Subject: Infrastructure Asset Management Policy	Document #: 001
Approved: Eric Dayton	Revision #: Effective Date: May 24, 2016 Page 1 / 7

Purpose

The purpose of this policy is to govern the practice of infrastructure asset management within the Street and Drainage Division and ensure continued practices throughout the life of the asset networks. This policy has three key objectives:

- Document the Division's commitment to infrastructure asset management and ensure consistency in practice.
- Outline the guiding principles and processes of infrastructure asset management.
- Establish a framework for infrastructure asset management which will enable the development and revision of an infrastructure asset management strategy, objectives, and action plans.

This policy also intends to allow business units the latitude to develop, implement, operate and continually improve asset management best practices for their particular asset networks and businesses within a common framework.

Standard Operating Procedures (SOP) for infrastructure asset management have previously been developed, and this overarching policy does not intend to diminish those standards, but does intend to align division practices and ensure best management of all divisional assets.

Scope

This policy applies to all Street and Drainage Division employees with special focus on those groups or business units that own and operate tangible asset networks in the delivery of services to the citizens of the City of Houston.

Definitions

The following terms are used in this document.

Term	Definition
Infrastructure Asset Management	A systematic and coordinated management of public infrastructure networks such as streets, bridges, storm drainage lines, drainage ditches, detention basins, and other capital

	assets where the system as a whole is intended to be maintained indefinitely to a specified level of service through planned repair, rehabilitation, and replacement of its components. The overall objective of asset management is to optimize service delivery with minimized investment over the entire functional life of the asset.
Infrastructure Asset	Any asset which is a long-lived capital asset that is operated as part of a system or network.
Infrastructure Asset Network	A set of infrastructure assets that behave as a system to deliver a required business function or service.
Asset Life Cycle	The time interval that begins with the identification of the need for an asset and ends with the decommissioning of the asset.
Asset Management Plan	A planning document that details specific activities and resources, responsibilities, and timelines for implementing asset specific strategies and objectives.
Asset Strategy	Long-term optimized approach to management of the assets.

References

Reference	Title
1	Standard Operating Procedure: Infrastructure Inventory Policy – Storm Water Maintenance Branch
2	Standard Operating Procedure: Pavement Management – Street and Bridge Maintenance Branch
3	Standard Operating Procedure: Transportation Planning – Street and Bridge Maintenance Branch
4	Capital Improvement Plan Process Manual for Infrastructure Programs for M – Storm Drainage and N – Street and Traffic Control

Procedure Name

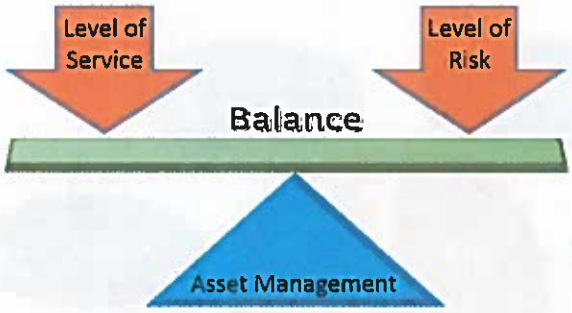
1. **Ownership**

   Street and Drainage Division is an operational division charged with ownership and operation, in behalf of the citizens of the City of Houston, for the following asset networks:

   - Streets and Roads
   - Bridges
   - Drainage Ditches (road side and off-road)

- Storm Gravity Mains (underground pipes and conduits), including inlets and manholes.
- Detention Basins

2. Key Principles



The goal of asset management is to balance targeted service performance and acceptable levels of risk while maximizing the asset value over the asset life cycle through optimization of total operations and maintenance expenditures plus capital investments.

To accomplish this goal, the following principles should be adhered to:

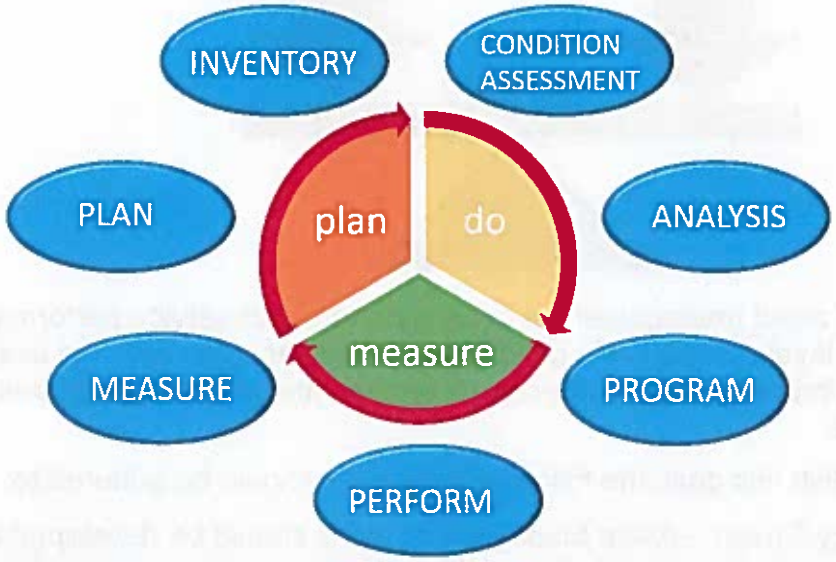
- Policy-Driven – Asset Management plans should be developed for each business unit and include specific objectives for each asset class within their responsibility. The objectives should reflect desired system condition and level of service and address the asset for each stage of its life cycle;
- Performance-Based – Plan objectives should translate into system key performance measures that are used both day-to-day and long-term strategic management;
- Knowledge-Based Decisions – Setting priorities and allocating resources within and across different types of investments (i.e. preventive maintenance, rehabilitation, capacity expansion, etc.) is based on availability of good data which allows analysis of how different allocations will impact achievement of objectives. Data on the operation, performance and condition of assets should be collected and kept current and accurate.
- Accountability and Feedback – Performance results should be monitored and reported for both impacts and effectiveness. Actual performance and resulting outcomes of programmed allocations may influence future goals and objectives, as well as resource allocation and utilization decisions.
- Continuous Improvement – Asset management plans should be reviewed as part of the capital planning and budgeting process and updated based on new information, compliance and performance monitoring.

3. Establishment of an Infrastructure Asset Management System

A system should be developed, operated, monitored, and continually improved for management of the assets. The system should allow for keeping inventory, documenting condition, determining service levels, gap analysis, and projecting

resource needs based on alternative methods for achieving a desired set of objectives. This could be one divisional system or separate systems for business units and may not necessarily be a technological system, but may be a business model approach providing practices of an effective asset management program.

4. Practices



To operate and maintain these networks under an asset management framework, the system should be aligned to the PLAN-DO-MEASURE cycle and include the following practices:

1. Inventory – Develop and maintain an accurate inventory of all asset components making up the asset network. Have a defined process for adding acquisitions and deactivating decommissioned assets (without deleting from the overall inventory). Include appropriate asset attributes such as unique id, age, size, limits, etc.
2. Condition Assessment – For each identified asset class, establish a frequency and method of inspection and data to be collected. Data should always be related to the service being provided by the asset or asset network and should be appropriate for use to determine need and necessary actions to maintain at the desired level of service.
3. Analysis – Expected or desired service levels should be determined for each asset class or network. Using current condition data, a GAP analysis should be performed to compare the desired service level and the evaluated actual service level (or condition) of the asset set. Then methods for "closing the gap" should be examined and evaluated. These might include operating and maintenance strategies or more extensive rehabilitation strategies. The best method should be selected considering both the initial and long-term costs and likely impacts on established performance measures.
4. Program – When a method for bringing the current service level in line with the desired service level has been determined, resource needs should be defined

and requested in the budget. Resources needs should be defendable based on service productivity standards. Schedules for work delivery should be established.

5. Perform – Planned work should be performed according to budget and timeline.
6. Measure – Chosen method outcomes are determined and performance results are reported for both impact and effectiveness. This may include executive dashboards with performance baselines and targets.
7. Plan – This phase occurs at the end of the cycle and beginning of the next cycle. The ability to forecast where, when, and how infrastructure investments should occur is critical to the life time performance reliability of the asset system. Understanding the total need to keep the asset network at a desired service level and deciding how to best invest limited operating and maintenance dollars requires determination of overall success of the planned programs and future requirements. It also requires an understanding of associated costs and risks with implementing or deferring system treatments, repairs, or improvements. At a minimum the planning phase should work to:
    - Identify short and long term strategic objectives.
    - Prioritize projects over a five to ten year period based on strategic objectives.
    - Forecast short term and long term infrastructure-funding requirements.
    - Forecast capital renewal and replacement costs over a ten to fifteen year period.

5. Development of Asset Management Plan

A five year Infrastructure Asset Management Plan should be developed and maintained for the Division, whether one plan encompassing all Divisional assets or separate business unit plans aligned with the units' responsibilities. This asset management plan at the minimum should include the following:

- Asset System Description
- Standard of Service Definition
- Current Asset Performance (or level of service)
- Planned Actions (objectives)
- Responsibilities
- Potential Improvements (expected outcomes)

Related Standard Operating Procedures

1. Standard Operating Procedure: Infrastructure Inventory Policy – Storm Water Maintenance Branch
2. Standard Operating Procedure: Pavement Management – Street and Bridge Maintenance Branch
3. Standard Operating Procedure: Transportation Planning – Street and Bridge Maintenance Branch

Compliance

Adherence to the above is mandatory. Any employee who violates this policy may be subject to corrective action.

Attachments

Attachments	Title
N/A	

Revision History

Rev.	Revision Date	Modified by	Description
01	dd/mm/yyyy	Name	N/A