

## **SANITARY SEWER DESIGN GUIDANCE**

This sanitary sewer design guidance is provided to assist in the design of municipal and private sanitary sewers within the Milwaukee Metropolitan Sewerage District (MMSD) planning area. This guidance is not intended to replace any requirements contained in the MMSD Rules or in the State of Wisconsin Administrative Code.

This guidance applies to design of new sanitary sewer extensions. It may also be used in the design of relay of existing sanitary sewers.

The following methodology is to be used in determining the peak sanitary flows in accordance with the MMSD 2020 Facilities Plan. The values may be utilized in sizing the sanitary sewers; however, the design of sanitary sewers is not limited to this guidance and its attachments.

Other design for municipal sewers may be acceptable to MMSD. If, due to the type of development to be served by the municipal sewer, design warrants different methodology than what is defined in this guidance, that different methodology must be approved by the MMSD.

This guidance is divided into three sections:

- Methodology;
- Flow Allocation Worksheet; and
- Design depth of flow for sanitary sewers.

In addition to the tools referenced, the MMSD annual Cost Recovery Procedures Manual is needed to determine each municipality's then-current occupancy factor to calculate residential sanitary flows. The Manual is available on the MMSD website.

Projected growth allocated for each sewershed can be found in the 2020 Facilities Plan, Appendix 12A, which is located on the MMSD website.

Consistent with the methodology developed in the 2020 Facilities Plan to allocate flows for new development, the MMSD developed a spreadsheet entitled "2020 FP Sewershed Flow Allocation Worksheet". A hard copy of this is attached hereto as Attachment A. All municipalities were provided with an electronic copy of this worksheet.

Sanitary sewer depth of flow is also a consideration in sewer design. Following is guidance for consideration for municipal sewer design:

DESIGN DEPTH OF FLOW	
Sewer Size (inches)	Depth (%)
8, 10 and 12	50
15 and greater	65

## **COMBINED SEWER DESIGN GUIDANCE**

Because the majority of the current combined sewer service area is sewerred and the combined sewer area cannot be enlarged, the majority of combined sewer design is relay sewers. These designs involve the basic  $Q=CIA$  formula.

For those limited instances where redevelopment will occur that will require a new sewer, a method to calculate the sanitary loadings consistent with the 2020 Facilities Plan must be utilized.

Projected growth for each combined sewershed can be found in the 2020 Facilities Plan, Appendix 12A, which is located on the MMSD website.

Attachment B is a document entitled "New and Re-development in the Combined Sewer Service Area in Sewersheds that Have No Allocation For Development" which addresses methodologies to be utilized for different scenarios in the Combined Sewer Service Area.