CLEAN WATER LAKEWOOD

Rebuilding the Pipeline for Our Future

Below are acronyms and definitions you may come across in our meetings or in the literature.

Acronyms and Abbreviations

CWA	Clean Water Act
HRT	High-Rate Treatment
I/I	Inflow/Infiltration
IWWIP	Integrated Wet Weather Improvement Plan
CBOD	Carbonaceous biochemical oxygen demand
LID	Low Impact Development
MG	Million Gallons
MGD	Million Gallons per Day
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
OEPA	Ohio Environmental Protection Agency
SWMM	Storm Water Management Model
USEPA	U.S. Environmental Protection Agency
WWTP	Wastewater Treatment Plant

Definitions

Carbonaceous biochemical oxygen demand (CBOD): a lab method measuring the depletion of dissolved oxygen by biological organisms in water. CBOD is widely used as an indication of the pollutant removal from wastewater. High CBOD levels can lead to low oxygen in the water, causing stress on ecosystems.

Combined Sewer: a sewer designed to transport sanitary, industrial, and storm flows.

Consent Decree: an agreement that resolves a dispute between two parties. The plaintiff and the defendant ask the court to enter into their agreement, and the court maintains supervision over the implementation of the decree. When orders are not followed fines are given to the defendant. Consent decrees are frequently used by federal courts to ensure a municipality's adherence to the federal Clean Water Act.

Dry Weather Flow (DWF): base flow rates not resulting from wet weather conditions.

Edgewater Interceptor: the main large diameter sewer pipe in the City of Lakewood. Intercepted flow originates at 117th and Edgewater Drive, goes west to Webb Road, then south to Clifton, west to West Clifton, then south to the WWTP (waste water treatment plant).

Green Infrastructure: on-site actions that can be to capture rainwater after it has hit the ground but before it flows to the sewer. Green infrastructure increases the ability for the land to infiltrate the stormwater verses having it runoff an impervious surface into a sewer.

Grey Infrastructure: traditional way of capturing larger volumes of water, including: pipes, storage basins, tunnels, and treatment facilities.

High-rate treatment: a physical/chemical method for treating large volumes of combined sewage and stormwater at a fast rate, typically within about 30 minutes, whereas the traditional treatment takes several hours. Physical/chemical treatment is done through the addition of coagulants and sand to increase rates of solids settling. A high-rate treatment facility is getting installed at Lakewood's treatment plant to be able to treat an additional 35 MGD.

Inflow/Infiltration (**I/I**): causes dilution in sanitary sewers. Dilution of sewage decreases the efficiency of treatment, and may cause sewage volumes to exceed design capacity. Although inflow is technically different from infiltration, it may be difficult to determine which is causing dilution problems in

inaccessible sewers. The USEPA defines the term infiltration/inflow as combined contributions from both.

Infiltration: Groundwater entering sanitary sewers through defective pipe joints and broken pipes is called infiltration. Pipes may leak because of careless installation; or they may be damaged after installation by ground movement, heavy vehicle traffic on roadways above the sewer, careless construction practices in nearby trenches, or degradation of the sewer pipe materials. In general, volume of leakage will increase over time (The Environmental Dictionary, 1995).

Inflow: Water entering sanitary sewers from inappropriate connections is called inflow. Typical sources include sump pumps, roof drains, cellar drains, and yard drains where urban features prevent surface runoff, and storm drains are not conveniently accessible or identifiable. Inflow tends to peak during precipitation events, and causes greater flow variation than infiltration (The Environmental Dictionary, 1995).

Invert Plate: A removable cast iron plate that is installed at each manhole of an over/under sewer system to prevent mixing stormwater and sanitary sewage, but still allowing access to maintain the underneath pipe.

Integrated Wet Weather Improvement Plan (IWWIP): Later branded "Clean Water Lakewood: Rebuilding the Pipeline for Our Future" that is focused on meeting the requirements in the City's NPDES permit for controlling untreated sewage overflows.

Lateral: a pipe that connects the indoor plumbing to the sewer main in the street. Most of Lakewood has two laterals, one for stormwater and one for sanitary waste.

NPDES Permit: (National Pollutant Discharge Elimination System) The permit issued by the Ohio EPA regulating point discharges into water bodies.

Outfall: the end of a pipe on the lake or river where the stormwater or combined sewer overflows are discharged. Sewershed maps show how internal combined sewer overflows lead to an outfall on the coast.

Over/Under sewers: When the storm sewer is on top of the sanitary sewer. This is common in Lakewood. If you opened up a manhole you would see the storm sewer pipe with a removable plate to provide access to the sanitary sewer below. Lakewood does have some instances where the sanitary pipe is above the storm pipe.

Sanitary Sewer: a sewer intended to transport sanitary and/or industrial wastes.

Source Control: work on public and private property to decrease the leakiness between the sanitary and stormwater systems.

Storm Sewer: a sewer intended to transport surface runoff and drainage due to wet weather events (rain, sleet, snow melt).

Wet Weather Flow (WWF): flow generated by wet weather events such as rainfall or snowmelt.