

**Town of Newmarket  
Town Council  
Non-public Meeting  
Wednesday, April 21, 2021 at 6:30 PM**

Present: Council Chair Toni Weinstein, Council Vice-chair Zachary Dumont, Councilor Jonathan Kiper, Councilor Helen Sanders, and Councilor Scott Blackstone. Present Virtually: Councilor Megan Brabec.

Absent: Councilor Katanna Conley.

Staff Present: Town Manager Stephen Fournier, Environmental Services Director Sean Greig and Recording Secretary Wendy Chase.

Chair Weinstein convened the Non-public meeting at 6:30 PM.

Vice-chair Dumont moved to go into Non-public session pursuant to RSA 91-A:3,II(ℓ) Consideration of Legal Advice Provided by Legal Counsel, Councilor Sanders seconded the motion.

**Motion was Passed by a vote of 6-0-0.**

Environmental Services Director Greig was present to explain/discuss the Wastewater Treatment Facility Great Bay Total Nitrogen Permit (GBTNP).

The following is the Memorandum Director Greig discussed with the Council:



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TOWN OF NEWMARKET, NEW HAMPSHIRE  
OFFICE of ENVIRONMENTAL SERVICES

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MEMORANDUM

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TO: Steve Fournier, Town Manager  
FROM: Sean T. Greig, Environmental Services Director  
SUBJECT: Wastewater Treatment Facility Great Bay Total Nitrogen General Permit  
DATE: March 25, 2021

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This is a memorandum that explains the Wastewater Treatment Facility National Pollution Discharge Elimination System Permit background and Administrative Order by Consent, the new Great Bay Total Nitrogen General Permit, the contrast between the two permits and Newmarket's choices, and recommendations.

**Background**

The Town of Newmarket was issued a new five year National Pollution Discharge Elimination Permit (NPDES) for its wastewater Treatment Facility (WWTF) that began on April 3, 2013 and expired on April 3, 2018. The permit effluent limits included flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), pH range, total chlorine residual, fecal coliform, enterococci bacteria, whole effluent toxicity, and total nitrogen (TN). The TN effluent limits were a new requirement to the Town's NPDES Permit. The TN permit requirement required the Town to treat its wastewater for TN to a permit limit of 3.0 mg/l and 21 lbs per day during April 1, through October 31 which is the current limit of technology.

The Town's trickling filter WWTF process could not meet the new TN effluent limits. So the Town had begun negotiating with the EPA in anticipation of the new TN discharge limits. Devine Millimet Attorneys at Law presented the Town Council on October 3, 2012, an estimated cost to treat the Town's wastewater to the limit of technology, and the cost to enter into an Administrative Order by Consent (AOC). The Town Council selected to enter into an AOC with the EPA to construct a new WWTF treatment process for \$14.1 million design and construction plus an estimated \$1.0 million for AOC costs with \$345,000 per year in operation and

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maintenance costs versus building to a 3.0 mg/l TN concentration effluent limit at an additional \$3.9 million design and construction with \$380,000 operational and maintenance costs.

Administrative Order by Consent permit limit:

The Town received an interim TN effluent permit limit of 8.0 mg/l/d from April 1 through October 31.

Administrative Order by Consent requirements:

#### Wastewater Treatment Facilities

- 1.) By March 31, 2015 begin construction of a new WWTF treatment process.
- 2.) By March 31, 2017 achieve substantial completion of the new WWTF treatment process.
- 3.) By March 31, 2018 or 12 months after substantial completion the Town shall comply with the interim total nitrogen effluent limit (8.0 mg/l).

Until July 15, 2017, the Town shall submit quarterly reports to EPA and NHDES summarizing its compliance.

#### Non-Point Source and Storm water Point Source Activities

- 1.) Upon effective date of this Order, the Town shall begin tracking all activities within the Town that affect the total nitrogen load to Great Bay.
- 2.) Upon effective date of this order, the Town shall begin coordination with NHDES, other Great Bay communities, and watershed organizations in NHDES's effort to develop and utilize a comprehensive subwatershed-based tracking/accounting system.
- 3.) Upon effective date of this order, the Town shall begin coordination with NHDES to develop a subwatershed community based total nitrogen allocation.
- 4.) By September 30, 2017, submit to the EPA and NHDES a total nitrogen non-point source storm water control plan ("Nitrogen Control Plan").

#### Reporting

Beginning July 31, 2014, and annually thereafter the Town shall submit Total Nitrogen Control Plan Progress Reports to EPA and NHDES that address the following:

- 1.) The pounds of total nitrogen discharged from the WWTF during the previous calendar year.
- 2.) A description of the WWTF operational changes that were implemented during the previous calendar year.
- 3.) The status of the development of the non-point source and storm water point source accounting system.
- 4.) The status of the development of the non-point source and storm water point source Nitrogen Control Plan.

- 5.) A description and accounting of the activities conducted by the Town as part of its Nitrogen Control Plan; and
- 6.) A description of all activities within the Town during the previous year that effect the total nitrogen load to the Great Bay Estuary.

By December 31, 2022, the Town shall submit an engineering evaluation that includes recommendations for the implementation of any additional measures necessary to achieve compliance with the NPDES Permit, or justification for leaving the interim discharge limit set forth in attachment 1.a in place (or lower than the interim limit of 8.0 mg/l but still above 3.0 mg/l) beyond that date.

The Town Administrator signed the AOC on May 10, 2013. The Town has completed all the requirements of AOC except for the engineering evaluation. The Town has completed two years of sampling in the Lamprey River in 2019, 2020, and had planned to sample a third year in 2021 to have enough data to complete the engineering evaluation due by December 31, 2022. However, the EPA Region 1 issued a new Great Bay Total Nitrogen General Permit (GBTNGP) regulating Total Nitrogen (TN) discharges to the Great Bay Estuary which affects twelve New Hampshire communities in the seacoast area including Newmarket NH. The GBTNGP was issued on November 24, 2020 and went into effect on February 1, 2021. The communities have until April 1, 2021 to opt-in or opt-out of the GBTNGP.

The New General Permit carries with it TN limits which address two categories of dischargers: one being those WWTF's with design capacities greater than 2.0 MGD and those with design flows less than 2.0 MGD. The Newmarket WWTF with a design flow of 0.85 MGD should fall into the smaller category who have not constructed new wastewater treatment processes to meet low TN effluent limits. The new GBTNGP requires the smaller communities to hold the load, and to take part in an Adaptive Management Framework of the General Permit.

#### **Adaptive Management Framework Voluntary Submittal**

The General Permit is one aspect of the Adaptive management framework. The other elements of the adaptive management framework include ambient water monitoring, pollution tracking, reduction planning, and review. Implementation of adaptive management includes collaboration between EPA, the State of New Hampshire, and public, private, and commercial stakeholders. The following provisions allows permittees the option, at their election, to be involved in this collaboration, by submitting a detailed proposal as specified below.

Within 180 days of the effective date of the permit, at their election, submit a proposal to the EPA that outlines:

- a.) The approach to monitor the ambient water quality in the Great Bay estuary to determine progress and trends.
- b.) The method(s) to track reductions and additions of total nitrogen over the course of the permit.

- c.) An outline/plan of overall source reductions of total nitrogen over the course of the permit.
- d.) An inclusive and transparent process for comprehensively evaluating any significant scientific and methodological issues relating to the permit, including the choice of a load-based threshold of 100kg ha<sup>-1</sup> yr<sup>-1</sup> verses any other proposal threshold, including a concentration-based threshold of 0.32 mg/l. This submission shall include detailed milestones culminating in submission of a report to EPA for inclusion in the administrative record for permit renewal. The report shall be completed prior to the expiration of the permit term and shall indicate whether the NHDES concurs with the findings.
- e.) A proposed timeline for completing a Total Maximum Daily Load (TMDL) for TN in Great Bay and submitting it to EPA for review and approval.

Newmarket, however, was treated like a large community and must hold the load to their recent historical flow but also discharge less than an 8.0 mg/l TN which equates to 30 lbs/d. Under the AOC the Town was allowed to discharge up to 57 lbs/d.

While this does appear to be unfair, EPA did state in the **draft** General Permit, for equity, Newmarket can apply the TN reductions they have already achieved through their WWTF upgrade towards the ultimate goal they have for the Town for both point and non-point source TN reductions. However, this text did not make it into the **final** General Permit. The Town has had discussions with the EPA, and EPA has indicated that the Adaptive Management Plan in the draft permit is the only plan on record that is currently available. So it is an acceptable plan for the Town to follow.

### **Evaluation**

The Town had to opt-in to the GBTNGP by April 1, 2021 to have the ability to be part of the GBTNGP. The Newmarket April 1, 2021 opt-in does not lock the Town into the new GBTNGP. The Town cannot be part of the GBTNGP until it receives a new NPDES Permit. The reason is that the Town would have two NPDES permits with TN limits. The Town's current NPDES Permit has expired so it cannot be amended. The Town must receive a new NPDES Permit with no TN limits, before it can become part of the GBTNGP.

The Town can elect not to be part of the GBTNGP when the EPA issues the Town its new NPDES permit. The Town will need to make a choice to have a GBTNGP with TN effluent limits and a NPDES permit with no TN permit limits, or have one NPDES permit with TN limits. However, EPA has indicated that the opt-out of the GBTNGP and having one permit would result in TN effluent limits of 3.0 mg/l/d and 21 lbs/d. The Town current WWTF treatment process could meet the 21 lbs/d limit but not the 3.0 mg/l/d concentration limit. The GBTNGP has a 30 lbs/d TN limit only that the WWTF could meet. Due to the EPA creating a new general permit for WWTF's with design flows less than 1.0 MGD, I would expect Newmarket to receive its new

permit with no TN limits at the beginning of 2022. At that time, Newmarket could make a decision to go with the GBTNGP, or receive a NPDES permit with TN effluent limits of 3.0 mg/l/d and 21 lbs/d.

### **Permit Contrast**

#### **Opt-in**

Newmarket opt-in to GBTNGP: the Town will receive a TN discharge effluent limit of 30 lbs/d. The Newmarket WWTF can meet the GBTNGP limit. Newmarket has completed most of the optional requirements of the GBTNGP. The 30 lbs/d TN effluent permit limit is equal to a 4.22 mg/l/d concentration limit at the WWTF design flow of 0.85 MGD.

The GBTNGP would expire on February 1, 2026. At that time, Newmarket would submit a report identifying Newmarket's adaptive management work to reduce its TN contribution to Great Bay. EPA will assess the adaptive management work and the health of the Great Bay, and adjust the permits accordingly. Based on my experience, I think that the 12 communities will be forced to reduce their TN discharges even more. The Town needs to look at different TN reduction alternatives during the life of the GBTNGP to put the Town in a better position to make very tough decisions that will impact the Town financially.

#### **Opt-out**

Newmarket opt-out of the GBTNGP: the Town will receive a new permit with TN effluent limits of 3.0 mg/l/d and 21 lbs/d. The Newmarket WWTF treatment process can meet the 21 lbs/d limit, but cannot meet the 3.0 mg/l/d concentration limit. The Town would receive an Administrative Order to come into compliance with the 3.0 mg/l/d concentration limit. The current estimated cost to design and construct additional treatment to meet the 3.0mg/l/d at 0.85 MDG design flow is \$3.91 million plus additional \$18,000 in operation and maintenance costs in 2018 dollars.

### **Recommendation**

The Town's WWTF has reduced its TN pounds discharge 88.70% from an average of 62,123 lbs/yr from 2012-2016 to 6,999 lbs/yr 2018-2020. The GBNPSS 2009 model that Newmarket's nonpoint source (NPS) TN contribution normalized to rainfall is 24,445 lbs/yr. The Town has made steps to use low costs methods to reduce its NPS TN contribution to Great Bay. However, it is still more cost effective to remove TN at the WWTF.

- 1.) The Town opt-in and stay on the General Total Nitrogen Great Bay Permit.
- 2.) The Town submit the 180 day submittal.
- 3.) The Town work with an engineer to develop perform the total nitrogen debits/credits for the Town's submittal at the end of the permit cycle.
- 4.) The Town perform pilot testing to determine short-term and long-term options and cost for the WWTF to reach limits of technology.

Director Greig said that on their first two years of sampling they did see improvements. He said that a lot of nitrogen comes from rainfall so cleaning the air helps dramatically.

Chair Weinstein asked Director Grieg to explain this process in the easiest possible terms so that the Council can have a better understanding of it.

Director Greig said that he would do that. He asked that the Council make a decision this evening based on his recommendation to opt-in and stay on the GTNGBP so that he can start the 180 day submittal.

Town Manager Fournier suggested that the Council allow Director Greig to start the 180 day submittal without a decision this evening and to go through the process of creating a Resolution to opt-in to the GBTNGP that the Council can review, discuss and approve after a second reading. The Council agreed to this approach.

Vice-chair Dumont moved, to end the non-public session at 7:06 PM, Councilor Sanders seconded the motion.

**Motion was Passed by a vote of 6-0-0.**

Respectfully submitted,

Wendy V. Chase  
Recording Secretary