



CASE STUDY

PROJECT NAME

Town of Kingston, MA
Wastewater Treatment System - Effluent
Recharge Site

SYSTEM SPECIFICATIONS

700,000 GPD dispersal system extension
of new town wastewater treatment plant

INFILTRATOR PRODUCTS USED

Infiltrator High Capacity H-20 Chambers

INSTALLATION DATE

Spring/Summer 2024

ENGINEER

CDM Smith
Boston, MA

INSTALLER

C.C Construction
Massachusetts

OWNER

Town of Kingston, MA

New Dispersal Field Upgrades Wastewater Treatment System and Expands Potential for Future Growth of Coastal Massachusetts Town

OVERVIEW & CHALLENGE

The Town of Kingston, MA needed to expand their current wastewater treatment system to accommodate anticipated increases in flow for community growth. The high nitrogen load from the aging, wastewater infrastructure had impacted the waterways causing shellfish beds in town to be closed for decades. Additionally, several beaches were closed regularly due to concerns of water contamination.

Prior to the new expansion, the town had a temporary dispersal system that utilized smaller temporary leachfields for six months out of the year and used the disinfected wastewater for irrigation for the remaining six months. The town faced a few hurdles in demonstrating the need for funding of a new dispersal system before receiving approval.

SYSTEM DESIGN

The town built a new centralized wastewater treatment plant with plans to connect to homes and businesses currently using the old sewer system or traditional onsite systems. Increasing the design flow to 700,000 GPD, the design engineer, CDM Smith, developed an innovative plan have a subsurface disposal recharge site. The recharge site/leaching area included six large drainfield beds with over 13,000 Infiltrator High Capacity H-20 chambers and a force main. The expansion allows for additional future connections to the upgraded centralized wastewater treatment plant and helps to lower the nitrogen levels on the shoreline.

The installation of the 700,000 GPD recharge system involved clearing land, excavating six drainfield beds, installing coarse aggregate, placing the Infiltrator High Capacity H-20 chambers, geotextile filter fabric and geogrid, installing distribution boxes, and constructing the new 3,600 LF of force main to connect into the existing system to the recharge site.

RESULT

Large flow systems with a subsurface discharge are a viable solution that can have economic and ecological benefits. Other system designs and drainfield chambers were considered, however the Infiltrator High Capacity H-20 chamber, which is rated for 32,000 lbs. per axle, was selected to accommodate for potential vehicle traffic over the system including larger vehicles if needed. The subsurface discharge allows the future use of the land as open space to be enjoyed by all, there will be a preserve with several foot trails. Operation and maintenance will be minimal for the disposal beds.



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