

# COUNTY OF SUFFOLK



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DEPARTMENT OF HEALTH SERVICES

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**SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES  
GENERAL GUIDANCE MEMORANDUM # 26  
PROCURE FOR EVALUATION OF MASS LOADING IN WASTEWATER  
GENERATED BY AN EXISTING COMMERCIAL FACILITY**

## **AUTHORITY**

The Suffolk County Sanitary Code sets forth requirements for approval of water supply and sewage disposal systems. The statutory authority for these guidelines can be found in Article 5 Section 760-502, Article 6 Section 760-602, 603, 607, and Article 7 Section 760-705A. Details specifications can be found in Standards for Approval of Plans and Construction for Sewage Disposal Systems for Other Than Single Family Residences, also known as Commercial Standards.

## **PURPOSE**

With the introduction of low flush fixture units, owners of sewage disposal systems (conventional and sewage treatment facilities) may be finding lesser volume of wastewater being discharged into their systems than the permitted capacity giving them the notion that their systems have extra capacities for additional connections. However, the Department's standards are based upon protection of the groundwater supply by controlling the mass of sewage being discharged to the aquifer. The mass of nitrogen is the combination of actual water flow and strength of the sewage. While low flush fixtures tend to use less water, the wastewater becomes more concentrated resulting in an equivalent mass loading.

**This document provides guidance to applicants who intend to verify the actual mass loadings in the wastewater generated at their existing facilities through scientific evaluations of analyses of samples collected from their facilities in conjunction with their water consumption records. It should be noted that a decision as to the establishment of daily flows as a result of the scientific evaluations may be subject to a Board of Review hearing.**

## **GUIDANCE**

Article 6, Suffolk County Sanitary Code, regulates mass loading of total nitrogen discharged into the ground from properties in Suffolk County served by conventional subsurface sewage disposal systems.



While hydraulics are accounted for sizing a sewage disposal system, priority must be given to the overall nitrogen loading to ensure compliance with the Article 6 density requirements. A system may appear to have hydraulic capacity in excess of the designed daily flows; however, scientific evaluations may show that daily nitrogen loadings are close to the allowable population density for the property.

In the case of sewage treatment plants, Article 6 density requirements are not applicable. However, all the sewage treatment plants in Suffolk County are regulated by SPDES Permit which requires reduction of influent nitrogen loading to 10 mg/l through treatment processes. Hydraulics and influent parameters (mass loadings of BOD<sub>5</sub>, Total Suspended Solids, and total nitrogen) are considered in order to design a treatment plant. If a treatment plant appears to be operating with lesser volume than permitted capacity, then scientific evaluations must be performed to determine the actual daily loadings of the design parameters and thereby determine whether the plant has capacity in excess of daily loadings.

If opting for verifying daily mass loadings through scientific evaluations, the following paperwork shall be required from a licensed design professional for a review and evaluation by the Department:

1. Water Consumption Record – This item must include records of water consumption by the subject facility for past three (3) years from the local water purveyor. If one service main serves both domestic and lawn irrigation water distribution systems, then the data must include non-irrigation months only.
2. Sewage Strength Analysis Report – This report consists of analyses of samples collected hourly from the sewage disposal facility under evaluation for seven (7) consecutive days. On each day, the most turbid sample shall be designated as “grab sample” and the rest of the twenty three (23) samples shall be combined to form a “composite sample”. Analyses shall be conducted on 14 such samples collected over the seven day period. Sampling must be performed following standard sampling procedure.

**For conventional subsurface systems**, the analysis will be conducted for influent nitrogen loading only.

**For sewage treatment plants**, analyses report must list the following influent parameters:

- a) BOD<sub>5</sub>
  - b) Total Suspended Solids (TSS)
  - c) Total Organic Nitrogen
  - d) Total Ammonia Nitrogen
  - e) Nitrate
  - f) Nitrite
  - g) Solution PH
3. A letter from a licensed design professional regarding the structural condition and daily performance of the system.

Upon review of the above paperwork, a decision regarding the actual daily flows will be made.

**EFFECTIVE**

This document is for guidance purposes only and becomes effective for all applications received after the date of this memorandum. This document is not a standard and is not meant to substitute for the discretion and common sense of the review staff.

Issued by: *Signature on file*  
Walter J. Hilbert, PE, Chief  
Office of Wastewater Management