Office-Buildings, School-Buildings, Public-conveniences, Hospitals, Dispensaries, Maternity and Child welfare centers, Shopping-complex, Town Hall Building, Community Centers, Staff Quarters, Rest-house, Milk Dairy, Workshop Buildings, Fire stations, Stores Building, Covered taxi stands, Covered parking areas, Lavatory Blocks, Urinals, *Dhalaos* and Dustbins and garbage vats, etc. Heritage sites/ buildings may also be included under this sub classification.

5.1.2.1.3 Land

Land includes parks, playgrounds, agricultural land/ urban farming, Dhobighat, dumping

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ground, Tonga, rickshaw, taxi (other than underground taxi stands) and cycle stands, parking places (other than those which are covered) and any vacant site on which no construction has taken place. Where assets such as buildings, roads, bridges etc. are constructed on land, all land (including covered land) should be shown as under this classification of immovable assets.

Municipalities across the country own valuable land and buildings, which must be accounted for in the asset register. Many Urban Local Bodies (ULBs) lease buildings to small traders and markets, but in several cases, original lease agreements are missing, and rents have remained historically low, sometimes even lower than the cost of rent collection. Most of these properties are in prime city locations, making proper document and valuation essential. This updated value should then be referenced to revise rental rates.

Accurately documenting and valuing these assets both at the time of procurement and disposal can enhance a municipality's creditworthiness, allowing them to use such properties as collateral for municipal bonds or other financing options, leading to better borrowing terms.

5.1.2.2 Movable Assets

These are assets that can be easily transported from one place to another without altering their form or function such as vehicles, office equipment, machinery, tools, etc.

5.1.2.2.1 Vehicle

Vehicles include all types of trucks, water tankers, buses, jeeps, cars, two-wheelers, three-wheelers and loaders, etc.

Mobile machinery such as Road Rollers and Bulldozers would not be classified as vehicles as their primary purpose is not transportation but are classified under plant and machinery sub-classification.

5.1.2.2.2 Plant & Machinery

Plant and machinery include all engineering equipments like road rollers, bulldozers, medical equipments used in hospitals, dispensaries and maternity centers, scientific equipments, generators, clock tower etc. This will not include plant and machinery used specifically in waterworks, pumping stations, sewerage treatment plant etc. which are already classified under infrastructure classification. However, plant and machinery used for other purposes should be included under this sub-classification.

5.1.2.2.3 Information Technology (IT)

IT municipal assets refer to information technology resources owned by a municipality to support its administrative, operational, and service delivery functions. These assets are recorded in the book of accounts based on their purchase cost and depreciation over time. Assets such as laptop, desktop computer, printer, scanner, camera, projectors, software applications, network infrastructure, etc. shall be included here.

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5.1.2.2.4 Other

This will include all other assets not specifically covered in any of the earlier heads such as intangible assets (rights etc.)

Specific assets with different valuation or re-use norms (such as Heritage assets, works of arts etc.) may also be classified as separate sub-groups under this head.

5.2 Channels

Channel / Mode / Method through which Asset is being procured by the ULB. **See Fig.04.**

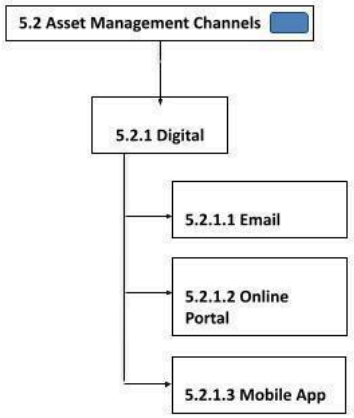


Figure 4 Asset Management Channels

5.2.1 Digital

Digital means an electronic way to collect, store, process and transmit data in the desired form. In the context of Asset Management, this refers to utilizing digital modes for the purpose of procurement, verification, maintenance, valuation & disposal.

5.2.1.1 E-mail

Electronic media for transfer of messages and information through the internet.

5.2.1.2 Online Portal

Online portals refer to the IT solutions developed for Asset management. This broadly includes an assessment calculator, asset management data, information regarding ownership and facility to pay the requisite fees through payment gateways linked to the portals.

These portals usually include the websites developed by the National, State or ULB for e-governance service delivery.

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5.2.1.3 Mobile App

A mobile application, also referred to as a mobile app or simply an app, is a computer program or software application designed to run on a mobile device such as a phone, tablet, or watch.

5.3 Stakeholder Matrix

This section details the stakeholders, distribution of work areas, levels of responsibility, and Service Level Guarantees (SLGs) for various stakeholders engaged with the asset management system within the ULB.

It is structured based on ward, locality, or jurisdiction, ensuring clear accountability and efficient service delivery.

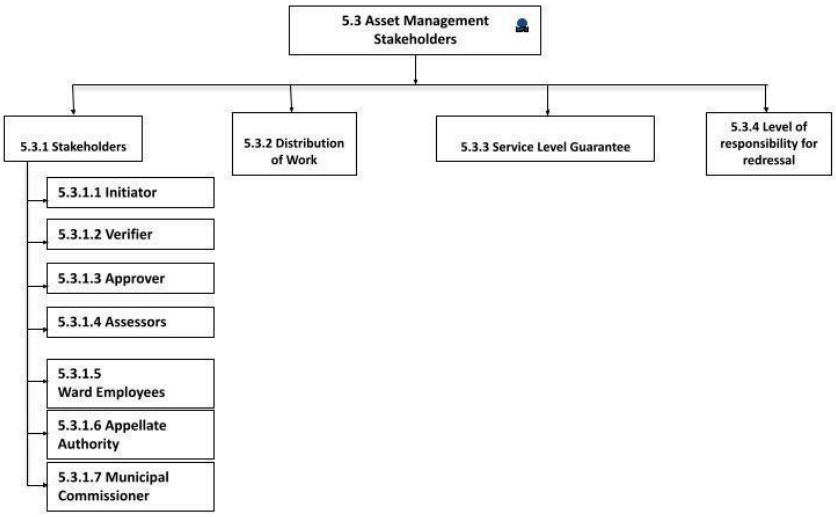


Figure 5 Asset Management Stakeholders

5.3.1 Stakeholders

These are the stakeholders involved in various processes in asset management such as acquisition, verification, maintenance, valuation & disposal.

Participation by all relevant stakeholders ensures sharing a common understanding and involvement in the decision-making. It further leads to joint ownership and harmonized access to information connecting multiple urban departments to serve citizens better.

5.3.1.1 Initiator

The initiator is responsible for creating or proposing new asset entries, updates, or transactions within the system.

Responsibilities:

a) Create new asset records or update existing ones.

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b) Ensure all necessary information is provided for asset registration, such as Asset ID, name, type, category, sub-category, location ID, ownership ID, acquisition date, status, etc.

5.3.1.2 Verifier

The verifier physically reviews and validates the information provided by the initiator to ensure accuracy and compliance with organizational policies.

Responsibilities:

a) Review asset details for correctness and completeness

b) Check if the asset classification, valuation, and other attributes are appropriate

c) Validate that the asset is properly linked to relevant financial transactions or maintenance schedules

5.3.1.3 Approver

The approver is responsible for authorizing the asset management actions proposed by the initiator.

Responsibilities:

a) Approve or reject asset additions, updates, or disposal requests based on organizational policies and available resources.

b) Ensure that approvals align with budgetary constraints and strategic asset management plans.

c) Confirm that all necessary documentation and compliance requirements are met.

5.3.1.4 Assessors

An assessor is a ULB official who is responsible for evaluating and managing municipal assets, ensuring compliance with regulations, and supporting financial decision-making. This valuation is critical for financial reporting and budgeting processes.

5.3.1.5 Ward Employees

Ward employees are the employees of municipal council or municipal authority, concerned with administrative wards of the city.

5.3.1.6 Appellate Authority

The Appellate Authority is an entity playing a significant role in overseeing decisions related to asset management and addressing grievances.

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The authority serves as a platform for stakeholders, including citizens and municipal employees, to appeal against decisions or actions taken by ULBs. This includes disputes related to asset valuations or maintenance practices.

They also ensure that ULBs adhere to established policies and guidelines related to asset management. This includes compliance with financial regulations, maintenance standards, and reporting requirements.

5.3.1.7 Municipal Commissioner

The Municipal Commissioner is the executive head of the Municipal Corporation, responsible for implementing decisions made by the standing committee and the Municipal council.

As the executive head of the municipality, the Municipal Commissioner is responsible for overseeing the management, maintenance, and development of municipal assets.

5.3.2 Distribution of Work Area

This refers to the ward / zones / sectors within ULB pertaining to the responsibility of requisite stakeholders.

In the context of asset management, the distribution of work area refers to distribution of responsibility as per type of asset (roads, water supply systems, sanitation infrastructure, public buildings, and transportation networks to requisite departments) as well as various distribution of roles as per various stages in the asset management process.

Municipal Corporation manages various urban assets, including roads, water supply, sanitation, solid waste, and public buildings. The following table outlines how work areas are distributed among key stakeholders for asset management.

Asset Type: Roads & Bridges

Stakeholder	Work Area Responsibilities
Municipal Commissioner	Approves road development and maintenance plans, oversees budgeting, and ensures compliance with state policies.
Engineering Department	Designs, constructs, and maintains roads, bridges, and flyovers; conducts structural audits.
Finance & Accounts	Allocates budget for road projects, monitors expenditures, and ensures financial compliance.
Public Works Department (PWD)	Executes road and bridge maintenance, repairs potholes, and coordinates with contractors.
Transport & Traffic Management	Manages traffic signals, road safety, and parking infrastructure.
IT Department	Implements GIS-based road asset tracking, smart traffic management, and online complaint systems.
Citizens & RWAs	Report road damage, traffic issues, and participate in planning consultations.

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5.3.3 Service Level Guarantee

Service Level Guarantees (SLGs) in ULBs ensure that urban services are delivered efficiently, with measurable performance standards for asset management. Key examples include -

a. Road Cleaning Frequency - major roads to be cleaned daily and internal roads twice a week.

b. Water Quality Standards - water quality to meet BIS 10500:2012 standards with less than 1% contamination cases.

c. Municipal Website Uptime - 99% uptime guarantee for online municipal services.

d. Water Supply Hours - Continuous 24x7 supply in core areas, minimum 3 hours/day in non-core areas.

5.3.4 Level of responsibility for Redressal

Asset management redressal follows a structured hierarchy based on the severity and nature of the complaint with defined timelines and escalation mechanisms such as:

1. Level 1: Ward/Zone Level Redressal (Immediate Action – 24 to 72 Hours)
2. Level 2: City-Level Redressal (Medium Complexity Issues – 3 to 7 Days)
3. Level 3: Municipal Commissioner & Standing Committees (High Complexity Issues – 1 to 3 Weeks)
4. Level 4: State Government & Urban Development Authority (Policy-Level & Legal Issues – 1 Month+)

Some examples may include:

a. Pothole repairs / minor road maintenance / Streetlight malfunctions - handled at ward/ zone level with immediate action within 24 to 72 hours

b. Major road damage / resurfacing requests / Persistent water supply disruptions / Large-scale sewer and drainage failures - handled at city level with redressal within 3-7 days

5.4 Asset Management Processes

A life-cycle approach needs to be adopted for the management of assets. An asset's life span is determined to a great extent by how the municipal body manages the assets and the conditions of treatment that the asset is exposed to. For instance, a municipality might choose to curtail spending on an asset (depending on its current usage, demand and other relevant factors), leading to its reduced life span. Similarly, it might choose to rigorously invest in the maintenance of a certain asset to avoid premature fallacies and associated costs, leading to an expanded life span. Further, if the municipal body just considers the

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up-front acquisition costs of an asset, it may reach inappropriate asset decisions, especially where various options have significantly different downstream maintenance costs.

The full life-cycle costing of the assets must be considered which includes planning, acquisition, maintenance, operation, disposal of the respective assets. This will lead to an informed and more rational way of decision-making.

5.4.1 Asset Acquisition

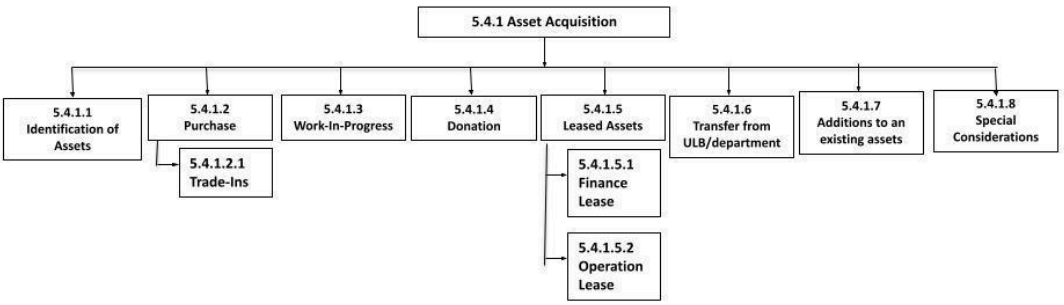


Figure 6 Asset Acquisition

Acquisition of assets is the first step in the asset management process. Due care must be taken including a proper study and adequate tendering to ensure acquiring of assets. Hence, this step accurately and timely captures records assets including relevant attributes in the ASSET MANAGEMENT. Proper recording of assets results in accurate disclosure of various types and sub-types of assets including the related finances in the book of accounts. In the case of an integrated IT solution and a digital asset register, this process gets streamlined even further.

All assets should be identified, secured and accurately recorded in the financial information management and asset management systems.

5.4.1.1 Identification of Assets

Any acquisition of an asset is preceded by the request from the concerned Section which is in need of the asset. The ULB adds an asset to its portfolio when it is considered either purchased, manufactured, donated or acquired by any other means.

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A real-time example of adopting a life-cycle approach for managing municipal assets can be seen in the maintenance of **streetlights** by the **Municipal Corporation of Delhi (MCD)**. MCD has implemented a comprehensive asset management strategy that includes regular inspections and predictive maintenance of streetlights. By rigorously investing in maintenance, such as replacing traditional bulbs with energy-efficient LED lights and using sensors to detect faults early, MCD can extend the lifespan of these assets. This proactive approach not only reduces maintenance costs but also ensures continuous lighting services, enhancing safety and quality of life for residents. For instance, if a sensor detects a malfunctioning streetlight, maintenance teams are alerted to repair it promptly, thereby avoiding extended periods of darkness and associated safety risks. This strategy optimizes operational efficiency and extends the lifespan of the streetlights, aligning with the municipality's goal of providing reliable public services.

5.4.1.2 Purchase

Purchasing is the most common way of acquiring assets in ULBs. Steps in purchasing an asset are listed under:

I. ***Identification of Asset Requirement***

a) Stakeholders Responsible are Concerned Department Head (e.g., Engineering, Health, Water Supply, Sanitation), Ward Officers / Zonal Commissioners & Municipal Commissioner / Standing Committee

b) Activities:

- Identify the need for a new asset or replacement of an old asset.
- Conduct feasibility studies and assess budgetary constraints.
- Prepare a proposal detailing asset specifications, quantity, estimated cost, and justification.

c) Example Assets:

- Vehicles for waste collection
- Streetlights
- Water supply pumps
- Road maintenance equipment
- IT infrastructure (computers, software)

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II. Budget Approval & Fund Allocation

a) Stakeholders Responsible are Finance & Accounts Department, Municipal Commissioner & ULB Standing Committee / General Body
b) Activities:

- Check if the asset purchase is part of the Annual Budget.
- If not budgeted, seek special approval from the Finance Committee.
- Allocate funds from ULB revenue, government grants, or external funding sources (e.g., Smart City Mission, AMRUT, PPP models).

III. Procurement Method Selection

a) Stakeholders Responsible is the Procurement Department / Tender Committee
b) Methods Used:

- E-Tendering Process (for high-value assets, as per government procurement rules).
- GeM (Government e-Marketplace) – For direct purchase of approved items.
- Rate Contract Procurement – If the asset is already pre-approved under state/national rate contracts.
- Limited Quotation – For small-value assets below a certain threshold (e.g., ₹1 lakh).
- Direct Purchase – In urgent cases with approval from the Municipal Commissioner.

IV. Floating of Tender / Request for Proposal (RFP)

a) Stakeholders Responsible are ULB Tender Committee & Procurement Officer
b) Activities:

- Prepare the Request for Proposal (RFP) / Tender Document
- Publish the tender
- Allow bidders to submit proposals within a specified timeline.

V. Bid Evaluation & Vendor Selection

a) Stakeholders Responsible are Bid Evaluation Committee and Technical & Financial Experts
b) Activities:

- Evaluate bids
- Conduct a Vendor Background Check (past experience, financial stability, compliance with government norms).

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- Approve and finalize the vendor for asset supply.

VI. Purchase Order & Contract Signing

a) Stakeholders Responsible are ULB Procurement Department and Legal & Finance Teams
b) Activities:

- Issue a Purchase Order (PO) to the selected vendor
- Sign a contract

VII. Asset Delivery & Inspection

A. Stakeholders Responsible are Department Requesting the Asset and Technical Team / Quality Inspection Team
B. Activities:

- Vendor delivers the asset as per the agreed schedule.
- Conduct a physical inspection and quality check.
- Verify compliance with specifications mentioned in the contract.
- Accept the asset only if it meets the standards; else, request a replacement or rectification.

VIII. Payment Processing & Accounting

a) Stakeholders Responsible are Finance & Accounts Department and Municipal Commissioner / Chief Accounts Officer
b) Activities:

- Verify invoice, delivery proof, and inspection report.
- Process vendor payment as per agreed terms (e.g., partial payment upfront, balance after delivery).
- Record the asset in the ULB Fixed Asset Register for future tracking.

IX. Maintenance & Lifecycle Management

A. Stakeholders Responsible are Respective Asset Managing Department , IT Department (if digital asset) and Engineering / Public Works Department
B. Activities:

- Assign assets for operational use.
- Schedule periodic maintenance checks.

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- Record depreciation and lifecycle costing.
- Plan for future replacement or disposal based on asset condition.

5.4.1.2.1 Trade-ins

A **trade-in** is a process where an existing asset is exchanged for a new one, with the value of the old asset being deducted from the purchase price of the new asset. This method is commonly used in Urban Local Bodies (ULBs) to upgrade municipal assets while reducing procurement costs.

When an asset has been purchased and an item has been traded-in, it is important to record both the disposal of the asset traded-in and the purchase of the new asset. When this occurs, it is important to note on the Asset Installation Note (An Asset Installation Note is a document that records the installation details of an asset, including its location, date, technical specifications, installation team, and safety checks.) that a trade-in has occurred and that an Asset Disposal Form (An Asset Disposal Form is a document used to record the removal, sale, or decommissioning of an asset. It includes details like asset ID, reason for disposal, disposal method (sale, scrap, donation), approval signatures, and financial impact. This form ensures proper documentation, compliance, and audit tracking.) is completed for the trade-in and is attached to the Asset Installation Note.

It is also important that when an asset has been purchased after a trade-in, the relevant journal entries are completed to record the sale/disposal of the asset traded-in. Ultimately, the sale proceeds and the increase in cost of the new asset purchased must be recorded.

5.4.1.3 Work-In-Progress

When it is expected that the manufacturing process will take more than twelve months to complete (estimated total cost is greater than the monetary threshold), (A monetary threshold in asset management is the minimum value an item must have to be classified as an asset instead of an expense. Items above this threshold are tracked and depreciated, while lower-value items are expensed immediately.) recoveries against the relevant expenditure items should be made at the end of each fiscal year until the item is complete and ready for capitalisation.

This process removes the recognition of the individual expenditure items and recognises the asset in its place, i.e., the capitalisation of expenditure of an asset. By recovering the expenditure in the year incurred, the organisation avoids the costs of manufacture being expensed and perhaps not being included when the item is complete and ready for capitalisation. It is effectively work-in-progress on an asset until capitalisation. Work-in-progress recorded will not attract any depreciation charge.

5.4.1.4 Donation

Assets may be acquired by donation/gift to the ULB from an outside organisation or individual. The acceptance of a donated asset by the ULB is regarded as an addition to the

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capital of the ULB. The monetary value of donated items is recorded as 1.00/- when accepted by the ULB and the value is confirmed by the concerned officer within the section.

Immediate notification of all donations irrespective of value should be forwarded to the section maintaining the Asset Register for inclusion. The value is debited to the appropriate non-current asset account and credited to the appropriate donations/ gifts income account in the project grant nominated on the Gift, Donation and Processing Form.

In the circumstances where non-asset items are donated, a value should be assessed and recorded by journal with a debit to the appropriate expenditure account and a credit to the donation/ gifts income account (usually valued at 1.00/-).

5.4.1.5 Leased Assets

Leased assets are items under a leasing arrangement, wherein the ULB has acquired the right to use it for a period of time, in exchange for a series of payments to the legal owner. Whilst there are many types of leasing arrangements, the majority of leases can be classified either as a finance lease or an operating lease. The type of lease is important in determining the required accounting treatment in the ULB's financial function.

All leased equipment should be insured, otherwise they will not be recoverable under insurance in the event of loss.

5.4.1.5.1 Finance Leases

A finance lease transfers all the risks and benefits associated with actual ownership of the asset to the ULB. Effectively the ULB "buys" the asset over the term of the lease and incurs costs of maintenance, obsolescence and gains/losses in the value of the asset.

If the value of the finance lease equals or exceeds the monetary thresholds, the leased items should be recognised as both an asset and a liability in the ULB's financial system. The initial value of the lease is determined by reference to the present value of the minimum lease payments.

The relevant details of any finance lease should be forwarded to the Accounts section for determination of accounting treatment and appropriate recognition in the asset management register.

5.4.1.5.2 Operating Leases

An operating lease leaves the risks and benefits associated with the ownership of the asset with the legal owner. Effectively the ULB only "rents" the right to use the asset for a proportion of the asset's useful life. At the end of the lease period, the asset is returned to the owner who has full discretion on the future use of the asset (i.e., whether released, used or sold).

All operating lease payments are charged to the Cost Centre's project grant as an expense in the period in which they are incurred and are not recognised in the asset management system.

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5.4.1.6 Transfer from ULB's/ Department

The process by which fixed assets are transferred from one ULB to another or department within the same municipality to another. This can occur due to restructuring, reallocation of responsibilities, or when an asset is better utilized by a different department. Proper documentation and approval processes should be reflected in the asset records during such transfers, reflecting the change in ownership and responsibility within the municipal organization.

In the case of an integrated IT solution, this process becomes easy and streamlined.

5.4.1.7 Additions to an Existing Asset

Additional capital expenditure may be incurred which increases the cost/ value of existing assets. It is important that the asset management system is updated for additions to the existing assets, and the capital expenditure is appropriately recorded in the finance system as well. Such additions should not be recorded as separate assets because if the additions are also recorded as separate assets, a new barcode would be issued for each addition thus producing more than one barcode to the same asset and causing confusion.

In the case of an integrated IT system, this update of additional expenditure in the asset management system shall be automatically reflected in other relevant departments.

5.4.1.8 Special Considerations

A purchase/transfer of an asset from one section to another within the ULB is not technically an asset acquisition. The transaction is an internal transaction and not between the ULB and a party external to the ULB such as inter-section vehicle transfers When an asset transfer occurs between sections, an Asset Transfer Note (A.T.N. 02) should be completed and updated in the asset management system with the change in Section/Cost Centre and location, if necessary.

An **Asset Transfer Note** is a document to record the transfer of ownership, responsibility, or custody of an asset from one entity, department, or individual to another. It typically includes details such as the asset description, unique identification number, transfer date, parties involved, and any conditions or terms associated with the transfer.

Where a Cost Centre "purchases" existing ULB's assets from another Cost Centre, the transfer of funds should be made via a Form with the transaction recorded in the correct account code in the Ledger. As there is no new asset purchase for the ULB, it is essential that the same account code be used on both sides of the transaction.

Where the Cost Centre ''purchases'' an item for another Cost Centre which need not be recorded in the asset management system (i.e., below the monetary threshold), Accounts section (Accounting Assistant – Asset Register) do not need to be advised of the transfer. However, the transaction should be recorded to the correct non-asset account code range ensuring that the same code is used on both sides of the transaction.

After acquisition of asset, the condition and performance of the asset must be ascertained.

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5.4.2 Verification of Assets

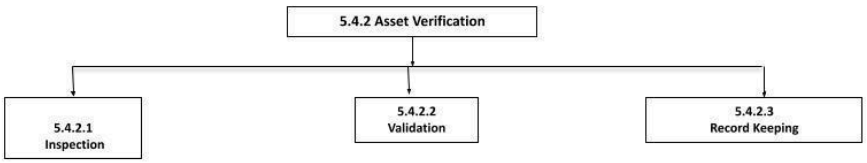


Figure 7 Verification of Assets

The verification of assets is an important process in asset management. By convention, its scope has to be limited to inspection of assets, where it is applicable and collection of information about the assets on an examination of documentary and other evidence so as to confirm:

a) that the assets are in existence on the date of a Balance Sheet;

b) that the assets had been acquired for the purpose of the business and under proper authority;

c) that the right of ownership of the assets vests in or belongs to the ULB;

d) that they had been correctly valued having regard to their physical condition; and

e) that their values are correctly disclosed in the Balance Sheet.

The verification of assets is primarily the responsibility of the sections in which the assets have been installed/ procured, since the officials of the section are expected to have a more detailed knowledge of the assets in regards to the location, condition, etc., than that which an outsider might be able to acquire on their inspection.

5.4.2.1 Inspection

Inspection is a systematic process of physically examining municipal assets to assess their condition, location, usability, and compliance with municipal standards. It involves physically checking whether assets are present as recorded, ensuring they are in operational condition, and identifying any need for maintenance, repair, or replacement. Inspections can be scheduled periodically or conducted as part of an audit or verification process.

5.4.2.2 Validation

Validation is the process of confirming that asset records are accurate and that the asset values reflect their true worth in financial reporting and management. The primary focus is to ensure that the data related to assets—such as valuation, ownership, and compliance with accounting standards—is correct and reliable.

This involves cross-checking physical inspections (if necessary), financial records, purchase documents, and asset registers to eliminate errors, fraud, or misstatements. In case there are many assets, sample validation may be done through a random sampling method. In an

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integrated IT solution, geo-location of the assets should be a mandatory attribute to facilitate optimal resource maintenance and utilization.

5.4.2.3 Record Keeping

Record Keeping is the systematic documentation, storage, and maintenance of all information related to municipal assets, including acquisition, usage, condition, maintenance history, and disposal. Proper record-keeping ensures accuracy, compliance, and accountability in asset management. It also aids in financial planning, budgeting, and regulatory reporting. Records can be maintained manually or through asset management software, and they must be periodically reviewed to ensure they remain up to date.

In the case of an integrated IT system, digital records are maintained to facilitate a common digital registry across all departments.

5.4.3 Asset Maintenance

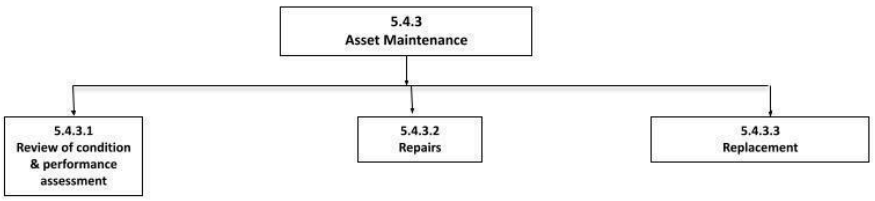


Figure 8 Asset Maintenance

After acquisition and verification, it is the responsibility of the concerned section to take necessary steps to maintain the asset for deriving the intended benefits. Each department should prepare a maintenance schedule for its assets (based on type) and allocate budget for routine upkeep and minor repairs, to prevent premature deterioration.

5.4.3.1 Review of condition & Performance Assessment

This refers to the systematic evaluation of municipal assets to assess their physical condition and operational efficiency. It helps municipalities identify deterioration, potential failures, and required maintenance actions to ensure optimal asset performance and longevity.

5.4.3.2 Repairs

Repairs involve restoring municipal assets, such as roads, buildings, and public utilities, to their functional state by addressing damages or minor wear and tear. Regular repairs help prevent further degradation and maintain asset efficiency without significantly altering their original structure (NMAM).

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5.4.3.2.1 Replacement

Replacement refers to substituting non-functional, obsolete, or irreparable municipal assets with new ones to maintain service continuity. In line with NMAM provisions, asset replacement is undertaken when repairs are no longer viable or cost-effective, ensuring sustainable infrastructure management.

5.4.4 Asset Valuation/Revaluation

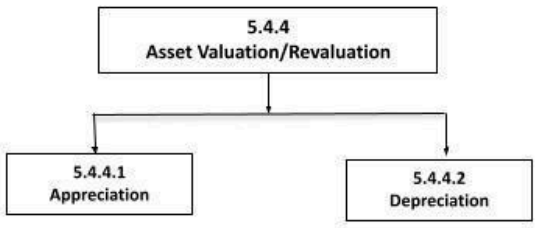


Figure 9 Asset Valuation/ Revaluation

Fixed Assets are acquired with the objective of earning revenue in the ordinary course of business; these are intended to be used and not sold (e.g., land, building, machinery, etc.). Almost all fixed assets (except land and good will) suffer depletion or exhaustion due to efflux of time and their use or exploitation.

Hence, fixed assets are generally included at their cost less depreciation. Cost includes all the expenditure necessary to bring the assets into existence and to put them in working condition. It would be incorrect to value them at their sale price since these are not intended to be sold. For the very same reason, the fluctuations in the market values are ignored even when they are permanent. If these were taken into account, it would result in under- or over-allocation of their cost. Periodic Revaluation can be done for land and buildings.

While valuing fixed assets, the provisions of the Accounting Standard-10 on Fixed Assets have to be applied wherever necessary which states the following:

"The cost of an item of fixed asset comprises its purchase price, including import duties and other non-refundable taxes or levies and any directly attributable cost of bringing the asset to its working condition for its intended use. Any trade discounts and rebates are deducted in arriving at the purchase price."

The standard percentage allocations for depreciation, appreciation, and disposal for different asset categories, as mentioned in the National Municipal Accounting Manual (NMAM) guidelines are mentioned below: -

Asset Category	Depreciation Rate (% per year)	Appreciation (% on Improvement)	Disposal (% of Original Value)
Buildings	2%–5%	5%–30%	0%–20%

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Roads and Infrastructure	2%–3%	5%–10%	0%–10%
Vehicles	10%–20%	5%–15%	0%–10%
Equipment	5%–15%	5%–25%	0%–15%
Streetlights	3%–5%	5%–10%	0%–5%
Parks and Public Spaces	3%–5%	5%–20%	0%–10%
Water Supply Infrastructure	2%–4%	5%–15%	0%–10%
IT and Digital Assets	15%–25%	5%–20%	0%–5%

5.4.4.1 Appreciation

These are assets whose value increases over time due to factors like market demand, scarcity, or infrastructural development such as:

a) Land (as its value generally appreciates over time)
b) Heritage buildings or monuments (due to historical significance)

Appreciating assets are usually not subject to depreciation but are accounted for in the municipal financial records at their acquisition cost, with possible revaluation based on guidelines.

5.4.4.2 Depreciation

These are assets that lose value over time due to wear and tear, obsolescence, or usage such as:

a) Buildings (except heritage structures)
b) Roads, bridges, and drainage systems
c) Vehicles, machinery, and IT equipment

Depreciating assets are accounted for in financial statements with systematic depreciation, ensuring an accurate representation of asset value and municipal financial health. In an integrated IT system, the depreciation is factored in the master data management system (MDMS) which will automate the valuation of the asset.

This classification helps in effective asset management, budgeting, and financial planning for municipalities.

The calculation of Depreciation of an asset is in accordance with the NMAM

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5.4.5 Asset Disposal

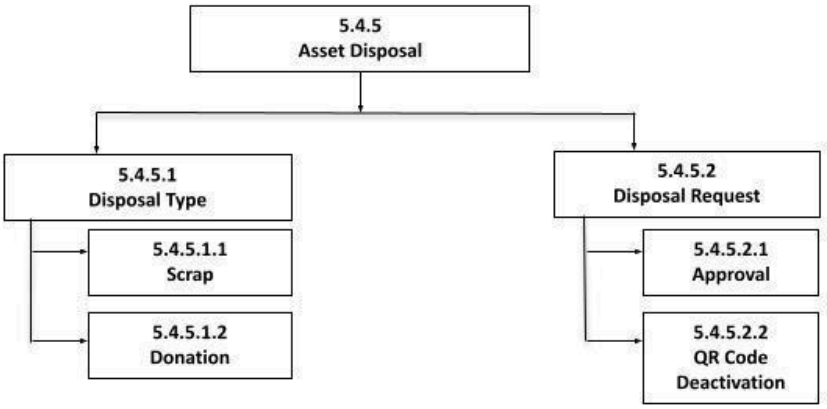


Figure 10 Asset Disposal

Asset disposal is this the final stage in the asset life cycle. Its proper planning and management is therefore an integral part of the Asset Management process.

Assets are of value to municipalities only if they continue to cost-effectively support the delivery of the ULB services. Once they no longer play this role, they should be responsible and sustainably disposed.

Alternatives to disposal include options such as enhancing utilization by repurposing the asset for a different function or program, leasing surplus capacity to other entities, or transferring them to another institution (Kerala Asset Management Manual). This section details the disposal process. Disposals should be conducted with utmost care and diligence, ensuring that all transactions are thoroughly planned and executed in accordance with established protocols.

5.4.5.1 Disposal Type

Different methods can be adopted by a municipality to remove a fixed asset from its asset register when it's no longer useful or needed. . The choice of disposal type depends on the asset's condition, market value, and any relevant regulations.

Municipalities should select disposal methods that optimize value or public benefit. For instance, items with residual market value may be best suited for auction, while those that are only viable for materials should be scrapped or recycled. Additionally, items that can still fulfill a community purpose should be considered for donation.

All asset disposals must be carried out with transparency and proper authorization to ensure accountability and prevent misuse. For significant assets, approval from the municipal council or governing board may be required. Additionally, disposal outcomes should be thoroughly documented and maintained in an auditable manner.

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5.4.5.1.1 Auction

This disposal method involves selling the asset to the highest bidder through a public auction process, aiming to recover the maximum possible value. This is often used for assets that still have significant market value.

5.4.5.1.2 Scrap

When an asset has no further use or market value in its current form, it can be disposed of as scrap. This involves dismantling the asset and selling its component materials (e.g., metal, wood) for recycling, thus recovering some residual value.

5.4.5.1.3 Donation

A municipality might choose to donate a fixed asset to a non-profit organization, charity, or another government entity. This is often done for assets that are still functional but no longer needed by the municipality, allowing them to benefit the community in another way.

5.4.5.2 Disposal Request

Before any asset can be disposed of, a formal disposal request must be submitted, outlining the reasons for disposal, the proposed disposal method, and any relevant documentation. This request initiates the disposal process and ensures proper authorization.

5.4.5.2.1 Approval

The disposal request is then subject to an approval process, where relevant authorities (e.g., department heads, finance officers) review the request and ensure it complies with all applicable regulations and policies.

5.4.5.2.2 QR Code Deactivation

Once an asset has been disposed of, its associated QR code (or other asset tag) is deactivated in the asset management system. This removes the asset from the active register and prevents it from being mistakenly tracked or accounted for in the future.

5.5 Reports and Key Performance Indicators (KPIs)

Reports and KPIs related to Assets are documents that present information in an organized format for various stakeholders after thorough investigation or consideration by an appointed person or body at the ULB for proper asset register.

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5.5.1 Reports

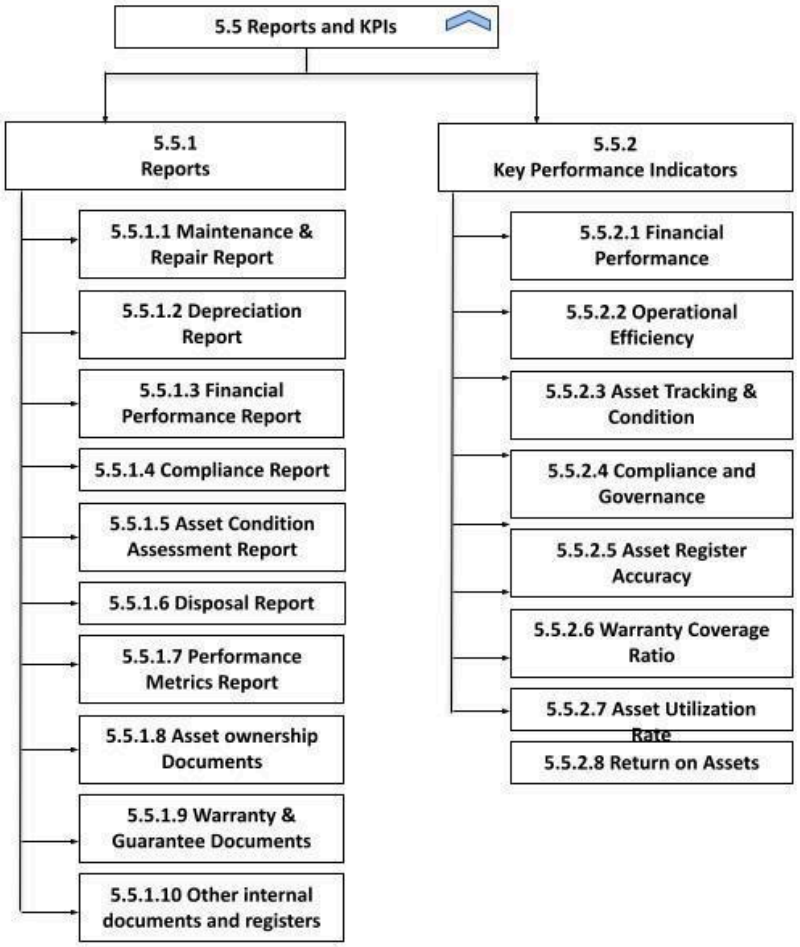


Figure 11 Reports & KPI's

Reports in asset management provide structured documentation and insights related to asset tracking, ownership, and performance. They help organizations maintain accurate records, ensure compliance, and improve decision-making. Standard reporting intervals (e.g., monthly, quarterly, annually) including designating specific responsibilities to designated municipality departments or officers should be established. Utilizing integrated IT solutions shall streamline this process.

This shall ensure compliance with existing regulatory guidelines and enhance the asset management process within the municipality.

5.5.1.1 Maintenance and Repair Report

- Purpose: Summarizes all maintenance activities performed on municipal assets over a specified period, including routine inspections and emergency repairs.
- Importance: Helps in assessing the condition of assets and planning future maintenance schedules to prevent asset deterioration.

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5.5.1.2 Depreciation Report

- Purpose: Details the depreciation of assets over time, including methods used for calculation and total depreciation expense for each asset.
- Importance: Crucial for financial reporting, as it impacts the balance sheet and helps in understanding the remaining useful life of assets.

5.5.1.3 Financial Performance Report

- Purpose: Analyzes the financial performance of municipal assets, including revenue generated from asset usage (e.g., rental income from municipal properties).
- Importance: Aids in evaluating the return on investment for municipal assets and informs budgetary decisions.

5.5.1.4 Compliance Report

- Purpose: Reviews adherence to relevant regulations and standards related to asset management practices.
- Importance: Ensures that ULBs comply with legal requirements and best practices in managing public resources.

5.5.1.5 Asset Condition Assessment Report

- Purpose: Evaluates the physical condition of municipal assets through inspections and assessments.
- Importance: Identifies assets requiring immediate attention or replacement, helping prioritize maintenance efforts.

5.5.1.6 Disposal Report

- Purpose: Documents the disposal of municipal assets, including reasons for disposal, methods used (e.g., auction or recycling), and any revenue generated from disposals.
- Importance: Ensures transparency in the disposal process and helps track the lifecycle of assets.

5.5.1.7 Performance Metrics Report

- Purpose: Summarizes key performance indicators (KPIs) related to asset management, such as service levels achieved, response times for maintenance requests, and user satisfaction ratings.
- Importance: Provides insights into the effectiveness of asset management strategies and identifies areas for improvement.

5.5.1.8 Asset Ownership Documents

Legal documents that establish the municipality's ownership of a particular fixed asset. This can include deeds for land and buildings, titles for vehicles, contracts of sale for equipment, or any other document that proves the municipality has the legal right to possess and control

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the asset. Accurate and well-maintained ownership documents are crucial for legal compliance, insurance purposes, and demonstrating control over public resources.

The report should outline the process for consolidating asset register data from all divisions at the end of each financial year into an Annual Asset Management Report, prepared by the finance department. The report should include key sections such as: an Executive Summary, a Department-wise Asset Inventory and Valuation, Significant Changes and Major Asset Movements, a Maintenance and Performance Summary (highlighting underutilized assets), and Recommendations for the upcoming year, including proposals for asset disposal or replacement and budget allocations for new assets.

The report should detail the procedure for consolidating asset register data from all divisions at the close of each financial year into an Annual Asset Management Report, which will be prepared by the finance department. This report is expected to encompass essential sections, including an Executive Summary, a Department-wise Asset Inventory and Valuation, a summary of Significant Changes and Major Asset Movements, a Maintenance and Performance Overview (identifying any underutilized assets), and Recommendations for the forthcoming year, which should address potential asset disposals or replacements and budgetary requirements for new acquisitions.

5.5.1.9 Warranty & Guarantee Information

Documents related to warranties and guarantees provided by manufacturers or suppliers for fixed assets. These documents specify the terms and conditions under which the manufacturer or supplier will repair or replace the asset if it malfunctions or fails within a specified period. Keeping track of warranty information helps the municipality minimize repair costs and maximize the asset's lifespan by taking advantage of available coverage.

5.5.1.10 Other Internal Documents & Registers

Category that encompasses a wide range of internal records related to fixed asset management. Examples include asset registers (a comprehensive list of all fixed assets), maintenance logs (records of repairs and maintenance activities), inspection reports, insurance policies, and disposal records. These documents are essential for tracking asset performance, planning maintenance, making informed decisions about asset replacement, and ensuring compliance with internal policies and external regulations.

5.5.2 KPIs

KPIs are measurable metrics used to evaluate the efficiency, effectiveness, and overall performance of asset management practices.

5.5.2.1 Financial Performance

KPI	Data Points	Formula	Purpose	Core/Advanced/Suggestive
Valuated Assets Percentage				

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Reevaluated Assets Percentage	Number of revalued assets, Total assets registered	(Number of Revalued Assets / Total Assets Registered) * 100	Ensures asset value accuracy.	Core
Annual Depreciation Rate	Total depreciation in a year, Total asset value	(Total Depreciation in a Year / Total Asset Value) * 100	Impacts financial reporting.	Core
Annual Maintenance Expenditure	Total annual maintenance expenses of ULB	Total Maintenance Expenses	Helps in financial planning.	Core
Planned vs Actual Maintenance Ratio	Total allocated asset maintenance budget, Total Annual asset maintenance cost	(Planned Maintenance budget / Total Maintenance Budget) * 100	Helps in proactive financial planning for asset maintenance and understanding allocation utilisation	Suggestive
Capital Expenditure on New Assets	Total annual CapEx on Assets by ULB	Total Budget for New Assets	Reflects investment in infrastructure growth.	Core
Capital Expenditure as % of Total Budget	Total CapEx on Assets, Total Annual Budget of ULB	(Total CapEx on Assets / Total Annual Budget) * 100	Helps to track whether ULBs allocate sufficient funding for asset expansion and modernization.	Suggestive
Average Maintenance Cost per Asset		Total Maintenance Cost / Number of Assets Maintained	Benchmarks cost efficiency.	

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5.5.2.2 Operational Efficiency

KPI	Data Points	Formula	Purpose	Core/Advanced/ Suggestive
Utilization Rate of Assets	Total Number of Actively Used Assets in an year,Total Assets Registered in an year	(Number of Actively Used Assets / Total Assets Registered) * 100	Assesses efficiency of asset use.	

5.5.2.3 Compliance & Governance

KPI	Data Points	Formula	Purpose	Core/Advanced/Suggestive
Total Registered Assets		Number of registered assets in system	Reflects completeness of asset records.	

5.5.2.4 Asset Tracking & Condition

KPI	Data Points	Formula	Purpose	Core/Advanced/Suggestive
Digital Asset Inventory		(Number of Digitized Assets / Total Assets registered) * 100	Indicates progress in asset digitization.	
Percentage of Assets in Good Condition		(Number of Assets in Good Condition / Total Assets registered) * 100	Critical for maintenance planning.	
Percentage of Assets Needing Repair		(Number of Assets Needing Repair / Total Assets registered) * 100	Helps prioritize asset maintenance.	
Number of Assets Disposed		(Number of Assets Disposed / Total Assets Registered) * 100	Tracks asset lifecycle and disposal.	

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Percentage of Assets Mapped on GIS		(Number of Geo-Tagged Assets / Total Assets registered) * 100	Enhances spatial tracking and planning.	
Asset Category		Number of Asset Categories	Reflects total categories of assets registered	

5.5.2.5 Asset Register Accuracy

Asset register accuracy is defined / represented as the percentage of assets recorded in the asset management system that matches the actual physical register. High accuracy ensures proper tracking and reduces discrepancies in asset utilization.

5.5.2.6 Warranty Coverage Ratio

The proportion of assets under active warranty compared to the total assets. This metric helps organizations understand their risk exposure related to repair and replacement costs.

5.5.2.7 Asset Utilization Rate

The extent to which assets are actively used versus their total availability. A high utilization rate indicates efficient use of resources, while a low rate may suggest asset redundancy or misallocation.

5.5.2.8 Document Completeness rate

The percentage of assets with complete and up-to-date documentation, including ownership records, maintenance logs, and compliance certificates. This ensures regulatory adherence and efficient asset tracking.

5.5.2.9 Warranty Claim Processing Time

The average time taken to process and resolve warranty claims for assets. A shorter processing time improves maintenance efficiency and reduces downtime.

5.5.2.10 Ownership Transfer Efficiency

The effectiveness of transferring asset ownership between departments, locations, or stakeholders. It measures how quickly and accurately ownership changes are recorded and processed.

5.5.2.11 Lifecycle cost per asset

The total cost of owning, operating, maintaining, and disposing of an asset over its entire lifecycle. This includes acquisition costs, maintenance expenses, depreciation, and disposal costs, helping in cost-effective decision-making.

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5.5.2.12 Return on Assets (ROA)

A financial metric that measures the profitability generated from asset investments. It is calculated as:

ROA = (Net Income / Total Assets) × 100

A higher ROA indicates better utilization of assets for generating revenue.

5.5.2.13 Mean Time to Repair (MTTR)

The average time required to diagnose, repair, and restore a failed asset to operational condition. Lower MTTR values indicate faster repair processes and improved asset availability.

5.5.2.14 Planned maintenance percentage

The proportion of total maintenance activities that were scheduled in advance rather than being reactive. A high planned maintenance percentage indicates proactive asset management, reducing unexpected breakdowns.

5.5.2.15 Compliance Rate

The percentage of assets that meet regulatory, safety, and operational compliance requirements. A high compliance rate ensures adherence to industry standards and legal obligations.

Annex A: Sample Parameters and Specifications

Asset Table

Field Name	Data Type	Description	Mandatory (Yes/No)
Asset ID	VARCHAR (20)	Unique identifier for the asset	yes
Name	TEXT	Asset name (e.g., Main Street Road)	yes
Category	VARCHAR (50)	Type of asset (e.g., Road, Park, Bridge)	yes
Sub Category	VARCHAR (50)	Specific classification (e.g., Concrete Bridge)	No
Location ID	VARCHAR (20)	Foreign key linking to Location table	Yes
Ownership ID	VARCHAR (20)	Foreign key linking to Ownership table	No
Acquisition Date	DATE	Date when the asset was acquired	No
Status	ENUM ('Active', 'Under Maintenance', 'Decommissioned')	Current asset status	No

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Location Table

Field Name	Data Type	Description	Mandatory (Yes/No)
Location ID	VARCHAR (20)	Unique identifier for location	Yes
Address	TEXT	Street address or landmark	Yes
GPS Coordinates	TEXT	Latitude & Longitude	Yes
City Zone	VARCHAR (50)	Urban zone classification	No

Attribute Name	Locational Specification	Data Type	Mandatory (Yes/No)
Address	House No, Building Name, Plot/Survey No, Street Name, Locality, Zone/Ward, City/Town, District, Region, State, Country, Pin code	Varchar (256)	No
Geo Location	Latitude, Longitude, Polygon	Numeric (9,6)	Yes
Other evidences	This can include Geo tagged images of Property, DDN, QR codes etc.		No

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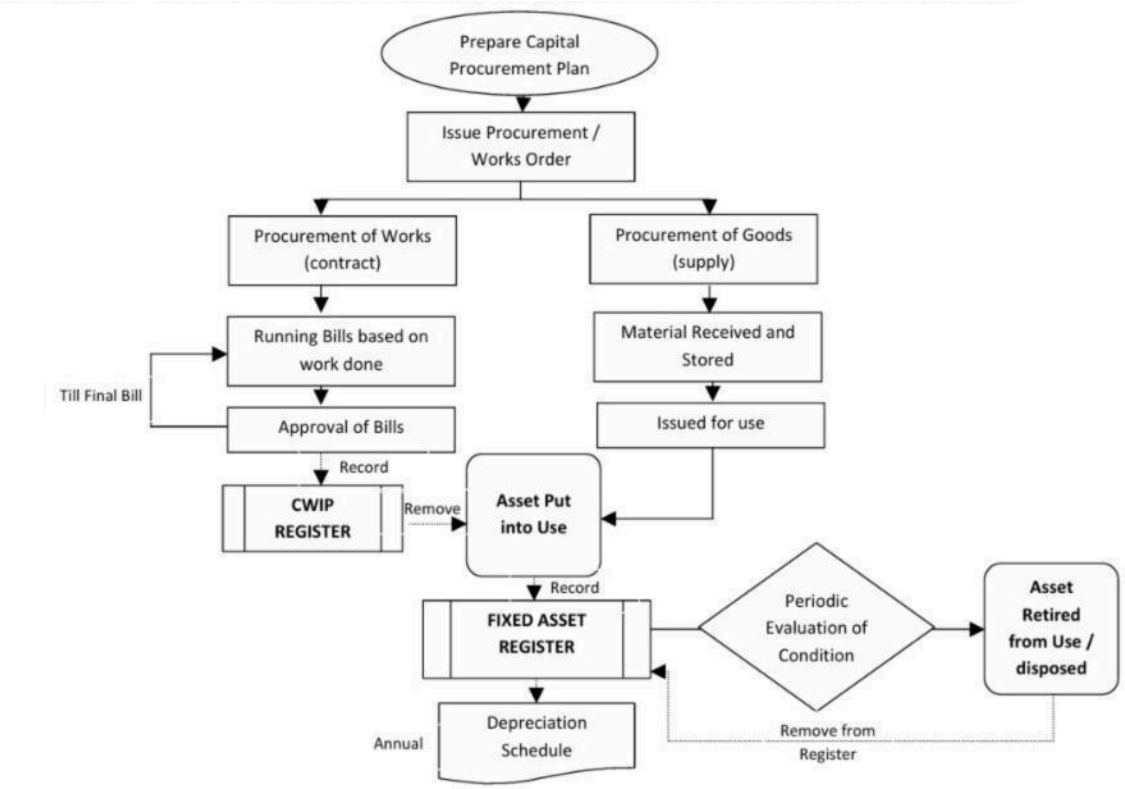
Address: The address of the property provides the particulars of the place as per the administrative boundaries or norms defined by the local governing body.

Geo Location: Geolocation is the identification or estimation of the real-world geographic location of property. This refers to the latitude and longitude coordinates of a particular location where property is located.

Digital Numbers: Property Numbers defined using scientific methods and often assigned with QR code for traceability and usability.

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Annex B: Flowchart for maintenance of fixed asset REGISTER (Asset Valuation manual)



Annex C: Flowchart for maintenance of fixed asset REGISTER (Asset Valuation manual) (Inspection of Assets)

Manual for Asset Management in Local Self Government Institutions of Kerala gives the below scale to assess asset physical condition for roads:

Excellent : No potholes. No cracks requiring filling. Complies with engineering standards.

Good : Some potholes. Minimal crack filling required. Complies with engineering standards.

Fair : Evidence of deterioration. Has numerous potholes and regular crack filling required.

Poor : Pavement deteriorating. Extensive potholes and cracks. Joint failures. Needs resurfacing.

Failing : Road bed and surface needs replacing

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Annex D: Steps of INSPECTION (Inspection of Assets)

The steps of an inspection are listed below -

a) **Planning the Inspection** – Define the scope, schedule, and assign concerned personnel for the inspection.

b) **On-Site Examination –** Physically visit the location of assets and check their presence, condition, and usage.

c) **Comparison with Records** – Match the physical assets against register records, financial registers, or asset management systems.

d) **Identifying Discrepancies** – Note any missing, damaged, or underutilized assets and investigate the reasons.

e) **Reporting Findings** – Document the results, including observations, photographs, and recommendations for corrective actions.

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