

City of Omaha Public Works

Draft Wastewater Collection Systems Design Manual

To: Consulting and Development Community
From: City of Omaha Public Works Department
Date: July 6, 2018
Re: Consultant and Public Review and Comment Period on Draft Manual

Purpose

The purpose of developing a Wastewater Collection System Design Manual is to provide an update to the current “Design Criteria for Sanitary Sewers” manual approved by the Omaha City Council in 1960.

The updated manual will provide the Consulting Community with design guidance and current practices and standards to conform to the City’s expectations for the design, construction, and record documentation of new wastewater collection systems within the City’s Present Development Zone (PDZ).

Implementation Process

The draft manual will be distributed to the engineering and development community for review through the American Council of Engineering Companies (ACEC). Consulting engineers should educate their clients on the manual requirements. The draft manual will also be available for the public to download on the Public Works website at <https://publicworks.cityofomaha.org/>. Following the public review and comment period, any applicable changes will be made. Once the manual is finalized, it will proceed to the City Council for formal adoption, anticipated in March of 2019. Immediate use of the draft manual is highly recommended for new projects.

Consultant and Public Review and Comment Period

The review and comment period will be held for approximately six months, ending on January 7th, 2019. The following are requirements to submit a comment:

1. To the greatest extent practicable, assemble all firm comments and send in one e-mail.
2. All comments should reference the Chapter and Section related to the comment.
3. Include under the subject title; “Wastewater Design Manual Comments”.
4. Comments can be e-mailed to Brian Lodes at brian.lodes@cityofomaha.org.

Executive Summary

The Wastewater Collection Systems Design Manual includes 7 Chapters. A brief description of each chapter is below:

- *Chapter 1 - General Information:* This chapter relays the intent of the manual, provides an overview of the City's collection system, clarifies the difference between the public and private collection system, and provides the relationship between the manual and other City documents.
- *Chapter 2 – Project Planning:* This chapter includes the requirements and steps for a designer to do their 'due diligence' when designing a connection to the existing wastewater system and when designing a new system. This chapter includes: link to a new information request website; inspection requirements on existing manholes (with a manhole inspection form provided); requirements for geotechnical investigation, information on connections to existing brick sewers and manholes; requirements for site survey, geotechnical investigation, and existing sewer capacity determination; easement requirements; links for environmental investigations; City GIS coordination; and Design Report submittal requirements.
- *Chapter 3 – Quantity of Wastewater:* This chapter provides guidance for the determination of wastewater flows in the City of Omaha.
- *Chapter 4 – Design of Gravity Sewers:* This chapter provides design information for sewers, manholes, and inverted siphons. The manual refers to the City Specifications for allowable materials and construction to avoid any contradiction between the two documents. Checklists for design submittals and as-built submittals are provided to set clear expectations.
- *Chapter 5 – Wastewater Pumping Stations:* This chapter provides design information for small and medium wastewater pumping stations (less than 5,000 gpm).
- *Chapter 6 – Force Main Design:* This chapter provides design information for force mains.
- *Chapter 7 – Private Sewage Treatment Systems:* This chapter provides information from the current City Municipal Code regarding the design of new sanitary sewers.

Significant Changes from the Current Design Manual

- Condition assessments of the existing conditions at all new tap locations. Post construction closed circuit TV (CCTV) inspection may be required when tapping an existing pipe. Pre and post construction CCTV required when tapping an existing brick sewer.
- A capacity analysis of existing sewer at new tap locations. In areas with infill development, redevelopment, or in the combined sewer system area, flow monitoring may be required.
- A geotechnical investigation will be required on all new sanitary sewer systems. From the investigations, the Geotechnical Engineer shall recommend a design of the trench section for rigid and flexible pipe, including the suitability of the existing site soils for backfill above the pipe.
- Coordination with the City Sewer Maintenance GIS Department. At (or around) the 90% design level, the designer should contact the Sewer Maintenance GIS staff to assign identification numbers to all proposed pipes and structures.

- A sanitary sewer design report is currently provided at impact points (where the new system connects into the existing system). The new design manual will require a design report for all proposed sewer lines in the proposed system.
- A requirement to only use a rigid pipe material beneath any Federal Highway Administrations (FHWA) classified roadway. This requirement will ensure a more durable pipe material will be placed under arterial and collector streets.