

PUBLIC WORKS DEPARTMENT

Engineering Division

Policy Number	Title	Date of Issuance or Revision	Author
PW.SW.03	Stormwater Level of Service	February 27, 2018	L. Wells

CONTENTS

- I. Purpose
- II. Applicability/Scope
- III. Summary
- IV. Definitions
- V. Roles/Responsibilities
- VI. Guidelines/Practices
- VII. References
- VIII. Revision History

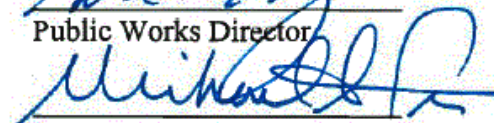
APPROVALS



City Manager



Public Works Director



City Attorney



Engineering Services Manager

I. Purpose

The City of Greenville owns, operates, and maintains stormwater conveyance systems (e.g., pipes, ditches, and inlets) within the City limits. In general, the City only owns, operates, and maintains the stormwater system within City right of way, properly dedicated easements, or on City-owned property (See the Service Boundary Policy for a description of the full extents of the system). The City desires to operate and maintain these systems in as efficient a manner as possible to provide the citizens of the City with a stormwater program that meets the expectations of City leadership and citizenry.

This document has been developed in keeping with the City's Asset Management Policy (PW.SW.01) and the City of Greenville Stormwater Ordinance.

II. Applicability/Scope

This policy supports Public Works Engineering and Operations staff in making maintenance and capital improvement project decisions related to the stormwater system. For additional guidance, refer to the Asset Management Strategy document and associated standard operating procedures.

III. Summary

This policy addresses the strategic and tactical levels of service the City desires to achieve in relation to stormwater. The strategic level of service goal focuses on the stormwater program as a whole as defined by the stormwater ordinance to include citizen impacts, regulatory drivers, and environmental concerns of the City. The tactical level of service identifies the infrastructure goals for the maintenance, repair, rehabilitation, and replacement of the system components.

IV. Definitions

For the purposes of this policy, definitions of stormwater system components are consistent with definitions being used in other City planning documents and with the Asset Management Program Policy (PW.SW.01).

Asset Classes: A grouping of assets of a similar nature and use. The City has defined six asset classes for the stormwater program. These asset classes include: 1) Pipe systems, 2) Culverts, 3) Inlets/Junction Boxes, 4) Ditches, 5) Streams, and 6) Structural Control Measures. Curbs and gutters and driveway culverts are considered a minor part of the system and are not defined as city "assets".

Level of Service: A measure of service quality for a particular activity that defines the frequency and type of action desired to maintain operation of the stormwater conveyance system at an acceptable level. Level of service is composed of two measures of service quality; 1) a strategic measure and 2) a tactical level. The strategic level of service goal is focused on the stormwater program as a whole as defined by the stormwater ordinance to include citizen needs, regulatory drivers, and environmental concerns of the City. The tactical level of service identifies the infrastructure goals for the maintenance, repair, rehabilitation, and replacement of the system components.

Stormwater Assets: Physical assets owned, operated, and maintained by the City for the purpose of storing, conveying, or treating stormwater runoff. These assets include pipes, culverts, ditches, inlets and junction boxes, and stormwater control measures.

V. Roles/Responsibilities

This policy is intended to provide guidance for the Public Works Director and those designated by the Public Works Director (i.e. Engineering Services Manager) to make management decisions regarding what type of corrective action to take on the system (e.g., repair or replace).

Those implementing this policy should have experience in engineering, construction, and operations of stormwater drainage systems as well as an understanding of the City's regulatory programs, easement, and right of way requirements.

VI. Guidelines and Practices

This policy has been developed to help guide infrastructure system decisions as well as to assist in determining annual operation, maintenance, and Capital Improvement Project (CIP) budgets. Levels of Service are outlined according to strategic (citizen/customer) and tactical (asset unit) levels.

Strategic Level of Service

The strategic level of service goals for the stormwater program are based upon the purpose statements contained in the stormwater ordinance and are defined by the following categories and measures, which are aspirational in nature and do not bind the City to any particular course or action:

1. Citizen safety and welfare
 - a. All pipes, at a minimum, convey the ten-year design storm under full flow conditions.
 - b. For collector and arterial roadway classifications, the system, whether pipe or bridge, contains and conveys the peak runoff from the 25 year design storm.
 - c. All critical facilities are accessible during 500 year event.
2. Flood hazard improvements and flood damage reduction
 - a. All insurable structures are removed from 100 year floodway.
 - b. All insurable structures are a minimum of two feet above base flood elevation (BFE).
 - c. No repetitive losses.
 - d. No increase in BFE due to new development.
3. Natural resource protection
 - a. Minimize sources of pollutants in runoff from City owned property.
 - b. Maintain or reduce current level of pollutants in stormwater runoff from existing development.
 - c. Maintain or reduce existing pollutant loading from new development.
 - d. Maintain the integrity of stream channels to support biological functions, as well as for drainage.
 - e. Limit "closed" stream segments.
4. Fiscal and regulatory responsibility
 - a. Maintain or improve CRS rating.

- b. Maintain good standing in NFIP.
- c. Create no new impairments due to City runoff.
- d. Comply with State Municipal Small Storm Sewer System (MS4) permit requirements.
- e. Comply with issued Total Maximum Daily Load (TMDL) requirements.
- f. Comply with State Stormwater and Sediment Control Act.

Tactical Level of Service

The tactical level of service (LOS) defines the frequency and types of action desired to maintain the stormwater conveyance system and asset operation at an acceptable level. There are two levels of service: 1) Short-term LOS and 2) Desired LOS.

It should be noted that regardless of the established goals, there will always be circumstances that impact the City's ability to achieve the stated goal. Large storm events, economic downturns, loss of critical City staff, etc. all play a part in the City's ability to achieve a particular goal. The intent of each LOS is to provide direction for the program, assist in budgeting and business planning, and to create a common understanding of program expectations for staff, City leadership, and citizens.

1. Short-term Levels of Service

The Short-term LOS is established to move the City from a reactive approach to a proactive approach. The Short-term LOS uses currently available information regarding the system's likelihood of failure and consequence of failure to determine priorities and corrective actions. Therefore, the focus is to develop a comprehensive inventory and condition assessment of assets while extending the effective life of assets through repair and replacement activities.

The goal is to complete the inventory and condition assessment of assets within five years and to increase the effective life of assets prior to replacement. The Short-term LOS places an emphasis on gathering individual asset data to further refine and enhance the decision making process while achieving regulatory compliance, advancing water quality goals, and meeting citizen expectations.

2. Desired Levels of Service

The City desires to achieve a level of service that manages assets proactively and substantially extends the life of the stormwater system thereby improving the fiscal responsibility of system operations. The Desired LOS is the preferred level of service for the Stormwater 2.0 program, which is a proactive approach that will achieve regulatory compliance, water quality goals, and citizen expectations while optimizing system functionality and minimizing repair and replacement costs; however, this LOS may require additional funding and/or resources beyond the Short-term LOS to achieve

The Desired LOS is focused on using Business Risk Evaluation and Condition Assessment data to make asset management decisions. Assets will continue to be added to the inventory as constructed and condition assessments will be conducted based on an asset's previous condition and consequence of failure score.

3. Service Components

The tactical level of service is met through two primary components for any particular asset; 1) Operation and Maintenance (O&M) activities and 2) Structural activities.

O&M captures LOS categories such as:

- a. inspections;
- b. maintenance (Primarily cleaning, but also includes mowing, tree removal, and other tasks associated with routine maintenance activities of detention ponds and other similar SCMs); and
- c. repairs (minor).

Structural activities encompass the following LOS categories:

- a. rehabilitation; and
- b. replacement

Further, the distinction between repair and rehabilitation is the degree to which the asset is returned to its original condition. Rehabilitation returns the asset to its original condition or better, while repairs return the functionality of the asset.

The Public Works Operations and Engineering staff will establish the tactical level of service for each asset class to include inspection schedules, maintenance plans, rehabilitation plans and replacement plans.

VII. References

City of Greenville Ordinance (§ 19-7.2.2)

Asset Management Program Policy (PW.SW.01)

VIII. Revision History

Initial issue 02/27/2018