



**GNHWPCA**

Protecting the Environment

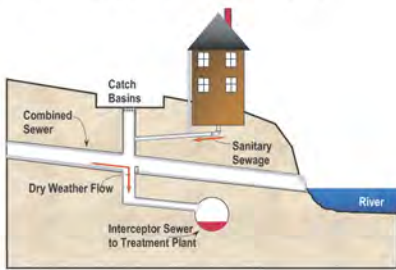
# SewerWorks

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## A Closer Look at Combined Sewer Overflows (CSOs)

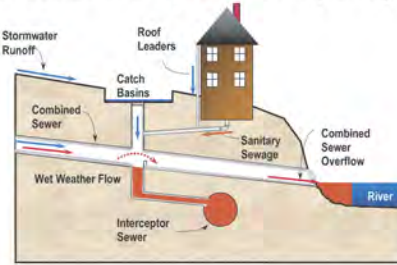
The Authority provides regional wastewater collection and treatment services to approximately 200,000 people in the City of New Haven and the Towns of East Haven, Hamden, and Woodbridge. The wastewater collection system contains two types of sewers: combined sewers and sanitary sewers. In neighborhoods served by combined sewers, a single pipe collects both sewage and storm runoff. In neighborhoods served by sanitary sewers, two separate pipes are used: one to collect sewage and a second to collect storm runoff.

### During dry weather all flows are collected for treatment



During dry weather, the sewer system sends all sanitary flow to the East Shore Water Pollution Control Facility. The East Shore Plant is an activated sludge, advanced secondary treatment plant and is the largest coastal Connecticut treatment plant discharging into Long Island Sound. All dry weather flows receive primary and secondary treatment and disinfection prior to discharge to New Haven Harbor. Primary treatment is the first stage of wastewater treatment involving the removal of floating debris and solids by screening and settling. Secondary treatment is a type of biological treatment used to convert dissolved or suspended solids into a form more readily separated from the water being treated.

### During wet weather inflows exceed the collection system's capacity



During wet weather, large quantities of rain water enter the combined sewer system. In periods of wet weather when flows are higher than dry weather, the East Shore facility can provide primary treatment for an additional 60 million gallons per day of sewage flow. All flows are disinfected prior to discharge. However, in periods of wet weather when flows exceed the capacity of the East Shore Treatment Plant, portions of the collection system become overloaded, and combined sewage overflows to the Mill, West or Quinnipiac Rivers or directly into New Haven Harbor. The system currently has approximately 510 miles of separate sewers, 50 miles of combined sewers, and 24 Combined Sewer Overflows. The combined sewers are located within the City of New Haven. For the average year, it is estimated that a total of 240 million gallons of combined sewage overflows untreated.

In the late 80's, the U. S. Environmental Protection Agency (EPA) estimated that combined sewer systems served about 43 million people in approximately 1,100 communities nationwide. In August 1989, EPA issued a National Combined Sewer Overflow Control Strategy. Although the Strategy was successful in focusing increased attention on CSOs, it fell short of resolving many issues. In April 1994, EPA created the current CSO Control policy. The policy required that CSO communities create a plan that would provide clear levels of control to meet appropriate health and environmental objectives; provide sufficient flexibility to municipalities, and allow a phased approach for implementation considering a community's financial capability.



*Implementation of the Greater New Haven Combined Sewer Overflow Long Term Control Plan will clearly dominate the Authority's agenda for the foreseeable future. The goal is extremely important – to improve the water quality of the West River, the Mill River, the Quinnipiac River, New Haven Harbor and ultimately Long Island Sound.*

*The benefits include eliminating dry weather overflows and 100% of wet weather overflows for the average annual rainfall, reducing basement backups and street flooding, and protecting critical shoreline areas of greatest public use and environmental sensitivity. Our role is to insure that we achieve the goal in a way that is both cost effective and affordable. To achieve these results we will continue to seek and obtain the greatest amount of grant funding available for this project.*

*We are currently in the initial stages of program implementation. In the near future, you will see improvements to our sewer system occurring throughout our region. This is just one more way the GNHWPCA is doing its part to provide you, our customers, with the best service possible. The changes we will make will help protect our environment and improve the quality of life for the region both now and in years to come.*

*Arthur DeSorbo*  
Editor and Board Chair

# SewerWorks

## CSO Overflow - West River



In 2001, the Connecticut Department of Environmental Protection approved the Authority's CSO Long Term Control Plan (LTCP) which detailed how the Authority would control and ultimately eliminate the 240 million gallons of overflow from the CSO's. The LTCP incorporates a number of strategies, giving high priority to low cost/high return measures. These measures include maximizing wet weather flow to the East Shore Water Pollution Control Facility either by capital improvement or operational enhancements, separation of the storm water inflow into the combined sewer system, installing off-line combined sewage storage tanks, and capacity upgrades to pumping stations and conduits.

These projects are eligible for funding through the State of Connecticut's Clean Water Fund (CWF) program and maintain a

high position on the CWF priority list. The Authority recently received approval for eight (8) specific projects. All of these projects qualify for 50 % grant funding. As a new authority, the GNHWPCA is entitled to and will receive an additional 5 % of CWF Grants. This program represents a major step towards implementing the Authority's CSO Long Term Control Plan, resulting in the elimination of approximately 20% of the overflow volume. When completed, the remainder of the Authority's \$300 million, 15-year CSO Long Term Control Program, would reduce the remaining overflow during major storms.

At the time of regionalization, the Authority and the City of New Haven agreed to share the cost of the CSO program, 60 % of the cost paid by the Authority with the remaining 40 % paid by the City.

To date, the Authority has completed the construction of an off-line underground storage tank located adjacent to Ella Grasso Boulevard and below the parking and playground areas for the new Truman School. During a rain storm, the tank stores approximately 5 million gallons of combined sewage which would have previously been discharged through an overflow. At the end of the storm, the stored sewage is pumped to the East Shore Plant for treatment.

In addition, design is underway for the expansion of the East Shore Treatment Plant to accommodate additional wet weather flow. A sewer separation master plan for Fair Haven is being created, and a monitoring program implemented to insure that the completed improvements result in cost effective water quality and environmental improvements. The Authority estimates that over \$90 Million will be spent in the next five years to satisfy the requirements of the approved CSO Long Term Control Plan. The State of Connecticut through the Clean Water Fund will contribute almost \$ 50 Million.

## Storage Tank Schematic

