Metro Water Services	Subject: Downstream Development Criteria	Issue Date: 1/1/2024
Policy Type: Internal/External	Sponsor: MWS Development Services	Revision Date:

Purpose

Purpose of this policy is to establish design criteria and guidelines for all stormwater systems serving Grading Permit sites so that engineers and developers across the Metropolitan Government of Nashville and Davidson County can adequately address downstream stormwater infrastructure when conditions are not sufficient to hydraulically operate in a manner as to not adversely impact public health and safety and work in conjunction with current Stormwater Management Manual (SWMM) regulations Chapter 6.

Definitions

Analysis in this context includes both the hydrologic and hydraulic determination. Reference Metro Stormwater Management Manual Volume 2 for approved methodology.

Downstream infrastructure is defined as any stormwater conveyance that receives stormwater discharge from a Grading Permit site excluding any associated on-site or public improvements that are required stormwater management features and controls.

Sufficient capacity in this context is functionally defined as the ability for a stormwater closed pipe system to operate in a free flow (non-pressurized) condition, an open channel to flow with six (6) inches of freeboard below roadway subgrade, and/or a culvert where the headwater depth does not exceed a height greater than 1.5 feet below the edge of the shoulder of the road for the 10-year storm event. Major systems, as defined in Chapter 6.1.2, will require additional analysis of the 100-year storm event.

Site Frontage all ROW improvement(s) required for the development.

Connection Section is the distance from the site connection point (excluding site frontage) and/or point of furthest ROW improvement to the downstream feature(s).

Downstream is the distance beyond the Connection Section containing major conveyance.

Specific Policies

Developers or property owners of Grading Permit sites that:

- add stormwater infrastructure; or
- modify existing stormwater infrastructure; or
- increase stormwater volume and/or velocities and/or alter the method of discharge from their property (example: from sheet flow to direct point(s) of discharge)

Shall be required to perform a hydraulic analysis to evaluate the impact of their development upon the existing stormwater system. For sizing purposes, analysis shall be for the entire contributing drainage area to the receiving named stream(s) (MS4), or large interceptor (Combined Sewer (CSS); 72 inch or larger). The analysis distance may vary based upon the location of the downstream connection section(s) or downstream feature(s) but shall not exceed 1,100 LF from the point of connection to the existing system. The analysis model of the system should be to a point of sufficient capacity plus one downstream segment. If this distance exceeds 1,100 LF, then it is required that MWS be consulted prior to submitting for plan review. Consultations with MWS will be handled through our Downstream Availability (DSA) program for sites in the MS4 and Combined Sewer Elimination Program (CSEP) for sites in the CSS.

If the existing downstream infrastructure does not have sufficient capacity, it will be the responsibility of the developer or property owner to design, construct, and finance the downstream infrastructure improvements as determined by the downstream analysis. The maximum size that shall be installed by a development shall be limited to a 36 inch or equivalent pipe that complies with current approved materials. The maximum infrastructure responsibility will be limited to 550 LF of existing infrastructure improvements not including any site frontage improvements or distance required to connect to the existing system.

If infrastructure does not exist (i.e., subdivision in a part of the county without infrastructure) or is greater than 550 LF, the developer will be required to install infrastructure up to 36 inches to a point connectivity; MWS will not be responsible installing development driven stormwater needs in areas of the county that do not have any infrastructure. It will be assumed that engineering judgement will be used to determine the actual length for projects close to connection points or other defining factors.

In instances where the hydraulic analysis is projecting a pipe size that is greater than 36 inches to serve the drainage area, it will be the option of MWS to contribute the difference in cost to achieve the proper size through a participation agreement. It is ideal that the developer, complying with Ordinance 15.64.190, construct the infrastructure brought about by their development. For purposes of this policy, sites that have the max pipe diameter of 550 LF in front of or extending from their site and the hydraulic analysis has determined a larger size, the developer will still be required to replace up to 36 inches with MWS participating and paying the cost difference for the increased pipe size (i.e., difference in cost from a 36-inch pipe to a 72-inch pipe). Participation dollars will be limited to direct construction costs (hard costs) generally defined as direct materials, direct equipment, direct labor, and subcontractor costs.

In instances where replacement of the downstream infrastructure in a system with larger pipe capacities will cause an adverse effect on downstream properties, or is not feasible given constraints of the CSS, or any agreed to constructability conflict, such as depth requiring shoring or substrate material, the developer may elect to perform one of the below solutions with prior approval from MWS. Consultations with MWS will be handled through our Downstream Availability (DSA) program for sites in the MS4 and Combined Sewer Elimination Program (CSEP) for sites in the CSS.

1. Coordinate with MWS to find an alternate solution which replaces another segment of infrastructure in the same drainage basin; or
2. For areas in the CSS, find an alternate solution which replaces or installs new sanitary sewer main that can be used to separate combination flows in keeping with Clean Water Nashville goals and objectives; or
3. MWS will accept the funds that would be proposed to be installed via a participation agreement and used in another part of the basin.
4. For instances where a constructability issue(s) exists, MWS may decide to participate with the developer for the increased cost(s).

Election to use this policy by developers or property owners for projects that have already been submitted will be with the developer or property owner. Once adopted, all projects will be subject to this policy.

** Pricing for any participation agreement must include three (3) quotes from qualified vendors and approved by MWS.

*** This policy will be periodically reviewed to determine the overall function making sure that specific items are still functioning as intended.