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September 30, 2016

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Nagog Pond Water Treatment Plant
PROJECT MUNICIPALITY : Acton
PROJECT WATERSHED : Nagog Pond
EEA NUMBER : 15446
PROJECT PROPONENT : Concord Public Works, Water and Sewer Division
DATE NOTICED IN MONITOR : August 24, 2016

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) and Section 11.08 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Draft Environmental Impact Report (DEIR) and hereby determine that it **adequately and properly complies** with MEPA and its implementing regulations. The DEIR includes adequate analysis and responses to the Scope and there are no substantive issues that remain to be addressed in a Final EIR. Therefore, I will publish notice in the next *Environmental Monitor* that the DEIR shall be reviewed as a Final EIR pursuant to the provisions at 11.08(8)(b)(2)(a), which will be subject to a 30-day public comment period.

Project Description

As described in the DEIR, the project consists of improvements and upgrades to the Town of Concord's public water supply system infrastructure adjacent to Nagog Pond in Acton. The project includes replacement of the 1,290-square foot (sf) Ozone Disinfection Facility with a 7,165-sf two-story water treatment plant (WTP) and replacement of the cast iron intake pipe into

Nagog Pond with a 16-inch high-density polyethylene (HDPE) pipe. The proposed WTP will have a hydraulic capacity of 1.5 million gallons per day (mgd), which is equivalent to the existing facility. It will be a zero discharge facility, wherein all waste, with the exception of sanitary waste, will be recycled.

The Town of Concord is operating under a Filtration Avoidance Waiver for Nagog Pond under the Surface Water Treatment Rule (SWTR). The SWTR imposes rigorous requirements for use of a public surface water supply that does not provide filtration treatment. Construction of the proposed WTP will allow the Town to meet SWTR standards and provide the Town with more flexibility in managing its water sources. The WTP will treat water pumped from Nagog Pond with potassium permanganate for pre-oxidation, polyaluminum chloride for coagulation, flocculation, dissolved air flotation for clarification, ozone for primary disinfection, granular activated carbon filtration for particulate removal, potassium hydroxide for pH adjustment, zinc orthophosphate for corrosion control, sodium hypochlorite for secondary disinfection, and sodium fluoride for fluoridation.

Treatment infrastructure will be located in a two-story 7,165-sf building (9,338 gross sf) that will be constructed within the footprint of the disinfection facility. Access to the WTP will be provided via the existing driveway from Skyline Drive. The project will include a stormwater roof runoff collection and infiltration system.

The project will be constructed in two phases. Construction of the WTP is anticipated to begin during the first half of 2017. The existing facility will remain operational until the late summer or early fall of 2017. Once the existing facility is taken off-line for demolition, the intake project will also commence. Construction of the new intake pipe will require temporarily dewatering a limited area of Nagog Pond. Both the new intake and WTP are scheduled to be operational between mid-2018 to early 2019. The Town's six groundwater supply wells will be used while Nagog Pond is not available during construction of the intake and WTP.

Project Site

The 60-acre project site consists of two parcels in Acton owned by the Town of Concord. Nagog Pond, located in the Towns of Acton and Littleton, is a public surface water supply for the Town of Concord. The intake pipe for the water supply and an ozone disinfection facility are located in Acton. Access to the site is provided via Skyline Drive. The site is partially developed including the dam/intake structure, disinfection facility, and associated appurtenances (gatehouse, raw water wetwell, valve and meter vault, etc.). The remainder of the site is undeveloped forested land for water supply protection purposes.

Nagog Pond is used by the Town as a supplemental source to augment its water supply from groundwater production wells. As a public water supply, Nagog Pond is classified as an Outstanding Resource Water (ORW) by the Massachusetts Department of Environmental Protection (MassDEP). The disinfection facility was built in 1995 and has a hydraulic capacity of 1.5 mgd. The facility is located approximately 200 feet from Nagog Pond. The Nagog Pond dam and water intake pipe were constructed over 100 years ago. The dam was rehabilitated in 2012. The 16-inch diameter cast iron intake pipe extends approximately 1,800 linear feet (lf) into

Nagog Pond from the gatehouse at the dam and is in poor condition. Ozone gas is added to raw water at the disinfection facility for oxidation and disinfection, which then flows by gravity to the Route 2A Satellite Pumping Station via a second 16-inch main (circa 1909) for final treatment (disinfection, pH adjustment, fluoridation, and corrosion control). Finished water is pumped into the water distribution system which provides service to the Town and to several businesses located along Route 2A in Acton.

Changes to the Project Since Filing of the Environmental Notification Form (ENF)

The ENF included a proposal for construction of an accessory solar photovoltaic (PV) array to power the new facility. The DEIR indicates that the PV array has been eliminated from the project due to local opposition. The DEIR included an alternative proposal to power the facility with three 100-kilowatt (kW) gas fired reciprocating engines to provide a cost-effective, independent power supply. As described in the GHG section of this Certificate, the Proponent has eliminated this alternative from consideration and intends to use electricity from the power grid to meet its needs.

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project include the temporary alteration of approximately 16.23 acres of Land Under Water (LUW) for the drawdown of the pond coincident with the permanent alteration of 632.5 sf of LUW for placement of concrete collars to anchor the intake pipe. The project is anticipated to require limited dredging of less than 100 cubic yards (cy)). In addition, the project will alter up to 1.6 acres of land, create up to 0.63 acres of new impervious area, and may impact archaeological resources.

Measures to avoid, minimize and mitigate impacts include: reconstruction of the WTP on the existing disturbed site; replacement and expansion of existing infrastructure; adherence to guidelines in the Drawdown section of the 2004 *Eutrophication and Aquatic Plant Management in Massachusetts Final Generic Environmental Impact Report (FGEIR)* to the greatest extent practicable; coordination with the Division of Fisheries and Wildlife (DFW) at commencement of drawdown; employment of best management practices (BMPs) based on recommendations from DFW; retaining services of a third party independent Environmental Monitor; pumping water from the cove section to the main body of the pond to maintain adequate water supply; constructing a bypass system to transfer water from the main body of pond to Nagog Brook; maintaining dewatering pumps to transfer water from isolated low spots in the dewatered area; provision of a dewatering plan for review and approval by the Acton Conservation Commission prior to implementation; drawdown of the pond at a controlled rate to allow fish and mammals to adapt and relocate; and, implementation of erosion and turbidity controls, and turbidity monitoring. The Proponent has conducted an archaeological sensitivity assessment. The Proponent will incorporate energy efficiency measures into the project design and operation to minimize GHG emissions.

Permits and Jurisdiction

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(3)(a)(1)(b) of the MEPA regulations because it requires State Agency Actions and will alter ten or more acres of other wetlands. The project will require a Water Withdrawal Permit (BRP WM 03), an Approval to Construct a Water Supply Source 70 Gallons per Minute or Greater (BRP WS 20) and an Approval to Construct a Water Treatment Facility (BRP WS 24), a Chapter 91 (c. 91) License and a Section 401 Water Quality Certification (401 WQC) from MassDEP. It is also subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol.

The project will also require: an Order of Conditions from the Acton Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP; authorization from the U.S. Army Corps of Engineers (ACOE) under the General Permits for Massachusetts in accordance with Section 404 of the Federal Clean Water Act; review by the Massachusetts Historical Commission (MHC) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800); and a National Pollutant Discharge Elimination System Construction General Permit (NPDES CGP) from the U.S. Environmental Protection Agency (EPA).

MEPA jurisdiction is limited to those aspects of the project that are within the subject matter of any required or potentially required State Agency Actions and that may cause Damage to the Environment as defined in the MEPA regulations. Because the project requires a c. 91 License, MEPA jurisdiction is functionally equivalent to broad, or full scope, jurisdiction pursuant to 301 CMR 11.01 (2)(a)(3).

Review of the DEIR

The DEIR includes an updated description of the project, identifies existing conditions, contains project plans, and describes potential environmental impacts. The FEIR includes a section that identifies proposed mitigation measures and draft Section 61 Findings for each State Agency that will issue permits for the project. The DEIR describes changes to the project since the filing of the ENF. The DEIR includes a list of required State Permits, Financial Assistance, or other State approvals and provides an update on the status of each of these pending actions. It describes how the project will meet regulatory standards and requirements associated with these actions. The DEIR also provides an update of the local permitting processes for the project. The Town will not seek Financial Assistance in the form of State Revolving Funds (SRF) from MassDEP.

MassDEP comments identify the project's consistency with regulatory requirements and standards and identify outstanding issues that can be addressed through permitting. I have received several comment letters from residents that continue to express concern with the purpose and need of the project and its environmental impacts including land alteration, GHG emissions and historic resources.

Land

The WTP is proposed in proximity to an important water supply. The Town intends to improve the quality and reliability of its water supply while limiting potential impacts. The DEIR indicates that the project will avoid land alteration to the maximum extent feasible while meeting project goals. The DEIR includes existing and proposed land alteration associated with each project element. The elimination of the PV array will significantly reduce the amount of land alteration and clearing from 16,990 sf as described in the ENF to 619 sf.

The project is proposed on two adjacent parcels of land in Acton owned and controlled by the Town of Concord. The proposed WTP will be located on the same parcel of land as the existing facility, Parcel C4-14. The existing access road is located on Parcel C4-32. As directed by the Scope, the DEIR addresses whether the parcels are protected by Article 97 of the Amendments of the Constitution of the Commonwealth of Massachusetts. Based on information in the DEIR, including the elimination of the PV array, I concur with the determination that there is no disposition under Article 97.

Water Resources

The project is proposed to improve the drinking water supply and will bring the existing water treatment facility into compliance with federal and State drinking water requirements. The intake pipe will include a two-level screen and an automated cleaning system. Water will be pumped to the head of the WTP, then flow by gravity along existing infrastructure to the existing Route 2A Pump Station. The Pump Station will pump treated water into the distribution system. The Pump Station houses a UV disinfection system which will provide redundancy.

Under the SWTR Filtration Avoidance Waiver for Nagog Pond, the Town is subjected to rigorous requirements for use of a public surface water supply that does not provide filtration treatment. Nagog Pond is used only as needed to meet peak seasonal demand. It provided approximately six percent of the Town's water supply in 2015, and four percent in 2014. Construction of the proposed WTP will allow the Town to meet the filtration standard of the SWTR and eliminate the need to meet the filtration waiver criteria. MassDEP comments indicate that the Town will have more flexibility in management of its water sources, and Nagog Pond will likely be used on a more routine basis. MassDEP expects that subsequent to the construction of the WTP the Town will use Nagog Pond to provide a higher percentage of its public water supply, which will be offset by a reduction in use of its municipal wells.

The Town's Water Withdrawal Registration and Permit in the Concord River Basin include Nagog Pond as an authorized withdrawal point. According to MassDEP comments, the U.S. Geological Survey estimated the firm yield of Nagog Pond with no releases to be 0.86 MGD.¹ MassDEP comments note that Nagog Pond may be used to provide a somewhat higher percentage of Concord's public water supply once the treatment plant is constructed, which will be offset through less withdrawal from municipal wells. MassDEP comments indicate that the project will not require a new Water Withdrawal Permit; however, if the Town intends to request

¹ Refinement and evaluation of the Massachusetts firm-yield estimator model version 2.0; 2011, U.S. Geological Survey Scientific Investigations Report 2011-5125

a higher firm yield for Nagog Pond, or if the Town intends to install the new water intake at a lower depth than the old intake, then it would require an amendment to its Water Withdrawal Permit. The Town may include the intake design within the permit submittal for the WTP design; a separate BRP WS 20 application is not necessary.

Although the WTP is being designed as a zero discharge facility, the residual solids will be dewatered on-site and then transported off-site for reuse as compost. The Town is required to submit a Waste Disposal Plan that includes a Residuals Management Plan as part of the BRP WS 24 permit submittal. I refer the Town to MassDEP's Guidelines on waste handling and disposal at water treatment facilities (*Guidelines for Public Water Systems*).

Wetlands and Waterways

The Acton Conservation Commission will review the project to determine its consistency with the Wetlands Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00), and associated performance standards, including the stormwater management standards (SMS). Concern regarding activities in the buffer zone, including potential installation of a fence, can be addressed by the Conservation Commission during its review. MassDEP will review the project to determine its consistency with the c. 91 regulations (310 CMR 9.00) and the 401 WQC regulations (314 CMR 9.00) which incorporate the SMS. The project will require a 401 WQC for temporary and permanent impacts to LUW; however, MassDEP comments indicate a 401 WQC for dredging would not be required if dredging is limited to less than 100 cy.

A section of Nagog Pond will be dewatered temporarily to facilitate replacement of the intake pipe under dry conditions. An existing coffer dam, which is partially submerged, will be rehabilitated and augmented with a temporary coffer dam. Once the temporary coffer dam is in place, the Nagog Pond dam outlet structure will be used to dewater the lower section of the pond. The project will temporarily impact approximately 707,000 sf (16.23 acres) of LUW associated with dewatering the pond, and permanently impact 632.5 sf of LUW through placement of the water intake pipe (253 collars). There is an additional 619 sf of work proposed within the 100-foot buffer zone to Nagog Pond associated with the WTP, pavement, and clearing. The Town will hire an independent Environmental Monitor to observe field conditions during drawdown process and review findings with the Acton Natural Resources Department.

The Proponent will submit a 401 WQC for the drawdown of Nagog Pond. In addition, the Proponent will submit a separate 401 WQC if the final design requires dredging of greater than 100 cy. The DEIR discusses how turbidity will be minimized and controlled during dredging of the pond bottom. The DEIR includes a description of mitigation measures proposed for the dewatering of the Nagog Pond.

Nagog Pond is a Great Pond of the Commonwealth. A c. 91 License will be required for the in-water placement of structures (concrete collars and intake screen support column) in jurisdictional areas. The MassDEP Waterways Program will likely classify this proposal as a water-dependent use in accordance with the Waterways Regulations at 310 CMR 9.12.

Nagog Brook is a coldwater fishery which is sensitive to changes in water quality and quantity. The project should be constructed to avoid or minimize impacts to coldwater fish

species. The Town will follow the guidelines outlined in the 2004 *Eutrophication and Aquatic Plant Management in Massachusetts FGEIR* regarding drawdowns. All in-water work should be conducted during low-flow periods throughout the year, to the greatest extent practicable and work should be avoided when flow is high. The DEIR describes the BMPs that will be implemented in accordance with the guidelines outlined in the FGEIR.

The Town will contact DFW during the drawdown period if it will exceed three feet or if it appears that fish may become isolated and salvage operations may be necessary. The Town should prevent heated or sediment laden water from entering Nagog Brook directly during dewatering.

Stormwater

The DEIR includes a comprehensive Stormwater Report prepared in accordance with the requirements of 310 CMR 10.00 and 310 CMR 21.00, and the guidelines of the Massachusetts Stormwater Handbook. The report describes the project's consistency with the MassDEP SMS and the stormwater regulations at 310 CMR 10.05(6) 2 (k) 1-10. In the vicinity of the WTP, runoff will be directed into a series of underground recharge chambers via deep sump hooded catch basins, a drywell, and underground piping. The stormwater management system will provide recharge, attenuate peak discharge, and remove total suspended solids (TSS). Runoff from the access road will be directed towards the existing swale.

The DEIR addresses DFW comments regarding compliance with Standard 6 for Critical Areas. The proposed BMPs will treat the one-inch stormwater runoff volume. The project will include the use of subsurface structures, which are recommended BMPs for compliance with Standard 6. Deep sump catch basins with hoods are proposed to help provide additional TSS removal.

Noise

The DEIR includes a Noise Emissions Analysis which was conducted to assess the project's compliance with the MassDEP Noise Policy that limits sound operations to no more than 10 A-weighted decibels (dBA) above the lowest nighttime ambient sound level at the residential property lines and prohibits a 'pure tone' condition. The analysis indicates that there will be an increase of 1.5 to 9.2 dBA in nighttime sound impacts associated with the operation of the WTP. The results indicate that the proposed WTP design will comply with the MassDEP Noise Policy. In addition, the acoustic analysis indicates that the proposed WTP will not create any pure tones. The project proposes additional noise attenuation mitigation measures resulting in the reduction of noise impacts to a range of 0.3 to 6.0 dBA.

As requested by MassDEP, I encourage the Proponent to reduce the predicted noise impacts to the greatest extent practicable with a goal of limiting the increase to 5dBA or less.

Greenhouse Gas Emissions

The project is subject to review under the May 5, 2010 MEPA GHG Policy and Protocol (Policy). The DEIR includes an analysis of GHG emissions and mitigation measures for the proposed project in accordance with the standard requirements of the Policy. The Policy requires projects to quantify carbon dioxide (CO₂) emissions and identify measures to avoid, minimize and mitigate emissions. The Town consulted with MEPA and the Department of Energy Resources (DOER) to discuss the GHG analysis and potential mitigation measures. The analysis quantifies the direct and indirect CO₂ emissions for the project's energy use (stationary sources). The Scope did not require transportation emissions to be quantified. Direct emissions are associated with natural gas combustion for space heating and hot water. Indirect emissions of CO₂ are associated with electricity generated off-site and used on-site for lighting, building cooling and ventilation, and the operation of process equipment.

The Town of Acton has adopted the Stretch Code (SC) subsequent to its designation as a Green Community under the provisions of the *Green Communities Act of 2008*. Therefore, the project will be required to meet the applicable version of the SC in effect at the time of construction. The GHG analysis used the ASHRAE 90.1-2007 code as the Base Case. CO₂ emissions were quantified for: the Base Case and the Preferred Alternative, which includes all energy saving measures. The proposed building is not over 100,000 sf in size and will therefore be subject to the Prescriptive Option of the Stretch Code.

The analysis used the eQUEST energy design software (version 3.65), which incorporates the U.S. Department of Energy's DOE-2 building energy use model. Since the process area of the building (the first floor) will be heated to a lower temperature than the occupied office and lab (second floor), and since waste heat from the process equipment enters the internal heat balance for the first floor, the two floors of the building were modeled separately in eQUEST.

The project's stationary CO₂ emissions were estimated at 467.4 tons per year (tpy) in the Base Case, with the Preferred Alternative achieving a reduction of 78.1 tpy of CO₂, for a project total of 389.3 tpy of CO₂ subsequent to the implementation of a number of energy efficient design measures. This is equivalent to a 16.7 percent reduction in total GHG emissions compared to the Base Case.

Unlike a typical residential or retail project, building energy use is relatively low; the majority of CO₂ emissions are associated with the water treatment process energy loads. The facility will consume a significant amount of electricity (973 megawatt hours per year (MWh/yr)). The principal mitigation measure for this project is high-efficiency process equipment and the analysis assumes an overall 15 percent reduction² in process electricity use for the following design best practices that are included in the proposed WTP:

- Correctly design pumps to meet anticipated loads;

² The ENF references studies by the Water Research Foundation, EPRI and the American Council for an Energy Efficient Economy which estimate energy efficiency design in a water supply treatment plant can reduce electrical consumption by 10 to 30 percent for individual pieces of equipment

- High efficiency pumps and motors;
- Variable frequency drives (VFD);
- Correctly sized motors; and
- SCADA System to ensure demand response of equipment minimizes electricity use.

The Town plans to incorporate the following energy efficiency measures into the design of the WTP:

- Minimize energy use through building orientation (largest glass area is on east side);
- Higher efficiency windows and building envelopes (roof: R-25; wall: R13ci; and window: double-pane, low-e glass, U value = 0.29, SGHC=0.29);
- High-albedo roofing material;
- High-efficiency heating and cooling systems (heating: 90 percent thermal efficiency; split system HVAC unit EER: 10 percent higher than Code; will consider heat pumps during design);
- Sealing, insulating, and testing HVAC supply ducts;
- Energy management systems;
- High-efficiency LED lighting for the interior of the building (light power density (LPD) for office/lab: 0.7 Watts per sf (W/sf); process area: 0.8 W/sf);
- Energy efficient LED lighting for parking lots;
- Energy STAR equipment in the office/lab (plug loads 10 percent below Base Case);
- Higher efficiency process equipment (up to 15 percent reduction);
- Water conserving fixtures and practices;
- Environmentally friendly building materials;

Other building design and operation mitigation measures, such as peak shaving or load shifting strategies and green roofs, were considered but were rejected because they are either technically/financially infeasible. The Town will pursue both the design support and customer energy efficiency incentives offered by NSTAR.

Two potential on-site alternative energy systems were analyzed as part of the GHG analysis: a solar PV array and a combined heat and power (CHP) system. The solar PV array would have an approximate capacity of 195 kilowatts (kW), which would reduce CO₂ emissions by 72.6 tpy from the estimated 467.4 tons/yr under the Base Case. The PV proposal was dismissed due to significant opposition from abutters. As an alternative, the DEIR proposed a CHP system to provide a cost-effective, grid-independent power supply for the WTP.

Evaluation of the CHP alternative is based on the use of three Tecogen INV-100e+ Ultra-Low Emissions units providing a total capacity of 300 kW. The Tecogen units would be powered by natural gas and result in a 328.2 tpy increase of CO₂ emissions compared to the Base Case for a total of 795.6 tpy. Typically, a CHP unit is more efficient than a traditional system because the waste heat is reused and offsets emissions associated with heating. As noted by DOER, because there is very little heating demand for the project, the actual GHG emissions from CHP would almost double from the Base Case. Based on comments received on the DEIR, the Town has

indicated that it will replace the proposed CHP with power from the electrical grid.³ The facility will include a single gas-fueled emergency generator. Because the proposed emergency generator is greater than 37 kW, it must comply with the Air Pollution Control Regulations and associated requirements for emergency generators at 310 CMR 7.26(42).

The draft Section 61 Findings in the DEIR include a commitment to provide a certification to the MEPA Office, signed by an appropriate professional, indicating that all of the energy efficiency mitigation measures identified in the MEPA process have been incorporated into the project or similar measures to provide equivalent benefits.

Construction Period

The project must comply with MassDEP Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. c.40, s.54 during construction and demolition. The DEIR identifies construction period impacts and measures to minimize those impacts. The DEIR identifies BMPs to control erosion and sedimentation during the construction period to reduce potential impacts to wetland resource areas and fisheries resources. The Town will develop a Traffic Management Program to control vehicles accessing the site. The Town will require the contractor to submit an alternatives analysis for the re-use and recycling of solid materials associated with the demolition of the existing ozone disinfection facility. Existing asphalt surfaces and other earth materials will be reclaimed for use onsite. The Town has evaluated the process mechanical equipment and determined that it has reached its useful service life so that re-use is not practical. Asphalt, brick and concrete (ABC) generated during demolition activities will be processed and disposed in accordance with MassDEP regulations.

I encourage the Town to use after-engine emissions controls that are EPA-certified, or their equivalent, on all of the off-road diesel vehicles/equipment in an effort to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD).

Conclusion

The MEPA regulations at 301 CMR 11.08 (8)(b) indicate that upon review of a DEIR I shall:

1. determine that the draft EIR is adequate, even if certain aspects of the Project or issues require additional description or analysis in a final EIR, provided that the draft EIR is generally responsive to the requirements of 301 CMR 11.07 and the Scope;
2. determine that no substantive issues remain to be addressed and:
 - a. publish notice in the next Environmental Monitor that the draft EIR shall be reviewed as a final EIR; or
 - b. require the Proponent to file responses to comments on the draft EIR and Proposed Section 61 Findings and publish notice in the next Environmental

³ Email from Paul C. Millett, Environmental Partners Group, Inc., on behalf of the Town of Concord.

Monitor that the responses and findings shall be filed, circulated, and reviewed as a final EIR; or

3. determine that the draft EIR is inadequate and require the Proponent to file a supplemental draft EIR in accordance with 301 CMR 11.07.

Based on a review of the FEIR, comment letters and consultation with State Agencies, I find that the DEIR adequately and properly complies with MEPA and its implementing regulations and that no substantive issues remain to be addressed. Therefore, I will publish notice in the next *Environmental Monitor* that the DEIR shall be reviewed as a Final EIR pursuant to the provisions at 11.08(8)(b)(2)(a), which will be subject to a 30-day public comment period.



September 30, 2016

Date

Matthew A. Beaton

Comments received:

09/22/2016	Massachusetts Department of Environmental Protection (MassDEP) – Northeast Regional Office (NERO) and Central Regional Office (CERO)
09/22/2016	Carolyn Kiely
09/22/2016	James Engell
09/23/2016	Massachusetts Department of Energy Resources (DOER)
09/23/2016	Don MacIver
09/23/2016	Elizabeth Crowley
09/27/2016	Acton Historical Commission

MAB/PPP/ppp



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Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

September 23, 2016

Matthew A. Beaton, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Acton/Concord
Nagog Pond Water Treatment Plant
180 & 182 Skyline Drive
EEA # 15446

Attn: MEPA Unit

Dear Secretary Beaton:

The Massachusetts Department of Environmental Protection Northeast and Central Regional Offices (MassDEP-NERO and CERO) have reviewed the Draft Environmental Impact Report (DEIR) submitted by the Concord Public Works, Water & Sewer Division to demolish an existing ozone disinfection facility and replace it with a two-story water treatment plant (7,165 square foot footprint, 9,338 square feet total). This two phase project also will replace the Nagog Pond intake on a 59.793 acre site in Acton (EEA #15446). The treatment plant is designed as a zero discharge facility, where all waste will be recycled, except sanitary waste. The existing 16-inch cast iron intake pipe in Nagog Pond, which is over a century old, will be replaced by a 16-inch high density polyethylene (HDPE) pipe.

Nagog Pond, located in the Towns of Acton and Littleton, is a public surface water supply for the Town of Concord. The intake pipe for the water supply and an ozone disinfection facility are located in Acton. Additional chemical treatment of the Nagog Pond water is provided at a pump station on State Route 2A. The remainder of the land is undeveloped to protect the watershed of the public water supply.

The previously reviewed ENF included a proposal for a solar photovoltaic (PV) array to provide power to the new treatment facility. The DEIR indicates that the PV array has been eliminated from the project due to local concerns. Instead, the proponent proposes to power the facility by three 100-kilowatt gas fired reciprocating engines that will be installed on a concrete pad outside the southwest wall of the facility. The Town is evaluating whether the heat generated

by these engines can also be used to provide space heat to the facility. MassDEP provides the following comments.

Water Treatment

Concord proposes to construct a water treatment plant with a capacity of 1.5 million gallons per day (which is the hydraulic capacity of the existing ozonation facility). The water pumped from Nagog Pond will be treated at the plant via potassium permanganate for pre-oxidation, polyaluminum chloride for coagulation, two-stage flocculation, dissolved air flotation for clarification, ozone for primary disinfection, granular activated carbon filtration for particulate removal, potassium hydroxide for pH adjustment, zinc orthophosphate for corrosion control, sodium hypochlorite for secondary disinfection, and sodium fluoride for fluoridation. Concord has conducted a treatability study of the proposed treatment method. MassDEP approved a pilot study report that presented the results of this study on March 25, 2015.

The Surface Water Treatment Rule (SWTR) requires that public surface water supplies receive filtration treatment, unless several criteria for water quality and watershed protection are met. Concord presently has a “Filtration Avoidance Waiver” for Nagog Pond, in accordance with the SWTR. The criteria that must be met under this waiver are rigorous, and as a result Concord has tended to use Nagog Pond as its “last-on, first-off” source, used only as needed to meet peak seasonal demands. Nagog Pond provided only about six percent of Concord’s water supply in 2015, and four percent in 2014. Construction of the proposed filtration plant will allow Concord to meet the filtration standard of SWTR, and will eliminate the need to meet the many filtration waiver criteria. As a result, the Town will have more flexibility in management of its water sources, and Nagog Pond will likely be used on a more routine basis. MassDEP expects that Nagog Pond may be used to provide a somewhat higher percentage of Concord’s public water supply once the treatment plant is constructed, which will be offset by Concord withdrawing less water from its municipal wells.

The DEIR states on page 35 that the permits required from MassDEP will include a Water Withdrawal Permit (MassDEP Permit Category BRP WM 03) and Approval to Construct a Water Supply Source 70 Gallons per Minute or Greater (BRP WS 20).

The Town of Concord already has a Water Withdrawal Registration and a Water Withdrawal Permit in the Concord River Basin that include Nagog Pond as an authorized withdrawal point. A new Water Withdrawal Permit is not required as part of this project. An Approval to Construct a Water Supply Source permit involves review of the proposed construction design of a source’s permanent pumping facilities prior to construction. MassDEP allows the construction design of a source and the construction design for that source’s water treatment to be combined into a single permit submittal. Although the project includes a new water supply intake from Nagog Pond, review of this design will be less complicated than the review of the water treatment plant design. The Town is welcome to include the intake design within the permit submittal for the water treatment plant design (BRP WS 24). MassDEP does not require submittal of a separate BRP WS 20 application. The Town is proposing to construct the water treatment plant prior to construction of the intake — if the designs for these two phases of construction will be finalized on separate timelines, the Town can opt to submit the designs as

separate applications. In its review of the DEIR, MassDEP has not reviewed the “Plans of the Proposed Nagog Pond Water Treatment Plant” presented in Appendix C.

The U.S. Geological Survey estimated the firm yield of Nagog Pond with no releases to be 0.86 million gallons per day (*Refinement and Evaluation of the Massachusetts Firm-Yield Estimator Model*, 2011, Scientific Investigations Report 2011-5125). If the Town seeks to establish a higher firm yield for Nagog Pond, or if the Town intends to install the new water intake at a lower depth than the old intake, then it will need to obtain an amendment to its Water Withdrawal Permit (BRP WM 02).

The DEIR clarifies that the Route 2A pump station, where ultraviolet disinfection and chemical treatment feeds are currently provided, will continue to be used for ultraviolet disinfection when the Nagog Pond treatment plant is built.

Although the water treatment plant is being designed as a zero discharge facility, the solids portion of the treatment plant residuals will be transported off-site, after being dewatered on-site. The residual solids will be used in preparation of a compost material. As part of the treatment plant design (BRP WS 24) permit submittal, a Waste Disposal Plan must be submitted that includes a Residuals Management Plan. MassDEP’s Guidelines on waste handling and disposal at water treatment facilities can be found in *Guidelines for Public Water Systems*, Chapter 5, Section 5.10.

Wetlands

The DEIR responded to MassDEP CERO comments on the ENF regarding the issuance of a 401 Water Quality Certification (WQC). As stated on page 54 of the DEIR, a 401 WQC for the drawdown of Nagog Pond will be submitted. Additionally, a 401 WQC will be submitted if the final design requires greater than 100 cubic yards to be dredged.

MassDEP CERO also requested that the Proponent discuss how turbidity will be minimized and controlled during dredging of the pond bottom. The DEIR includes a full description of mitigation measures proposed for the dewatering of the pond in Section 9. An Environmental Monitor will also be onsite during drawdown of the pond to observe field conditions.

Air Quality – CHP and Emergency Engines/Generators

MassDEP believes that CHP as a distributed power supply is a very promising energy alternative for this project. The Project Proponent has identified the use of three (3) Tecogen INV-100e+ Ultra Low Emissions CHP units or equivalent CHP units as a power source for the Proposed Project. These CHP units would be subject to permitting via the certification process through MassDEP’s Environmental Results Program at 310 CMR 7.26(43) or (45). Should the project will be equipped with emergency generators equal to or greater than 37 kW, each of those emission units must comply with the regulatory requirements in 310 CMR 7.26(42).

Air Quality - Noise

In addition, the DEIR indicates that there will be an increase of 1.5dBA to 9.2dBA in nighttime sound impacts associated with the operation of the water treatment plant (Table 4 of the noise study). With noise attenuation mitigation measures, however, the increase in noise impacts would be reduced to a range of 0.3 to 6.0 dBA. MassDEP recommends that the FEIR include a firm commitment to reduce the predicted noise impacts to the greatest extent practicable, and ideally under a 5dBA increase. Sound impacts should also be evaluated for the proposed CHP units. MassDEP regulates sound/noise at 310 CMR 7.10 and reviews sound evaluations in accordance with the Department's Noise Policy 90-01.

The MassDEP Northeast and Central Regional Offices appreciate the opportunity to comment on this proposed project. Please contact James.Persky@state.ma.us at (978) 694-3227 in MassDEP-NERO for further information on the water supply issues, Joseph.Bellino@state.ma.us, at (508) 767-2709 if you have questions regarding the wetlands, Kevin.Tyson@state.ma.us at (617) 292-5705 for air quality requirements for the emergency power generators, and Ed.Braczyk@state.ma.us, at (978) 694-3289, for air quality permitting and noise impact issues. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us, MEPA Review Coordinator in MassDEP NERO at (978) 694-3338 and Stella.Tamul@state.ma.us, MEPA Review Coordinator in MassDEP CERO at (508) 767-2763.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Kevin Tyson, MassDEP-Boston
Eric Worrall, Tom Mahin, Jim Persky, Sean Griffin, Nick Zessoules, MassDEP-NERO
Andrea Briggs, Stella Tamul, Denise Child, Joe Bellino, Michelle Delemarre, MassDEP-CERO

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September 22, 2016

Andrew A. Beaton
Secretary of Energy & Environmental Affairs (EEA)
Attn: MEPA Office, Ms. Purvi Patel, MEPA Analyst
100 Cambridge Street, Suite 900
Boston, MA 02114

Subject: EEA #15446
Public Comments on Draft Environmental Impact Report for the Town
of Concord Proposed Nagog Pond Water Treatment Plant

Dear Secretary Beaton and Ms. Patel:

These comments are provided on the Draft Environmental Impact Report (DEIR) for the Town of Concord's proposed water treatment plant at Nagog Pond in Acton, MA (EEA #15446). My comments address the following topics:

1. Article 97 comments.
2. Irregularities in Concord's sound measurements.
3. Greenhouse gas emissions.
4. Alternative analysis regarding facility power.
5. Intake pipe alternatives.
6. Fence issues.
7. Legal borrowing limits on the project.
8. Other discrepancies and/or questions with the DEIR.

Finally, I request that the DEP Central Region, which is the town where the proposed facility will be located, have an opportunity to provide inputs into this project.

Summary of Comments:

In summary, my comments will demonstrate:

1. Concord's proposal violates Article 97 of the Constitution of the Commonwealth, and Concord must be mandated to comply with Article 97's procedural requirements.

2. Concord must re-measure background noise levels so as to accurately reflect the historic sound levels emanating from the facility, and not utilize a new, recently-added noisy site addition in order to elevate background noise levels at the site just prior to measuring background.
3. Concord must be required to implement stringent sound barrier protections into their plans.
4. Concord's CO2 emissions of up to 328.2 tons/year is unacceptable and harmful to people and the environment.
5. An alternative analysis is needed to evaluate alternative measures of powering the facility, taking into account the request by Acton Selectmen for Concord to consider utilizing Acton's new electric power aggregation program.
6. Concord grossly exaggerates the impact of not replacing their intake pipe. DEP reports that, in 2014, Concord only obtained 4% of its water from Nagog Pond. In the event of a pipe failure, Concord already has access to water from the Metropolitan Water Resources Authority (MWRA), and therefore Concord has a readily-available source for this 4% of needed water. This IS NOT a matter of Concord being unable to meet its water demands.
7. The fence that Concord is proposing for this proposed project is not included in the DEIR. In fact, the DEIR discusses the posting of no trespassing signs as a means of deterring trespassing. The proposed fence is inappropriate for the site in question.
8. Concord exceeds their legal borrowing authority for this project, and can not borrow in excess of their legal authority for this project.
9. Concord's project description inadequately describes the current operations at the site.
10. Concord must submit a concrete plan that explains exactly how it will treat and handle the "heat" that is generated from the cogeneration generators.
11. The change in how the project is powered (from solar to cogeneration generators) is a **SIGNIFICANT** project change, and must be reflected in the DEIR as significant (and not insignificant).
12. Concord's DEIR contains two very different plans to protect Nagog Brook. Concord needs to clarify which approach they will be using. Comments can not be provided until Concord's proposal describes in detail a single, consistent approach to protecting Nagog Brook.

13. Concord states that excavated soils will be maintained on-site, but then says excavated soils will be stockpiled off-site. Which is it? Comments can not be provided until Concord's proposal describes one consistent approach to handling excavated materials.
14. Concord must address threatened species at the site in addition to endangered species, especially the presence of the bald eagle at Nagog Pond, and how Concord plans to protect the habitat of the bald eagle.
15. Concord's wetlands discussion needs to be corrected to demonstrate that practically the entirety of their proposed water treatment plant is being constructed within 100' of the wetland, which is protected under the Town of Acton Wetlands Protection Bylaw.
16. Concord needs to clarify that it will not be paving, seeding or inserting loam within Nagog Pond. It is inconceivable how paving, seeding or inserting loam within Nagog Pond would be needed to mitigate the effects of construction.
17. Traffic management, to include no passage over private roads and means/limits to protect residents on public roads, are needed.
18. A review by the DEP Central Office, which has jurisdiction over the Nagog Pond site in Acton, is needed. This project was reviewed by the Northeast Region, which is not the DEP region with jurisdiction over this site location.

Discussion:

The project before you is essentially the same project as discussed in the ENF for Concord's proposed Nagog Pond Water treatment plant. Concord is seeking to construct a new 9,338 square foot, two-story industrial water treatment plant in a residential neighborhood. The "change" is the deletion of the previously-proposed solar panels, and the addition of cogeneration generators to power the plant. Despite what would appear to be "limited" need for comment, there are significant and material misstatements in the DEIR before you, especially when compared with the plans filed with the Town of Acton.

Article 97 of the Constitution of the Commonwealth:

The Secretary's Certificate on Concord's ENF requires that Concord address whether the land upon which the facility will be located was acquired for Article 97 purposes. I disagree with Concord, and the legal reasons for why Article 97 applies to this project are discussed below.

Concord's discussion on Article 97 is long-winded in an attempt to confuse the reader. Concord identifies the two most critical court decisions regarding Article 97, yet Concord tried to duck direct application of the court decisions by discussing

such matters as town meeting votes, early laws, etc. As these two court decisions state, the most important factor in determining whether a parcel of land is subject to Article 97 is the wording in the deed. I urge you to look at the case-law decisions, and break through Concord's long-winded answer to ascertain the truth.

A discussion of the cases, and the impact of the cases on Concord's land around Nagog Pond, follows.

Relevant Court Cases

In the case of Board of Selectmen of Hanson v. Lindsay, 444 Mass. 502 (2005), the court ruled that, for Article 97 purposes, **the wording of the underlying deed is what is operative in determining whether Article 97 applies to a parcel.** Specifically, in Hanson, Town Meeting had voted that a foreclosed property would be held for conservation purposes. – which would mean that the property is entitled to Article 97 protections. However, the deed to the property did not reflect the Town Meeting vote. **Therefore, the Supreme Judicial Court (SJC) ruled that because the deed did not indicate that it was obtained for conservation purposes, Article 97 does not apply to this parcel.**

In the case of Mahajan v. Department of Environmental Protection, 464 Mass. 604 (2013), the court ruled that even though a parcel of land contained open space, it was acquired for urban renewal purposes, and not for Article 97 purposes. Specifically, the SJC held that the wording of the deed needs to demonstrate that the land was acquired for Article 97 purposes.

Two important considerations result:

1. Town meeting votes and other discussions are irrelevant – the controlling manner for determining whether Article 97 applies is the wording of the deed, and
2. It is a well-known fact that lands acquired before Article 97 became part of the Constitution of the Commonwealth, but which were acquired for Article 97 purposes, are still afforded Article 97 protections.

Application of the Caselaw to Concord's Property Demonstrates that Article 97 Applies

In DEIR Appendix O, Concord states that “both parcels were expressly acquired for the purpose of establishing and maintaining a public water supply system.” That is blatantly untrue.

In this case, Concord's “takings” document is the actual deed because it was through a “taking” that Concord acquired title to the land in question. Concord's “takings” document is contained in Exhibit D to Appendix O in the DEIR. Concord's “takings” document contained 4 “different” takings, each with their own reasons for each taking. Concord took:

1. The water and land under Nagog Pond (item “a,” Registry Book 3457, Page 221)
2. The rights-of-way for water pipes (Item “b,” Registry Book 3457, Page 221)
3. **Seven parcels of Nagog Pond waterfront property (Item “c,” Registry Book 3457, Page 227)**
4. Rights-of-way to access the seven waterfront parcels (Item “d,” Registry Book 3457, Page 233).

For Article 97 purposes, the reasons for Concord “taking” of the waterfront parcels bordering Nagog Pond are as specified below:

“Said Town (i.e., Concord) hereby takes the following described parcels of land in the towns of Acton and Littleton, Massachusetts for the purpose of:

- (1) PRESERVING AND PROTECTING THE PURITY OF THE WATERS OF NAGOG POND, and for**
- (2) Uses INCIDENTAL TO the construction, operation, maintenance, repair and renewal of said water supply system to be derived from Nagog Pond.”¹**

This language in the legally-recorded “takings” document proves that the lands were expressly taken for Article 97 purposes. They were taken to “preserve and protect the purity of the water,” and “for uses INCIDENTAL” to a water treatment plant. Contrary to Concord’s assertion, this language in the takings document does not specify that the lands were taken for the purpose of establishing and maintaining a public water supply. Nor is a very large, full-service water treatment plant “incidental to” providing a public water supply – a full service water treatment plant is not “incidental to” providing a water supply system. “Incidental” means ancillary, and not primary (as Concord contends). This land WAS NOT acquired for a primary water supply system.

Please do not get confused by Concord’s use of terms such as Parcel C4-14, etc. Attached is a map of the parcels of land around Nagog Pond that Concord took in their 1909 “taking.”² The owner of each parcel is identified, and it corresponds with the owners and parcel numbers specified in the takings recording of Book 3457,

¹ Registry of Deeds, Book 3457, page 227. Pages 227 through 233 are included as an attachment because page 227 specifies the purposes of the acquisition of the waterfront parcels, and the subsequent pages in the Registry filing show the exact “taking” of the seven individual parcels that, combined, make up parcel C4-14 that Concord refers to in its Article 97 Analysis.

² Source: Nagog Pond Watershed and Solar Feasibility Study, Draft July 17, 2013, Figure 1.

pages 227-233 (attached). Also attached is a Table contained in Concord's Feasibility Study for this project entitled "Town of Concord Nagog Pond Watershed Land Holdings."³ At the bottom of the table, you will notice that Parcel C4-14 includes all seven parcels of land acquired in the 1909 "taking."

Of these seven parcels, the only parcel that is of concern here is the Fourth Parcel because that parcel is where the proposed new water treatment plant would be built. The owner of this parcel in 1909 was the Pilgrim Milling Company. This company never questioned the Concord taking, and there is no follow-up deed which contains further wording as to the purpose for which the land was acquired.⁴ Therefore, as it relates to the parcel where the treatment plant is proposed to be constructed (i.e., the Fourth parcel), Article 97 clearly applies.

With regard to the Palmer parcel (parcel C4-32), this property is not the location of the water treatment plant. A portion of the project driveway crosses the Palmer parcel. No other part of this parcel is being developed under Concord's proposal. This deed is silent as to the reason the land was acquired. Under the caselaw, the Palmer parcel is therefore not afforded Article 97 protections. Concord's detailed information regarding town meeting votes for this parcel are irrelevant in the court's eyes.

Because Concord intends to build its water treatment plant on the Fourth parcel, and Article 97 applies to this Parcel, Concord must go through Article 97's procedural requirements because the deed to that parcel specifies that it was being purchased for "preserving and protecting the purity of the waters of Nagog Pond," and "for uses incidental to the construction, operation, maintenance, repair and renewal of said water supply system to be derived from Nagog Pond."

Again, do not get distracted by all of the unnecessary, irrelevant discussion in Concord's Article 97 materials. According to the State's Supreme Judicial Court, the controlling factor is the wording in the deed, which means that Article 97 applies to this project.

Finally, Concord claims that they are not disposing of the property and therefore, even if Article 97 applies, its application is irrelevant. This claim is not supported by any legal arguments. The reason that no supporting legal arguments are provided by Concord is because Concord knows full well that, according to the 1974 Attorney General opinion, a legal disposition is not needed. Specifically, the Attorney General stated as follows:

"Within an agency or political subdivision, any land, easement

³ Source: Nagog Pond Watershed and Solar Feasibility Study, Draft July 17, 2013, Page 1-2.

⁴ There are subsequent deeds at the Registry for parcels First, Second, Third, and Fifth parcels.

or interest therein, if originally taken or acquired for the purposes stated in Article 97, may not be 'used for any other purpose' without the requisite two-thirds role-call vote of each branch of the Legislature. It may be helpful to note how Article 97 is to be read with the so-called doctrine of 'prior public use,' application of which also turns on a change in use."⁵

This Attorney General Opinion continues as follows:

Article 97 applies "in circumstances which cannot be characterized as a disposition – that is, when a transfer or change in physical or legal control does not occur. A change in use within a governmental agency or within a political subdivision would serve as an apt example."⁶

In this case, in 1995 and 1996 Concord constructed an ozone treatment plant on Article 97 lands (i.e., the Fourth parcel subject to the 1909 taking by Concord). Concord did not go through Article 97's procedures when clearing open space obtained "for the purpose of preserving and protecting the purity of the waters of Nagog Pond" and for "uses incidental" to the water supply. The Secretary's Article 97 Land Disposition Policy states the consequences for violating Article 97. An inappropriate change in use in 1995 and 1996 that is not "corrected" by going through Article 97's procedures can not now continue to be further modified into a full service water treatment plant without undergoing Article 97's procedural requirements.

Andrew Goldberg, Assistant Attorney General in the Environmental Protection Division of the Office of the Attorney General, has been looking at this matter. I urge you to contact Attorney Goldberg to obtain further insight into how Article 97 applies to this project, and its applicability here.

Finally, the Secretary's Certificate on Concord's ENF had indicated that Article 97 applies to this project. Specifically, Page 5 of the Secretary's Certificate on the ENF states as follows: "Supplemental information provided during MEPA review indicates that the land is protected by Article 97 of the Amendments to the Constitution of the Commonwealth."⁷ My legal and fact-based arguments included above prove that this statement that Article 97 applies still stands true today.

⁵ Opinion of the Attorney General Regarding the Disposition of Public Lands Under the "Clean Environment" Amendment to the Constitution of Massachusetts, by Attorney General Robert H. Quinn (1974), p. 501.

⁶ Opinion of the Attorney General Regarding the Disposition of Public Lands Under the "Clean Environment" Amendment to the Constitution of Massachusetts, by Attorney General Robert H. Quinn (1974), p. 501

⁷ Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form (February 12, 2016), EEA # 15446, page 5.

Irregularities in Concord's Sound Measurements/Need for More Protective Sound Requirements:

a. Concord manipulated background noise levels, and must be required to retest background noise levels with all newly-added noises shut off

Concord seems to have intentionally manipulated background noise levels in order to keep this proposed project within DEP's guidelines, which **prohibit an increase of 10 or more dBA above background noise levels**. According to Michelle Delemarre, the noise inspector for the DEP Central Region in Worcester, an applicant **is not allowed to increase the ambient background sound levels in their favor prior to establishing baseline background sound levels**.

In Concord's Noise Emissions Analysis Memo (DEIR Appendix K), background sounds are described as follows: "The principal sound sources were:

1. **The WTP (Water Treatment Plant) operations**,
2. Aircraft flyovers, and
3. Insects."⁸

Prior to June of this year, there was absolutely **NO SOUND** emanating from the water treatment plant operations. That is because all of the operations of the ozone facility were contained inside a brick building. However, in late June of this year, two trailers were placed on the site. These trailers contain ozone treatment machinery and assist in the treatment of ozone at the site. However, these trailers are external to the present building, and they contain no external sound barriers whatsoever -- they were just placed at the site in late June of this year.

On July 28, 2016 around 4 p.m., I was walking at the site and came upon a technician taking sound readings. The technician told me that he was measuring background to determine the **INCREASED SOUND** that the new Concord generators would make **ABOVE THE EXISTING NOISE LEVEL**. I told the technician that this wasn't true background -- true background was zero because the trailers were temporary and just added to the site. The technician said he would tell his superiors.

Concord's report states that background **INCLUDES** sounds from the water treatment plant -- meaning that the loud sounds from the two new trailers are included. So Concord's report measures "background" as the sound with the new, recently-added trailers operating. Again, DEP's Central Region noise staffer told me that an applicant is not allowed to artificially increase ambient background sounds in their favor.

⁸ Nagog Pond Water Treatment Sound Study, DEIR Appendix K, page 4.

Concord must be required to re-measure background levels with the recently added trailers turned off. The true sound measurement is as the site has historically sounded – not as it is sounding with trailers added within 30 days of the baseline sound levels being established.

b. Concord must be required to incorporate stringent sound barrier protections into plans

Concord addresses noise in DEIR Section 6.8. The detailed sound analysis (Noise Emissions Analysis Memorandum) is contained in Appendix K to the DEIR. The sound analysis contains different models of sound, based on the extent of sound protections incorporated by Concord.

Despite many assertions throughout the report that Concord will “try” to obtain increased sound buffering, Concord states in Section 6.8 of the DEIR summary that the highest sound levels will result (“an increase of 1.5 dBA to 9.2 dBA above existing nighttime ambient sound levels is predicted at the nearest residences...”). Therefore, Concord has no plans to implement sound buffering techniques. Concord’s report shows that they can achieve lower increased sound levels by implementing more stringent (i.e., more costly) measures. Concord should not be allowed to forego implementing sound buffering strategies simply because implementing them are costly.

Finally, it must be noted that the 9.2 dBA sound increase is the sound WITH THE NEW TRAILERS AT THE SITE OPERATING. As discussed above, background has been unacceptably inflated by the recent pre-testing addition of the noisy trailers at the site. If the new noise resulting from the generators will be approximately 9.2 dBA **WITH** the two recently-added trailers, it is likely that, if background without the new trailers operating is reestablished, the increase in sound from the generators will easily be over 10 dBA, a clear violation of DEP noise policy.

Concord must be required to (1) re-measure background with the trailers turned off, and (2) incorporate the most stringent noise mitigation protections that are available.

Greenhouse Gas Emissions:

Concord totally misrepresents its greenhouse gas emissions in the DEIR. In Section 2.2 (Notice of Project Change), Concord states that “emissions from the proposed (generator) units are well below the MassDEP Environmental Results Program (ERP) emissions thresholds established for NOx and carbon monoxide.” This makes you believe that the entire project is in compliance with state greenhouse gas policies. However, the “Revised MEPA Greenhouse Gas Emissions Policy and Protocol” specifies the following:

“At the current time, the analysis will focus mainly on the primary GHG (greenhouse gas), carbon dioxide (CO2). While there are other GHGs, CO2 is the predominant contributor to global warming, and emissions can be calculated for CO2 with readily accessible data.”⁹

In Section 2.2, Concord makes no mention of CO2 releases from the proposed generators. Reading Section 2.2, the reader assumes that all greenhouse gas emissions levels are met by this project. This is far from true.

In fact, it is only when you read page 33 that you realize that the emissions of CO2 exceed state mandates. Specifically, on page 32 and 33, the following sentence states the true magnitude of CO2 emissions from this project: “The Tecogen units would be powered by natural gas and would result in an increase CO2 emissions by 328.2 tons/year from 467.4 tons/year estimated under the base case.” Concord goes on to describe this 328.2 ton/year increase in CO2 emissions as “an acceptable alternative.” Such an increase is blatantly UNACCEPTABLE. The project went from zero emissions from solar panels in the original submission, to the release of 328.2 TONS of greenhouse gasses annually with the current plan. The way that Concord “hides” the CO2 emissions data, despite the fact that MEPA guidelines specifically state that CO2 emissions are the best way to measure greenhouse gas implications from a project, calls into question the veracity of the entirety of Concord’s DEIR.

Alternative Analysis Needed Regarding Facility Power:

Under the “Alternatives to the Project” section of the DEIR (Section 4.0), alternative ways to power the proposed facility are not discussed. Concord MUST be required to address alternative means of powering this facility, and especially be required to formally evaluate energy sources that are more environmentally friendly than cogeneration. Concord does not evaluate whether to connect to the electrical grid with Eversource as a means of powering the facility.

It should be noted that Acton is presently implementing an electricity aggregation program which would allow Acton electricity customers to purchase either electricity as they are doing now, electricity with some “green” components, or “really green” electricity. Acton’s Selectmen requested, in a September 12th public hearing, that Concord specifically consider the benefits of Acton’s power aggregation program for this proposed facility. By requiring Concord to study alternative methods for powering the facility, you will be allowing Concord the opportunity to formally evaluate this specific question from the Acton Selectmen.

The “Alternative Analysis” discussion is incomplete without a discussion of alternative ways to power this facility – especially because Concord’s only change was in how to power the facility. An analysis as to what other options were

⁹ Revised MEPA Greenhouse Gas Emissions Policy & Protocol, Effective Date May 5, 2010, page 3.

considered in addition to cogeneration – especially electricity obtained through the grid – is not discussed. Alternatives to powering the facility must be formally addressed and analyzed by Concord. At present, only a cursory discussion of alternative sources of power is provided in the response to public comments on the ENF. That is insufficient discussion of alternatives and does not rise to the standard required for alternative analysis discussions in a DEIR.

Intake Pipe Alternatives:

The DEIR, on page 18, contains a gross exaggeration about the intake pipe. The report states that “If the intake pipe is not replaced, there is a high risk of failure which would cut off the water supply entirely, **leaving the Town of Concord unable to meet its water demands to Concord and Acton.**” DEP, in its ENF comments on this proposed project, stated the following: “... Concord has tended to use Nagog Pond in recent years on a limited basis to meet peak seasonal demand. In 2014, Nagog Pond provided only about 4% of Concord’s water supply ...”¹⁰

HOW CAN A WATER SOURCE THAT ONLY PROVIDES 4% OF THE TOWN’S WATER ON A SEASONAL BASIS, IF IT BECOMES UNAVAILABLE, MEAN THAT CONCORD WILL BE UNABLE TO MEET ITS WATER DEMANDS? This statement by Concord in the DEIR is a gross exaggeration in an attempt to make it seem as if being cut off from seasonal access to Nagog Pond’s water supply is a life-or-death situation for Concord. In fact, the opposite is true. As the DEP memo also states, **Concord is seeking to rely more on Nagog Pond as a water source.**¹¹ **“which in turns means that it will likely withdraw less water from its municipal wells.”** Concord’s assertions must be tempered to reflect the reality of what being cut-off from Nagog Pond would mean – it would mean that Concord needs to find an additional source of 4% of the town’s water usage.

What Concord does not tell you in the DEIR is that Concord already has access to water from the Massachusetts Water Resources Authority (MWRA) with an existing hook-up through the Town of Bedford. This MWRA connection can certainly provide the approximately 4% of additional water that Concord would need if they were unable to access water from Nagog Pond.

Fence Issues:

DEIR Section 2.3 says that there will be “fencing.” However, no fence plan is provided in the DEIR. In fact, the DEIR specifically states that the opposite will occur. On DEIR page 37, we are told that Concord will implement “regulatory controls” to include “posting to deter trespassing...” Posting to deter trespassing IS NOT a fence. It means a sign saying “no trespassing.” However, in the Special Permit application filed with the Town of Acton (which is the site of Nagog Pond),

¹⁰ December 29, 2015 letter on EEA #15446 to MEPA Unit, page 2.

¹¹ December 29, 2015 letter on EEA #15446 to MEPA Unit, page 2.

Concord specifies that a fence that is approximately one mile in length – possibly longer – is proposed for the site. A copy of Concord’s fence map is attached. It is highly circumspect that you (MEPA) would be told that Concord will simply install “no trespassing” signs, while the Town of Acton is presented with a complete map detailing a fence bordering practically the entirety of Concord’s property holdings. Concord has blatantly misrepresented the fence/border issue to MEPA, and that is unacceptable. We urge MEPA to rule that the fence that Concord is seeking approval from Acton authorities is unacceptable.

Legal Borrowing Limits Applicable to Concord

Concord’s proposal violates the provision in Chapter 201 of the Acts of 1884 that prohibits Concord from borrowing in excess of \$50,000 for work related to drawing water from Nagog Pond. The Acts of 1904 allow Concord to borrow another \$100,000 in borrowing for Nagog Pond. Concord’s 2016 town meeting passed a provision authorizing Concord to borrow over \$14 million for this and other projects, in clear violation of these borrowing limits (even if these limits are adjusted upwards to reflect the value in today’s dollars). Therefore, this project must be denied the ability to go forward unless Concord pays for the project without borrowing.

Other DEIR Discrepancies/Questions:

- 1. Project Description:** The description of the present scope of water treatment at Nagog Pond (Section 2.1) neglects to inform you that Concord installed two temporary trailers at the site in late June. Concord’s Water & Sewer Superintendent, Alan Cathcart, described these trailers at a September 12, 2016 public hearing in Acton as ozone treatment trailers that are needed because the ozone treatment machinery inside the building is aging. Therefore, the description of current operations is incomplete. The presence of these ozone treatment trailers means that some ozone treatment is carried on outside of the present ozone building at the site. This new, exterior treatment adds significant external sounds to the site – all the way to and beyond the property boundary (refer to the sound discussion above). Therefore, Concord needs to correct Section 2.1 of its submission, and describe the current site operations properly.
- 2. Heat from Generators:** In section 2.2 of the DEIR, Concord states that it is “evaluating use of the heat generated by these units (i.e., the three proposed cogeneration generators) to provide space heat to the WTP building.” In testimony on September 12, 2016 at an Acton public hearing, Concord said that it was also “considering” using the heat generated for radiant flooring. Significant heat is produced as these generators create electricity. Will the excess heat be released into the air? Significant questions exist due to the lack of a plan for handling the heat that the

generators will create. A specific plan – with clearly-identified ways that the heat will be used – is imperative in order to ensure environmental protection and safety of the surrounding residences.

3. **Notice of Project Change – From Solar to a “Distributed Power Supply” (i.e., cogeneration generators) – This Is A SIGNIFICANT change:** In Section 2.2 (Notice of Project Change), ***Concord states that “this project change is considered to be insignificant.”*** I strongly disagree. Concord initial proposal was an environmentally-friendly source of electricity (i.e., solar) which was proposed for an inappropriate site because of clear-cutting of trees, solar glare, proximity to homes, archaeologically significant structures, and Article 97 issues (to name only a few of the reasons why solar was inappropriate for this site). Concord’s new plan is significantly environmentally unfriendly and noisy (see above), and therefore cogeneration generators are a **significant change**.

4. **Protection of Nagog Brook:** In its ENF comments, DEP indicated that Nagog Brook (which flows from Nagog Pond) is a significant coldwater fisheries resource, and DEP requested that Concord add measures to protect this important resource. However, Concord’s DEIR contains two very different and inconsistent plans for addressing DEP’s concern. Which of these very different plans is Concord intending to implement?
 - a. DEIR p. 13 – Concord states that they will dewater Nagog Pond, and “controlled releases may be conducted at Nagog Brook, if needed.” Such a practice whereby they “may” release water into the brook will definitely harm downstream coldwater fisheries resources. This page further states that “any water that is pumped (for release downstream to Nagog Brook) will be monitored visually for the transport of soils/sediment. If soils/sediments are detected, then they will be allowed to settle within the dewatering area before being discharged to Nagog Brook.” It isn’t protective enough to simply look “visually” for sediments.

 - b. DEIR page 27: “By-pass piping will also be installed that will allow streamflow into Nagog Brook to continue.” This seems to conflict with the statement on DEIR page 13 quoted above. So which is it – periodic releases into Nagog Brook (p. 13), or continual water release into Nagog Brook (p. 27)?

 - c. DEIR page 40: “It is anticipated that discharges to Nagog Brook will rarely occur during these construction activities.” Again, this assertion seems to contradict other assertions made by Concord. Which is it – by-pass piping (as stated in b above) or “rarely”?

- d. DEIR page 39: "... a bar rack will (be) installed immediately in front of the dam outlet structure to capture large debris and to prevent it from being discharged to Nagog Brook ... In addition, turbidity curtains will be deployed ahead of the dam outlet to ensure that turbid waters are not discharged into the Brook." So which is it – visual inspection (page 13) or screening of water before it is released into Nagog Brook?

In addition to coldwater fishery resource implications of Nagog Brook, key downstream water resources are fed by Nagog Brook. These downstream resources are critical to the health of a very large aquifer. Therefore, it is important that the appropriate flow and quality of water into Nagog Brook be maintained. A single, consistent plan for Nagog Brook must be mandated by MEPA. The DEIR proposes two totally inconsistent approaches for addressing Nagog Brook issues, and the final EIR must correct and clarify which approach Concord intends to use to protect Nagog Brook. It is only when a single approach is presented that the public can comment on this aspect of the project.

5. Soil Stockpiling Inconsistencies:

The DEIR is inconsistent with how Concord intends to handle excavated soils:

- a. DEIR Page 13: "All existing sediments and soils will remain and no new soils will be added. During the excavation process sediments will be stockpiled adjacent to the pipe trench and re-used to backfill the pipe." (Note: This statement is essentially repeated on DEIR page 19).
- b. DEIR Page 42: "Soil materials either dredged from Nagog Pond or used as part of the intake pipe construction are not anticipated to be maintained on-site. In general, soil materials used for construction will be delivered to the site (on) an as-needed basis."

These are inconsistent statements. Will the excavated soils remain on-site? Will they be trucked off-site and brought to the site when needed for fill? A single, consistent method for handling excavated soils is needed. And it is only when Concord's plan is known that the public can provide comment on this aspect of the proposed project.

6. Endangered Species:

The DEIR only addresses endangered species. However, a "threatened" species under Massachusetts' regulations is present at the site – the bald eagle. There is no plan to protect the bald eagle in the DEIR. The

Massachusetts Division of Fisheries and Wildlife states that eagles require large, forested area, a good supply of fish, unimpeded views, and reasonable freedom from human disturbance. Concord's project, as proposed, would threaten the habitat of the bald eagle and drive away this species, contrary to the requirements of the Massachusetts Division of Fisheries and Wildlife. Protection of bald eagle habitat must be addresses by Concord.

7. Archaeological Sensitivity Analysis:

Appendix J contains the Archaeology Sensitivity Analysis that Concord commissioned to be performed. The February 24, 2016 report indicates that two new archaeologically-significant finds were located. One, called "Quarry Pit 2," is right on the border of work being proposed by Concord. **A plan to protect this Quarry Pit 2 needs to be developed, especially during construction. A significant "no-build" zone must be established around Quarry Pit 2 during construction to ensure its protection. It should be noted that Section 6.5 (Historical and Archaeological Impacts) does not even address this new site and it's close proximity to the project development area, which it MUST do.**

8. Wetlands Discussion (Section 6.2 – page 28 & 29)

The discussion in 6.2 significantly UNDERESTIMATES the impact of work within the wetland. Acton's wetland bylaw includes any activity performed within 100' of the wetland. However, Concord's discussion in Section 6.2 makes it appear as if very little work is being performed in the wetland setback. For example, although Concord states that "the remainder of the project will take place in upland area, and *a portion* of the Buffer Zone to BVW." That statement is blatantly untrue. Practically 100% of the project is occurring within 100' of the wetland. Concord partially admits this in Section 5.4 on page 24, when it admits that the existing ozone facility "is within the 75-ft wetland buffer..." **To then say that an enlarged building – enlarged by 530% -- is only partially within the buffer zone is a blatant lie.** Section 6.2 needs to be amended to reflect the 100' buffer zone requirement of the Town of Acton, and to reflect that practically the entirety of the proposed project is being performed within this 100' setback.

9. Mitigating "the effects of construction activities within Nagog Pond."

I certainly hope that no areas within Nagog Pond will be paved. However, the DEIR contemplates such paving. Specifically, the DEIR, on page 43, states as follows: "Additional measures to be utilized to mitigate the effects of construction activities **within Nagog Pond during intake pipe replacement** include the following ... all disturbed areas will be restored to pre-construction conditions (loam and seeding, paved areas) after construction activities are completed." For work within Nagog Pond, there should be

ABOLUTELY NO loam, seeding, or paving. It seems as if Concord's consultant took a generic project and substituted it here. A DEIR should be specific to the site in question. As such, there must be no loam, seed, or paving "WITHIN NAGOG POND."

10. Traffic Management

DEIR Section 9.3.5 (Traffic Management) states that "vehicles will be traveling to the project area from Skyline Drive to the access road." What isn't stated is that this project, historically, was not located on a roadway. It was located on an easement, and the legal address was "Off Hazelnut Street." With the new Quail Ridge development, Concord petitioned to have the street address of the facility changed to Skyline Drive. However, Skyline Drive is a private road. The only "legal," "public" access to the Concord Nagog Pond facility is through the public roads of the Acorn Park community, of which Hazelnut Drive belongs. The Final EIR must recognize that all traffic flow into and out of the Concord Nagog Pond facility will be over the public roads of Acorn Park, and NOT over the private roads of Quail Ridge. In addition, it should limit construction, operation and delivery traffic to specific times of day to ensure protection of families living within Acorn Park.

State Review of the DEIR

As you know, Concord is located in the DEP Northeast Region, while Acton is located in the DEP Central Region. For some reason, this DEIR was given to the Northeast Regional Office to review, and not to the Central Region. Since the Central Region is more familiar with Acton and its special circumstances, I respectfully request that this DEIR be provided to the DEP Central Region in order to provide additional comments. The need for comments by the DEP entity responsible for the specific Nagog Pond site should be sufficient enough to justify a delay in issuance of the Secretary's Certificate until the DEP Central Region provides comments on this DEIR.

Thank you for taking the time to consider my comments.

Sincerely,

Carolyn M. Kiely, Esq.

Attachments:

1. Registry of Deeds Information – Relevant Portions of Concord's 1909 "Takings" Document (Book 3457, Pages 227-233) – Identifying The Reasons for the Taking, and the Specific Parcels Taken (and their Owners)
2. Table – Town of Concord Nagog Pond Watershed Holdings

3. **Map of the Waterfront Nagog Pond Parcels Acquired in Concord's 1909 "Taking" (with owners identified)**
4. **Fence Map from Town of Acton Special Permit Application**

The EIR (EEA #15446) dated August 15 was sent to me on disc via USPS. No version more recent was sent. It does not acknowledge, let alone address, the impact of an 8-foot high, *one-mile* long chain link fence that Concord proposed two weeks later, on August 29, as part of this project. A rough sketch of this proposed fence is attached. It is what Concord submitted to the Town of Acton on August 29.

Perhaps inclusion of this fence and its environmental impact is not required in reporting to you. Yet, it's a very long, high fence that will have clear impacts on wildlife. Officials from Concord say there will be 6 to 8 inches open at the bottom for small wildlife to pass through. But in this area to be fenced are deer (many) and several coyote dens (we hear them in early spring, the noise coming from the bulbous peninsula not far from our house, and we occasionally see them in the area). There are also foxes, mink, and fisher cats, as well, perhaps, as other animals that will not be able to pass through that opening.

The proposed fence also appears to be through a flood plain and across a cold water brook, Nagog Brook. That is hard for me to confirm but I believe it so.

The proposed fence line passes *directly* by a tree on which a bald eagle was perching in early August. The picture attached was taken August 12 from my back yard, a fact that can be visually confirmed by anyone who comes to the yard. The Natural Heritage Endangered Species Program (NHESP) in the Mass. Division of Fisheries & Wildlife states: "Protection and enhancement of potentially suitable wetland and forest habitats, and maintenance of known breeding, roosting, and wintering areas will be critical to long-term conservation of Bald Eagles in Massachusetts. To achieve these objectives, landowners should first work to limit development near shorelines of large water bodies, as loss of nesting habitat is a primary threat to Bald Eagles in this state."

The tree on which the eagle is perching was struck by lightning in June 2010. Thunderstorms come over Nagog Pond from the west and northwest. When they reach the shore on the eastern side there are often lightning strikes. The proposed fence cuts off all fire fighting access to a heavily wooded area which has never been cleared of underbrush, dead leaves, pine needles, etc. and that has had brush fires in the past. Just a few weeks ago the Acton Fire Department sent personnel through the area to fight a brush fire (apparently started by lightning) on the small island near the area proposed to be dewatered. With the proposed fence in place, there would be no access for fire fighting equipment unless someone from Concord rushed to provide it. Even then, it could take very significant time to reach a fire. In some places there are wooden buildings adjacent to the proposed fence line.

The EIR (EEA #15446) says little about rare and endangered species (5.5 and 6.3): "There will be no impacts to rare and endangered species as a result of the project. 2008 Massachusetts Priority and Estimated Habitat online maps created by NHESP was used to confirm that there are no rare or endangered species located within the project area."

I believe no field study whatsoever was done. The perched bald eagle is an example of a threatened species that has been seen within this project area, has been sighted fairly

frequently, fishes in the Pond, and has perched on surrounding trees. Moreover, I have seen and heard the common loon on the Pond. Acton as a town is listed as having 7 species that are of Special Concern or Threatened, one of which is the Eastern Pondmussel.

To my knowledge, the only survey done of wildlife was an armchair computer one based on NHESP 2008 maps, whose supporting data may be older than that—all concerning an area where there has been *considerable* development in the last decade and therefore a reduction in wildlife habitat, flora and fauna. I hope that the EIR is not considered sufficient for a project of this nature, where it seems 16 acres are to be drained and tens of acres enclosed completely by a high fence and the shoreline itself (the proposed fence runs out into the water at its two ends).

The EIR states: “A review of existing available private well information in Acton indicates that two of these properties on Breezy Point Road (#10 and #14) have private domestic wells. These two wells are reported to be bedrock wells drilled to depths greater than 300 feet below the surface.” Our well at #14 is actually 292 feet, i.e., close to but not greater than 300 feet. I have no information that it is a bedrock well or not. I don’t know what difference this makes, but the EIR should have been more accurate.

No hydrological study has been done. The drafters of the EIR could have consulted the owners but did not, and the EIR conducted no actual hydrological study about potential effects on residential wells. Instead, the EIR states, “it is anticipated that the proposed drawdown will not have any impacts on these private water supply wells.” That’s not reassuring and may not be accurate.

The noise level tests were conducted at a time when two *temporary* ozone generators outside the current building were running. Their noise was included in the ambient level! Carolyn Kiely, who will submit her own comment to you, personally witnessed the way this measurement was taken.

Draining of the inlet area raises serious questions about fish kills and the alteration for many months of a delicate, shallow water and shoreline ecosystem.

Finally, I want to state that although I live in near proximity to Nagog Pond, I’ve never set a toe in it, never fished in it, never swum in it, and never skated or boated on it. My wife and I own three horses (there have been horses here for four decades at least). We clean up and truck manure away—we clean up on any trail anywhere. My wife carries a large plastic bag on the trail. She herself contacted the Concord Water Department to alert them about one other farm that might not be doing the same. A number of times over the last twenty-three years I’ve called Acton authorities when any illegal activities seemed occurring. Despite claims by the Town of Concord (presented without evidence of any kind) that the frequency of such activities is increasing, this does not seem the case, in fact, perhaps the contrary given increased public awareness and vigilance. I know the old Pond warden, Charlie Dutton, whose family has generations of experience here, and I believe he would confirm this. James Engell, 14 Breezy Point Rd., Acton, MA 01720



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENERGY RESOURCES
100 CAMBRIDGE ST., SUITE 1020
BOSTON, MA 02114
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Charles D. Baker
Governor

Matthew A. Beaton
Secretary

Karyn E. Polito
Lt. Governor

Judith F. Judson
Commissioner

23 September 2016

Matthew Beaton, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114
Attn: MEPA Unit

RE: Nagog Pond Water Treatment Plant, Acton, Massachusetts EEA #15446

Cc: Arah Schuur, Director of Energy Efficiency Programs, Department of Energy Resources
Judith Judson, Commissioner, Department of Energy Resources

Dear Secretary Beaton:

We've reviewed the Draft Environmental Impact Report (DEIR) for the Nagog Pond Water Treatment Plant. Our comments are limited to GHG associated with the building, PV, and CHP. The DOER did not review the proposed improvements associated with the water treatment system itself.

We are pleased to see numerous efficiency measures analyzed and adopted. We are also very encouraged to see a significant effort to incorporate on-site renewables, as well, including 195 kW of ground-mounted solar PV and combined heat and power (CHP).

We understand that, unfortunately, solar PV is currently off the table due to neighborhood objections, despite significant efforts by the proponent, while CHP remains an option. Usually, the DOER is supportive of CHP. However, for the reasons stated below, we do not recommend CHP be utilized for this project.

Our detailed comments are as follows:

1. It's noted that the building is less than 10,000 sf in size and proposed building mitigation follows prescriptive stretch code, incorporating improved walls, window, and roof insulation, as well as HVAC, lighting, and other improvements.

Nagog Pond, EEA #15446
Acton, Massachusetts

2. We recommend that the proponent engage with the local utilities as soon as possible to investigate energy efficiency incentives with their new construction program. (Links provided to the right.)

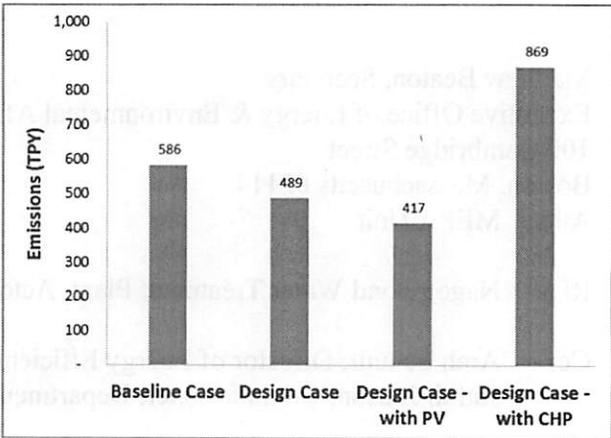
New Construction EE with National Grid and Eversource:

<https://www.nationalgridus.com/Trade/EE-Programs-Solutions/CI-New-Construction-Services>

3. Because the facility has near-negligible heating needs, the use of CHP for this project would actually increase emissions significantly. We estimate that, as proposed, GHG emissions would increase by a factor of nearly 2 compared to the design scenario without CHP. (See below)

This occurs because, unfortunately, CHP's usual advantage of offsetting concurrent heating load is not mobilized, significantly impacting its effectiveness.

The DOER does not recommend the use of CHP as proposed for this project.



Sincerely,

Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources

Littleton Conservation Trust
43 Foster Street
Littleton, MA 01460

September 22, 2016

Mr. Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs
100 Cambridge St., Suite 900
Boston, MA 02114

Attention: Ms. Purvi P. Patel, EIT (Purvi.Patel@state.ma.us)
Massachusetts Environmental Policy Act (MEPA) Office

RE: EEA No. 15446

- (1) Comments to MEPA and EEA Secretary Matthew Beaton, regarding Concord's proposed, Acton-based, new and greatly expanded Nagog Pond Water Treatment Plant described in part in the Draft Environmental Impact Report (DEIR);**
- (2) Request for Supplemental Report due to:**
 - a. Insufficient Information for Public Review and Comment in DEIR:**
 - i. Failure to present feasible and prudent alternatives to proposed development;**
 - ii. Inadequate information on criticality of open space abutting proposed site;**
 - iii. Inadequate information on archaeological sensitivity and data in proposed site area and immediate environs ; additional lack of any archaeological study to understand area or contact with knowledgeable local historians and/or archaeologists;**
 - b. Introduction of new Major Project Elements not described in DEIR:**
 - i. Proposed high barrier fence approximately one mile long abutting shoreline of great pond in high archaeological sensitivity area and impeding area wildlife movement; and**
 - ii. Proposed conversion of current low volume Nagog Pond water supply to Concord from just an additional source to Concord's Primary Water Source and demote Concord's current Concord-based six ground wells to Secondary Water Sources.**

Dear Secretary Beaton and MEPA Analyst Patel:

Introduction:

Attached are my comments and recommendations to the current DEIR EEA # 15446 (Concord's proposed Nagog Pond Water Treatment Plant) and five attachments of material never before submitted to MEPA. These attachments provide the major substance of my comments and recommendations on the DEIR under review. These attachments are referred to in the below comments.

Locus Map and Alternatives Not Yet Examined or Described – Need Supplemental Study:

Attachment A is a locus map showing the current "Raw Water Wetwell" at Nagog Pond's Spillway and through gravity flow water is transported 1.3 miles to the current Chemical Water Treatment Facility and Pump House at 300 Great Road (MA Rt 2A/119), referred to by the proponent as a "Satellite Site". Additionally on page A-1 and A-2, a proposed feasible alternative site is shown (the 25 acre Concord Municipal Light Plant, CMLP, 2 miles further on MA Rt 2A/119.) On page A-3 is Figure 1 from the proponent's ENF showing where they propose to build their expanded and completely new \$14 million Water Treatment Plant (at the current Raw Water Wetwell site) and is annotated to show the location of the current Chemical Treatment Facility/ Pump House on the state highway.

The project proponent states the need to add mandated filtration to their water stream and that the current Chemical Treatment Facility/ Pump House site is too small. The project proponent could locate needed new

facilities “downstream” from this Pump House either on its currently owned 25 acre Concord Municipal Light Plant site or any other nearby property on the state highway as it sends the water toward Concord for drinking water consumption.

At a recent Acton public hearing the project proponent claimed that they needed to serve a small number of residential and commercial customers in Acton along the state highway. It was countered with a response that Acton could easily serve those customers if desired. Feasible and prudent alternatives exist to consolidating a new and expanded \$14 million Water Treatment Plant next to Nagog Pond on the far side of extensive residential neighborhoods solely serviced by narrow private roads. The relocation of a new and expanded comprehensive Water Treatment Plant in a sensitive area for open space, wildlife, and with high potential impacts to archaeological resources is unnecessary.

Similarly, the extensive impacts of the new water intake system should also be better explored. In 1909, the original water intake pipes were floated out on rafts and sunk in place with little impact to the sensitive area.

It is requested that a Supplementary Report be requested to address (1) alternative means to provide necessary filtration (and any other desired water treatment) to the current water stream downstream of the satellite site and (2) find less obtrusive means to withdraw water from Nagog Pond with lessened potential impacts.

Concerns for Open Space, Corridors for Wildlife and Public Access, and Landscape Insufficiently Described – Need Supplemental Study:

There is almost nothing mentioned in the DEIR in these areas, and it is dismissive in approach. Please refer to Attached Letters B (Friends of Pine Hawk) and E (Acton Land Stewards) which addresses these issues. In particular refer to pages B-3 for section on “High Biodiversity in Nagog pond Area”, pages B-3 and 4 for section on “Open Space and Connectivity Concerns in Nagog Pond Area – Need for Permanent Protection and Low Impact Public Access”, and pages B-4 and 5 for sections on “Conclusions and Recommendations”, and to E-1 for Concerns and Recommendations.

Nagog Pond is a Great Pond and Outstanding Resource Water. The Landscape vistas recorded are within the DEM/DCR Landscape Inventory. Much has been written about the Nagog Pond Area by naturalists/ local historians focusing on the Native American habitation, landscape vistas, and the Natural Resources (e.g. John Mitchell). Open Space and Recreation Report Plans and DCR Reconnaissance Reports from the host communities who occupy Nagog Pond lands (Acton and Littleton) cite its high value. Photos, notecards, and historic postcards often focus on Nagog Pond. Pond side conservation lands in Littleton have been purchased in part (with Self-Help and APR state funds) due to the landscape vistas and critical connecting wildlife corridors.

With the implementation of water filtration, there is no longer a need to prohibit public use of these lands. There needs to be formal public access as well as permanent land protection on the Nagog Pond lands. As mitigation, the project proponent should provide a completed solution providing public access and a means for permanently protecting pond side lands with conservation easements.

There is a request that a Supplementary Study be conducted in these areas and a formal plan be provided for appropriate low impact public access and connectivity with other open space/conservation lands, and be created in collaboration with abutting communities of Acton and Littleton.

Native American Archaeological Presence and Resources, and Nagog Pond Area Archaeological Investigations Described – Need Supplemental Study:

Please refer to Native American Archaeological section on page B-2 and 3, and Conclusions and Recommendations on pages B-4 and 5 which raises many concerns about the unreported Native American presence in this area (as stated explicitly in the MA DCR Littleton Reconnaissance Report) and the extensive amount of their stone structures. Attachment C is a map that illustrates the recent designated Native American

Settlements (Nashoba Praying Indian Plantation and New Town Indian Village) in this area including partial extent under Nagog Pond. Nagog Pond has been artificially raised about 10 feet (via mill dams and Concord Water Department since 1909) since Native American occupation. No study has been performed in this now underwater area. Settlements of Native Americans and early settlers have existed on lands now under water and what are now islands, including a purported burial site on a nearby Nagog Pond island.

Attachment D contains extracted maps from the Town of Acton's 2008 Professional Archaeological Laboratory (PAL) study of this area showing sensitivity of archaeological resources for both pre-contact and post-contact periods. Where the proponent proposes work has high sensitivity. A recently proposed high almost mile long barrier fence (not included in DEIR documents but presented at the September 12, 2016 Acton public hearing by the project proponent) is located in a high sensitivity area.

The DEIR Appendix J contained a previous archaeological study from UMass (November 1994, page 9) stating "Archaeological research in this area of Acton has developed primarily of the interest of local amateur archaeologists rather than as a product of planned scientific studies." Additionally under General Methodology (pages 3 and 4) for understanding the area's archaeological and historical resources, two of the methods include: "Conducting interviews with local informants, amateur archaeologists, area historians, and other individuals knowledgeable in the history and prehistory of the area of investigation." and "Canvassing local residents as to the location of known historic and archaeological resources." In 1994, UMass did connect up with two individuals knowledgeable about quarries but completely missed a very rich resource of local authors, historians, and archaeologists, especially those knowledgeable about Native Americans. Since then, and for this DEIR, no communication has been made with such local knowledgeable resources including the Historical Societies in both Acton and Littleton. Extensive work has been conducted locally including some in collaboration with Native Americans and others with good knowledge of Native American landscape preservation and their built stone structures and effigies. Recently a well-established local historian performed a field trip by the current Nagog Pond spillway and wetwell and noticed a previous stone turtle effigy was destroyed. Also recently local historian Dr. Tim Fohl investigated the area and sensed possible indications of Native American presence in stone work and other artifacts.

Local historians and archaeologists need to be included in a current archaeological study of the Nagog Pond Area to be impacted, such as Dan Boudillion, Peter Waksman, John Hanson Mitchell, Dr. Tim Fohl, Linda McElroy, Professor Curt Hoffman and his doctoral students, William Klauer, Brewster Conant, David Whitcomb, Doug Harris, Dr. Rae Gould, Dr. Stephen Mrozowski, and contacts at the Nipmuck Nation Tribal Office.

Both the Mass Historical Commission and Mashpee Wampanoag Tribal Office commented on the revised ENF, requesting an intensive location survey be made of the revised project to assist in the determination of potential sensitive areas and, if significant areas found, then make recommendations on how to proceed and mitigate avoidance alternatives. At the Acton public hearing on September 12, 2016, the project proponent declared to the surprise of the public that since the solar farm component of the project was being deleted that no archaeological study would be performed. This is a request that a Supplementary Study include a formal archaeological study to be performed in the Nagog Pond Area given the high sensitivity for archaeological resources as shown on Attachment D-1 and 2, the proximity of Native American settlements as indicated on Attachment C and their known use of adjacent lands, the limited 1994 UMass study, and the totally unknown area of Nagog Pond land submerged since its last Native American occupation.

Major Project Changes Requiring Additional Review and Comment:

The recent presentation (September 12, 2016 Acton public hearing) by the project proponent of an approximately mile long, eight foot high fence at the edge of Nagog Pond in an area of high archaeological sensitivity and its impacts upon the open space, landscape vistas, and wildlife movement is of concern and needs to be provided to the public at large, reviewed and commented upon. It should be noted that Nagog Pond is a central connector/corridor for wildlife and it is likely to impact large animals (bear, deer, bobcat, etc.) as well as to disturb recently observed pair of bald eagles that is frequenting the Breezy Point peninsula (which is in the development area). The proposed fence is not described in the DEIR and is a newly introduced project element.

It should be noted public fencing is not used in many other surface water bodies, including the state's Quabbin and Wachusett Water Supplies.

The project proponent verbally indicated at an Acton Public Hearing that the Town of Concord plans to designate and use the Nagog Pond Water Supply, currently a secondary and additional water supply for them, as its primary water supply, and use their current six ground wells as secondary water supply. This is a major change with many impacts and needs to be described for public review and comment.

If you have any questions or desire clarification, please do not hesitate to contact me. Thank you for the opportunity to comment on issues of regional and local concern.

Respectfully yours,

Donald MacIver, president and trustee
Littleton Conservation Trust
(Owners and stewards of Sarah Doublet Forest and Nature Reserve, core of Nashoba Praying Indian Plantation and successive New Town Indian Village)
LittletonConservationTrust.org
maciver01460@gmail.com

Attachments:

- A. Locus Maps (1) for Nagog Pond Water Treatment Plant Elements (showing critical elements in Acton and Concord); (2) an appropriate alternative for siting a new industrial type water treatment plant of the magnitude proposed; and (3) an annotated ENF Figure 1 indicating current WTP Elements vs. proposed consolidated WTP at edge of Nagog Pond (3 pp);
- B. Letter from Acton-based Friends of Pine Hawk, an archaeological study and education forum, along with their recommendations (5 pp);
- C. Area Map highlighting some formal boundaries of Native American settlements (as designated by Mass Bay Colony), from Littleton Historical Society and local historian. Note settlement area now submerged by artificially raised Nagog Pond water levels (1 p).
- D. Town of Acton PAL Maps of Archaeological Sensitivity in Nagog Pond Area, 2008 (2 pp); and
- E. Letter from Acton Town appointed Land Stewards with their recommendations (1 pp).

Cc: Senator James Eldridge (James.Eldridge@MASenate.gov)

Acton Selectmen and Town Manager
Acton Historical Society
Acton Historical Commission
Acton Conservation Commission
Acton Planning Department
Acton Open Space Committee
Acton Conservation Trust
Friends of Pine Hawk
Littleton Historical Society
Littleton Historic Commission
Littleton Conservation Commission
Mass Historical Commission
Mass Board of Underwater Archaeological Resources

Patel, Purvi (EEA)

From: Elizabeth Ahern Crowley <aherncrowley@hotmail.com>
Sent: Friday, September 23, 2016 10:24 AM
To: Patel, Purvi (EEA)
Subject: Comments on MEPA Project #15446 - Nagog Water Treatment Plant, Acton, MA

Dear Ms. Patel,

I am writing as a citizen of Acton and have concerns about the proposed MEPA Project #15446 - Nagog Water Treatment Plant, proposed by the Town of Concord to the Town of Acton. Please accept my comments below and I hope that they promote careful review at the MEPA. This project has an adverse and detrimental impact to the Town of Acton affecting neighborhoods, wildlife, wetlands, fisheries, habitats, ect. and I look to the MEPA to investigate the details of the environmental impact further. Thank you for your thoughtful consideration and I invite you to contact me if you have any questions.

Elizabeth Ahern Crowley
99 Concord Road
Acton, MA 01720
978-263-1387

Comments to MEPA Project #15446 - Nagog Water Treatment Plant:

In the project's ENF, on the table located on page 2, it is indicated that the surface water withdrawal is currently 0.75 million gallons per day for just 3 months of the year. However, upon completion of Project #15446, the water withdrawals from Nagog Pond will be 0.75 million gallons per day, CONTINUOUSLY! The annual withdrawal will be significantly increased and cause a dramatic shift in the pond and its environs. Additionally, the ENF Certificate identifies Nagog Pond as a Massachusetts DEP designated Outstanding Resource Water and Great Pond. In addition, the Division of Fisheries and Wildlife identified Nagog Brook as a cold water fishery.

Will the creation of the proposed Water Treatment Plant, and the resulting increased water withdrawal have an adverse and detrimental impact on Nagog Pond?

Will the creation of the proposed Water Treatment Plant, and the resulting increased water withdrawal have an adverse and detrimental impact on how water flows to the fishery of Nagog Brook?

Is Nagog Pond required to release water to feed Nagog Brook?

How does laying the pipe at the bottom of the pond impact the wetlands?

Should these issues be addressed in the Wetland and Waterways of the Environmental Impact Report?

Nagog Pond is an area with Native American and colonial history, it was part of the Nashoba Praying Indian Village – has there been an inventory and review to determine if there are significant archeological or historic sites to be concerned about with the construction and fencing and powering of a 9,000 SF building?

Nagog Pond is a conservation and passive recreation area that is considered home to hundreds of species – one birding site has counted 122 different species sighted around the pond – Are there significant species that are impacted by the construction of a 9,000 SF building, surrounded by 8ft fencing and generated by a gas-fed power plant?

Part of the project will be to construct a gas-fed power plant, will require security lighting and fencing, will increase daily traffic to up to 15 vehicles, including 2-3 chemical trucks a day – Doesn't this increased pollution, traffic and reduced access have an adverse impact on the habitats, wildlife and environs of the Nagog Pond?



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MEPA

LATE
COMMENT

MASSACHUSETTS 01720

ACTON HISTORICAL COMMISSION

September 16, 2016

Secretary Matthew A Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02108

Re: Town of Concord Nagog Pond Water Treatment Plant
MEPA Draft Environmental Impact Report
EEA Number: 15446

Dear Secretary Beaton,

The Acton Historical has reviewed the Draft Environmental Impact Report for the proposed Nagog Pond Water Treatment Plant, dated August 15, 2016 and we find that the submittal has been modified to include fencing that was previously not present.

We recommend that the Massachusetts Historical Commission take the following action:

- 1) Review and comment on the revised fencing included in the submittal.
- 2) Require an Archeological Site Form for the property.

We feel that these steps are necessary to provide an adequate historical review and mitigate any unnecessary archeological impacts to the site.

Please let us know if you have any questions or comments.

Respectfully submitted,

William Dickinson
Chairman
Acton Historical Commission

Cc: Massachusetts Historical Commission
Acton Board of Selectmen

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SEP 12 2016

MEHA



MASSACHUSETTS HISTORICAL COMMISSION

MASSACHUSETTS HISTORICAL COMMISSION

LATE COMMENT

Ms. [Name] [Address] [City, MA] [Phone] [Email]

Dear Ms. [Name]:

Thank you for your letter of [Date].

The Commission reviewed the final environmental impact report for the [Project Name] and we find that the submitted has been completed in accordance with the requirements of the Massachusetts Historical Commission Act.

The Commission has reviewed the final environmental impact report and the historical information provided. The Commission has no further comments on the revised impact report included in the submission.

If you have any questions or need further information, please contact the Commission at [Phone] or [Email].

Sincerely,

[Signature]

[Name]

[Title]

[Address]

[City, MA]

[Phone]

[Email]