To: All Connecticut Municipalities and Consultants

Re: Thirty percent (30%) Grant for construction costs related to BNR removal

The following list outlines the processes and their maximum eligibility for 30% grant monies required by the latest changes to Section 22a-478 (c) of the General Statutes of Connecticut for BNR construction projects:

1. Preliminary treatment: zero %

2. Primary treatment: zero %

3. Secondary treatment:
   a. Membrane feed systems 100 %
   b. Baffles - Anoxic zones 100 %
   c. Recycle pumps, VFDs, & associated piping 100 %
   d. Anoxic zone mixers 100 %

   c. Additional tankage or an increase in size of tankage - increased costs associated with BNR to be evaluated using TR-16.
      If a facility is already designed to operate in year-round nitrification mode no additional grant will be provided. If a facility is already designed to operate in a seasonal nitrification mode the additional tankage required to meet year-round nitrification and denitrification will be eligible.

f. Blowers, piping, diffuser grids, & associated equipment - increased costs associated with BNR to be evaluated based on the increase in oxygen needed at 20 year average daily design flow. Increased oxygen needed for nitr/denitr is approximately:

   Secondary: 1.1ppm x lbs BOD = 1.1ppm x (200ppm x 0.65) = 1193 lb/MG
   Nitr: 4.6ppm x TKN = 4.6ppm x 25 x 8.34 = 960 lb/MG
   Nitr/denitr: (4.6ppm x TKN - 2.9ppm x NO3) x 8.34 = 960 - (2.9 ppm x 20 x 8.34) = 960 - 484 = 476 lb/MG

   This shows an 80% increase needed over secondary for nitrification only and a 40% increase over secondary needed for nitr/denitr.

   Facilities with NO3, TKN and/or NO3 values that differ significantly from the above values will be required to supply appropriate backup information to justify a departure to the above assumptions.

g. Return sludge pumps - increased costs associated with BNR to be evaluated using TR-16.

h. High biomass - increased costs associated with BNR to be evaluated using TR-16. If the high biomass is necessary only for nitr/denitr it would be eligible. If the biomass is to alleviate capacity problems as well as nitr/denitr the eligible amount will be prorated.
4. Secondary clarifiers:
   a. Density current baffles 100%
   b. Additional tankage - increased costs associated with BNR to be evaluated using a maximum SOR of 1200 gpd/sf for straight secondary and 800 gpd/sf for AWT.

5. Denitrification Filters 100%

6. Intermediate pumping - If necessary for hydraulic profile due to added BNR facilities 100%

7. Laboratory nutrient testing equipment - not to include autoanalyzers 100%

8. Solids handling/processing 0%

9. Sluwork:
   a. Demolition, dewatering, & piles - if required to construct BNR facilities 100%
   b. Other - piping, bedding, restoration, ... to be determined with the following formula:

\[
\frac{\text{Construction costs eligible for 30\% BNR grant} \times \left(\text{CWF eligible site work costs - demolition}\right)}{\text{CWF eligible construction costs}}
\]

10. Electrical - to be determined with the following formula:

\[
\frac{\text{Construction costs eligible for 30\% BNR grant} \times \left(\text{CWF eligible electrical costs}\right)}{\text{CWF eligible construction costs}}
\]

11. Plant water system - Only those costs related to aeration system foam sprays.

12. Engineering services - to be determined with the following formula:

\[
\frac{\text{Construction costs eligible for 30\% BNR grant} \times \left(\text{CWF eligible design and construction engineering costs}\right)}{\text{CWF eligible construction costs}}
\]

13. Construction Contingency - to be determined with the following formula:

\[
\frac{\text{Construction costs eligible for 30\% BNR grant} \times \left(\text{reasonable CWF eligible construction costs}\right)}{\text{CWF eligible construction costs}}
\]

Very truly yours,

\[\text{Thomas M. Morrissey, Director}\]
\[\text{Planning & Standards Division}\]
\[\text{Bureau of Water Management}\]