
SEWER RENEWAL
PROVEN
SOLUTIONS THAT SECURE YOUR
INFRASTRUCTURE
AND PROTECT OUR
ENVIRONMENTAL
QUALITY OF LIFE
eone
SEWER SYSTEMS

CRUMBLING INFRASTRUCTURE = LEAKY SEWERS

The nation's wastewater collection infrastructure is crumbling and in need of urgent renewal. The American Society of Civil Engineers' (ASCE) most recent Report Card for America's Infrastructure rated the wastewater collection and treatment systems poorly. System components are below acceptable standards, approaching the end of their expected useful service life, and are not meeting the objectives of protecting public health and the environment.

Most central sewers installed are gravity systems. Gravity sewers are designed to provide hydraulic capacity for both the anticipated domestic, commercial, and industrial flow, as well as an allowance for infiltration and inflow (I&I).

Limiting I&I has many economic, public health, and environmental benefits.

I&I can have major consequences:

OVERLOADING THE WASTEWATER SYSTEM

Limits available capacity in the sewer pipe network, at the wastewater treatment facility, and potentially economic growth through sewer connection moratoriums. Requires additional or oversized process tankage and equipment at the treatment plant. An increased burden is placed on the municipality or service utility.

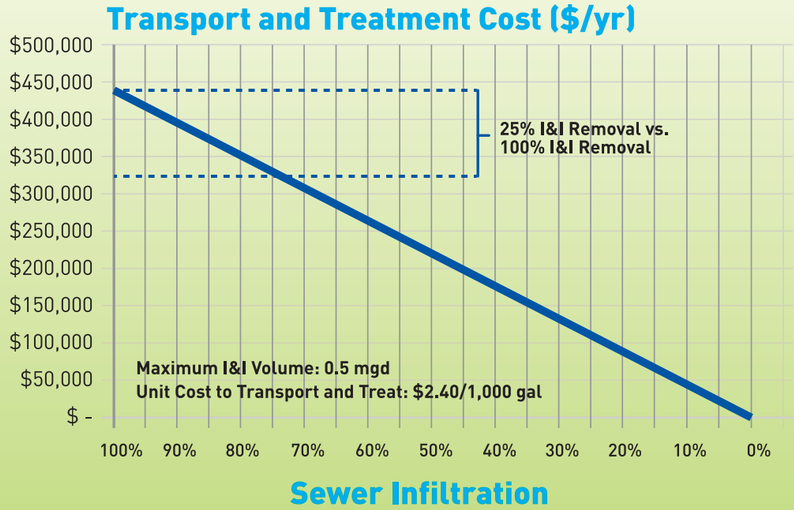
TRANSPORT AND TREATMENT COSTS

"Clean water" entering the wastewater system must be handled in the same manner as the sanitary sewer flow. Transporting the excess flow strains the capacity of the sewer pipes. Lift stations operate more frequently, increasing direct operation costs and impacting the service life of the pumping equipment. Direct and indirect costs are increased at the treatment facilities. Increased flows impose operational difficulties in maintaining the biological process.

HEALTH AND ENVIRONMENTAL HAZARDS

Overflows can cause health problems, close recreational facilities (i.e. beaches), and pollute environmentally sensitive areas.

COST OF SEWER INFILTRATION



SEWER RENEWAL CAN BE PUT INTO THREE CATEGORIES:

REPAIR

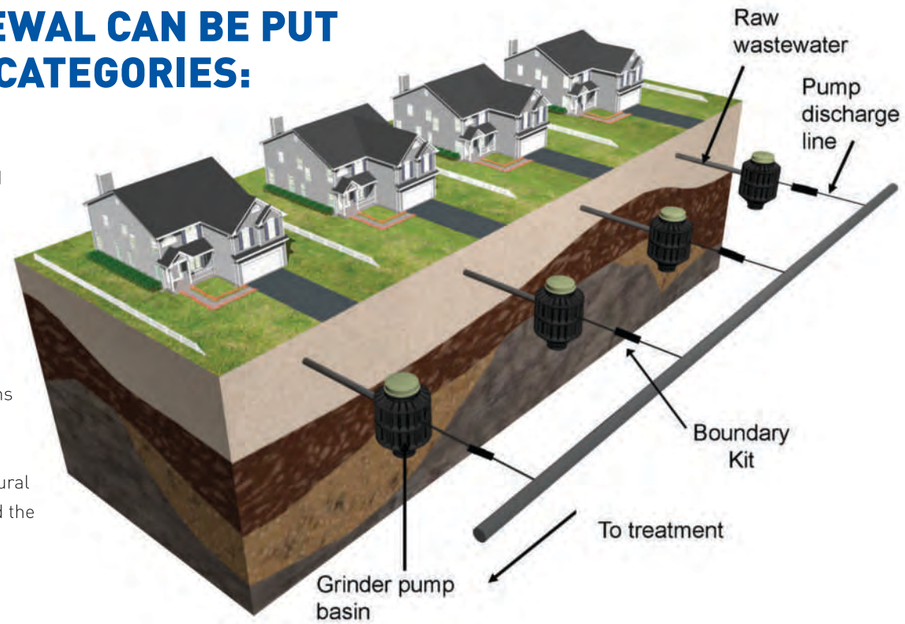
A quick fix to address localized failures and achieve minimally acceptable operating conditions

REHABILITATION

Commonly cured-in-place pipe and close fit lining systems on large segments of failed gravity sewer pipe to provide some restoration to the structural integrity of the pipe and extend the service life

REPLACEMENT

Complete abandonment of existing sewer pipe and installation of a new pipeline, sometimes with different sewer technology



E/One Sewer Renewal can be a viable and cost effective option:

- Small-diameter, pressurized pipe buried just below the frostline can be installed with low impact excavation techniques or with trenchless directional drilling methods
- Eliminates essentially all I&I over the entire service life of the new system
- Provide comprehensive sewer renewal with fewer disturbances to the community, lower economic costs, and minimal environmental impact

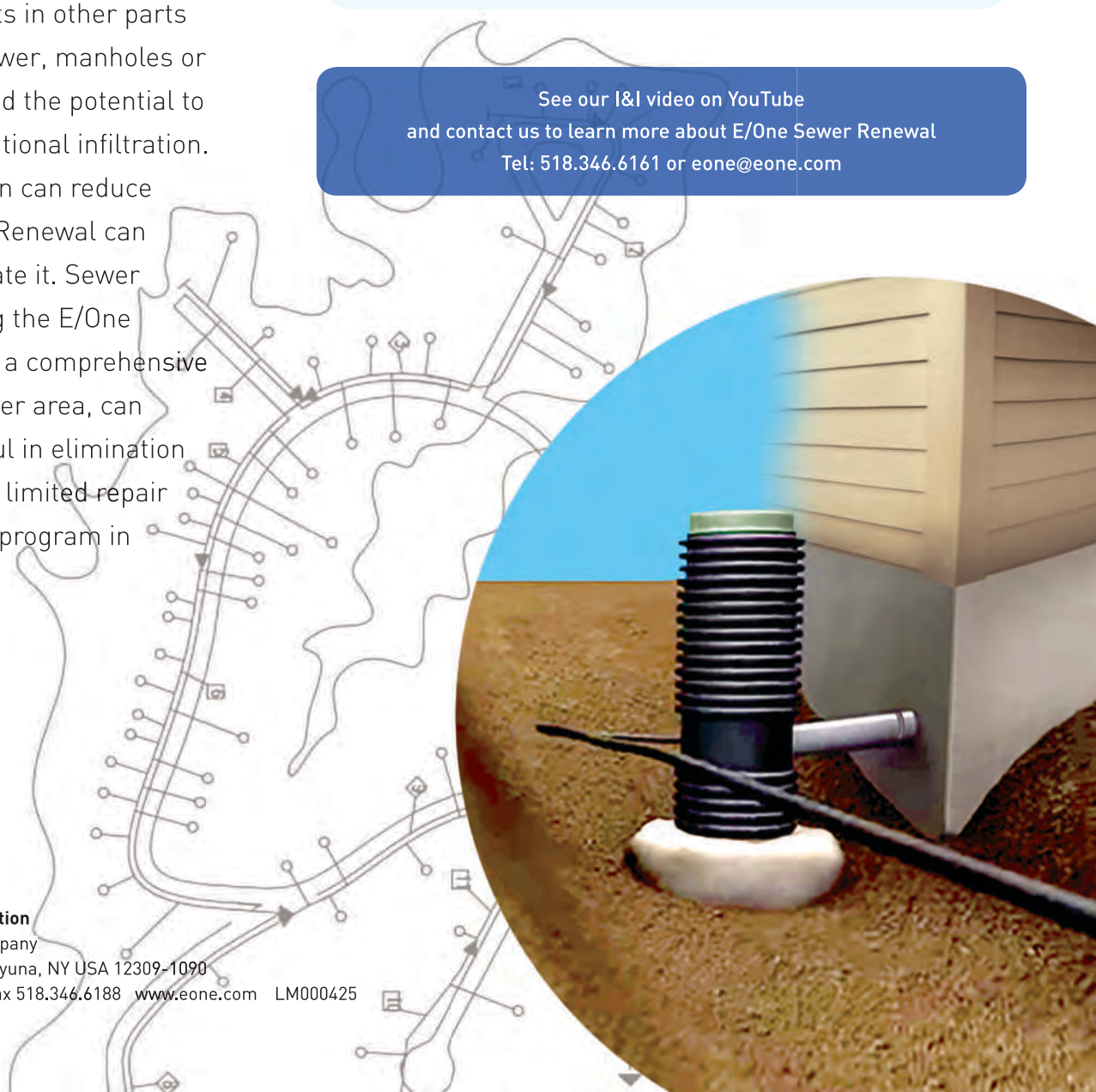
E/One Sewer Renewal is the most extensive option and is typically used when the gravity sewer is severely deteriorated, collapsed, or increased flow capacity is needed. Renewal also provides municipalities both the advantages of new infrastructure and the ability to improve deteriorated sewers without extensive excavation.

A CRUCIAL COMPONENT to the success of an E/One Sewer Renewal program is the effectiveness of the program to eliminate, or greatly reduce, the amount of I&I in the system. Many infiltration and inflow reduction projects focus on identifying and addressing "highly rated" defects and may not address the complete system. While I&I through defects is reduced, they often do not achieve the expected goals and can yield unintended consequences such as ground water migrating through previously unidentified defects in other parts of the mainline sewer, manholes or service laterals and the potential to actually allow additional infiltration. While rehabilitation can reduce I&I, E/One Sewer Renewal can essentially eliminate it. Sewer replacement using the E/One system, applied in a comprehensive manner in a smaller area, can be more successful in elimination of I&I than a more limited repair and rehabilitation program in a larger area.

CHARACTERISTICS

GRAVITY SEWER SYSTEMS	LOW PRESSURE SEWER SYSTEMS
ROOT INTRUSION	ELIMINATE I&I
PIPE CRACKS	PROVEN PROTECTION
JOINT FAILURE	SECURITY
EXPENSE	OVERFLOW PREVENTION
DETERIORATION	SAVINGS
BREAKS	RELIABILITY
BACKUPS	FLEXIBILITY
HEALTH HAZARDS	DEPENDABILITY
OVERFLOW	INNOVATIVE
BACKFLOW	COST-EFFECTIVE
BLOCKAGES	MINIMAL MAINTENANCE
CONTAMINATION	REDUCED OPERATING EXPENSES
HIGH OPERATING COSTS	PUBLIC HEALTH BENEFITS
EXCAVATION	LOWER CAPITAL COSTS
FAILURE	MINIMAL ENVIRONMENTAL IMPACT
COLLAPSING MAINS & MANHOLES	LESS COMMUNITY & BUSINESS DISRUPTION
ROADWAYS SINKING	LESS DAMAGE TO INFRASTRUCTURE

See our I&I video on YouTube
and contact us to learn more about E/One Sewer Renewal
Tel: 518.346.6161 or eone@eone.com



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