

Herring Pond Wampanoag Tribe, Inc.

Eel River Watershed Association

Jones River Watershed Association

Community Land & Water Coalition

December 1, 2023

Rebecca Tepper
Secretary, Energy and Environmental Affairs
Commonwealth of Massachusetts
Boston MA 02108

c/o MEPA Analyst, Nicholas Moreno, nicholas.moreno@mass.gov

Re: MEPA EEA No. 16758: EENF Plymouth Wastewater Treatment Plant Expansion

Dear Secretary Tepper,

Thank you for the opportunity to comment on MEPA EEA #16758 for the expansion of the Plymouth Wastewater Treatment Facility (WWTF) located in Camelot Park. The Town seeks to divert the 90% of the wastewater currently discharged to Plymouth Harbor to discharge into the Plymouth Carver Sole Source Aquifer by increasing the volume at the WWTF Site to a total of 3 million gallons per day. The Project Site is located in Camelot Park, Plymouth, adjacent to the Eel River, wetlands and brooks (“the Site”). The Site is in the South Coastal Watershed in the Eel River Watershed.

The Town of Plymouth (“Town”) requests a single Environmental Impact Report (EIR) instead of a full Draft EIR followed by a Final EIR. For the reasons stated here, we urge the Secretary to require a full Draft EIR and Final EIR. The Town’s justification for avoiding a full EIR is that a prior EIR for the WWTF in the 1990s, supplemented by the Expanded Environmental Notification Form (EENF) satisfies MEPA. It does not. Further, the alternatives analysis is insufficient. Alternatives proposed in the 1990s EIR have been ignored.

These comments are submitted by the Herring Pond Wampanoag Tribe, Inc. of Patuxet-Plymouth (Tribe), Eel River Watershed Association (ERWA), the Jones River Watershed Association (JRWA), and Community Land & Water Coalition (a project of Save the Pine

Barrens, Inc.) (CLWC). The Tribe and each non-profit community groups has members that live, work and/or recreate in the Plymouth area and who are impacted by the Project. The Project is located on the unceded ancestral lands of the Tribe who used the Eel River system for millenia before first contact with Europeans. The groups' missions' include the protection and stewardship of lands and waters and community members in the Plymouth area. This includes protecting the drinking water in the Sole Source Aquifer. *55 Federal Register 32137*. The Aquifer covers 199 square miles and is the sole drinking water source for about 200,000 people. The Aquifer is designated under the Safe Drinking Water Act, a federal law, due to its sandy soils, high transmissivity, and its vulnerability to contamination. The WWTF and the proposed expansion are in the federally protected Aquifer. The Aquifer is shallow and intercepted by wetlands, streams and ponds that also may be impacted.

The commenters support efforts to reduce sewage and wastewater discharges to Plymouth Harbor. Diverting these waste flows from the Harbor to discharge them into on to land where they infiltrate into the Sole Source Drinking Water Aquifer shared by Plymouth with 7 other Towns requires careful and thorough study and alternatives analysis. The EENF does not provide this.

In addition to addressing the issues here, the Town and subsequent MEPA documents should provide a thorough, non-technical description of the Plymouth wastewater and drinking water supply system and identify which municipal bodies are responsible for each aspect of these municipal services. Such a description should describe:

- The inputs to the WWTF (storm drains, number of industrial, commercial and residential wastewater dischargers) and the contaminants included in the incoming waste;
- The pretreatment program applicable to and being used by the industrial users discharging to the WWTF and where to find this information;
- How the incoming wastewater is treated and to what standards (secondary? tertiary?);
- The water quality of the wastewater discharged after treatment, and how this information is reported to the public and where to find this information; and
- The WWTF practices for the disposal and/or storage of sewage sludge generated by the WWTF.

This Project as currently proposed is another poorly planned, false, short-term solution to the Town's growth problems. A further alternatives analysis is required that includes water conservation and reuse of the wastewater, as described below.

I. MEPA Regulations require a Draft and Full EIR, not a Single EIR

The MEPA Regulations require a full EIR, not merely an EENF and single EIR as the Town requests. See, 301 CMR 11.06(8)(a) through (d). The MEPA regulations, 301 CMR 11.06(8) allows a Single EIR only if four criteria are met. (“When issuing a scope in accordance with 301 CMR 11.06(7), the Secretary shall ordinarily require a final and draft EIR, but may allow a single EIR, provided that the Secretary finds that the expanded ENF requesting a single EIR in accordance with 301 CMR 11.05(8)...meets four criteria in subsections (a) through (d). The EENF meets none of the four criteria.

First, the EENF does not describe and analyze all aspects of the Project, as shown below. 301 CMR 11.06(8)(a). The data used in the EENF and appendices is incomplete and outdated. The Site description and Town’s activities on the Site do not reflect the current conditions on the Site and in the surrounding Watershed. The EENF does not contain a sufficient alternatives analysis. (EENF Section 8). The 1997 EIR that the Town seeks to rely on included the alternative of wastewater reuse as mitigation for the WWTF nitrogen pollution. The EENF does not consider or analyze this alternative. EENF should analyze the alternative of pumping the wastewater to the Pine Hills golf course and using it to water the golf courses, where it could be discharged to the groundwater there. This would offset the Pine Hills Water Management Act Permit and need for additional withdrawals there. This would avoid impacts to sensitive wetlands, rivers and streams around the WWTP site. It would also move the project out of an Environmental Justice neighborhood to an area that bears none of the environmental burdens associated with the industrial and commercial uses in the Town such as the WWTF/sewer plant.

Second, the EENF does not provide a detailed baseline in relation to which potential environmental and public health impacts and mitigation can be measured. 301 CMR 11.06(8)(b). The data used here is also outdated and incomplete. It relies on a 1997 EIR and provides “Snippets” without a description of how those relate to the current proposal. The *Appendix G: Nutrient Management Data Report Operational Monitoring Program Data Report for 2020* does not adequately address topics in the *Eel River Technical Advisory Committee Evaluation* (Appendix F). Appendix G is outdated and recites the Town’s land conservation activities with vague references to sampling results. None of this is in “non-technical language” as required by 301 CMR 11.07(d). For example, the sampling result tables do not state whether or not the results are within permit limits or whether there are exceedances and violations. The Town has not devoted the financial and professional resources necessary to address the potential environmental and health impacts of the WWTF’s ongoing operation. The current “baseline” after about 25 years of the WWTF’s operation needs to be established with more data and analysis before additional wastewater can be discharged to the Sole Source Aquifer.

Third, the EENF does not demonstrate that the planning and design of the Project use all feasible means to avoid potential environmental impacts. 301 CMR 11.06(8)(d). The design and planning is based on the 1990’s EIR for a Site and a municipality that bears no resemblance to the town of 30+ years ago. The Site is being clear-cut and mined for sand and gravel, the land around it has been and is being mined, large commercial and residential developments have covered the area with impervious materials and more large projects are planned for the Eel River Watershed, including more dense development at Pine Hills, and an 800 seat mega-church. The

once forested “County Woodlot” less than 2,000 feet west of the Project, was forested land as of 2015. The Town allowed 30 acres to be mined and it is now a solar facility not the promised cranberry bog. The Town allowed a commercial sand and gravel mining operation to level one of the Town’s highest hills and leave a 10 acre-50 foot deep open pit mine. Both of these were done with no MEPA review or hydrology assessment. The County Woodlot site is being proposed for uses such as a casino or racetrack.

Photo below:

Left: 10-acre open pit mine on the County Woodlot

Right: 30-acre solar facility on open pit mine



The Town has not undertaken the water use reductions analyzed in the 1997 EIR. The Town’s consultant Environmental Partners has issued three water-sewer reports warning that municipal boards should stop approving dense residential developments/apartment/town house complexes because the Town cannot supply sufficient water. The Town’s master plan is ignored and its draft water supply management plan is almost 5 years old.

The Project does not use all feasible means to avoid environmental impacts, which at a minimum would include reducing water use and enforcing the stormwater regulations.

Appendix F, *Eel River Technical Advisory Committee Evaluation*,” is based on outdated data about residential development in the Eel River Watershed. It states, “The MassGIS database was used to calculate the areas of various land uses within the Eel River watershed. Present and future potential house counts were collected from the Town of Plymouth Planning Department. For the Pine Hills Development, the Green Company provided estimates of house counts, recreational areas and other development.” This information must be updated.

An EIR is required under 301 CMR 11.06(7)(d) because the Project is located within a Designated Geographic Area around an Environmental Justice Area. The MEPA Regulations state this clearly,

“The Secretary **shall require** an EIR for any Project that is located within a Designated Geographic Area around an Environmental Justice Population.” 301 CMR 11.06(7)(b).

The Regulations do not authorize the Secretary to waive an EIR for the Project. The EENF does not meet the criteria of 301 CMR 11.06(8)(d) because it does not describe and analyze all aspects of the Project that may affect Environmental Justice Populations located in whole or in part with the Designated Geographic Area around the Project. This includes Air Quality and Odor impacts which were identified in the 1997 EIR, Section 10.2.1.11. It states, “Sensitive receptors may include private residences beyond Route 3 and Jordan Hospital...and private residences along Russell Mill Pond and near Warren Wells Brook to the south.” Since 1997, a correctional facility has been located proximate to the Site with over 1,000 residents. The Town’s Environmental Justice Screening identifies 1,710 people within 356 households within 1 mile and about 4,000 people within 5 miles. (The EENF is not clear about the total number of the EJ Population and where they reside in relation to the Site.)

The EENF does not state whether the EJ communities have private drinking water wells that could be impacted by the pollution discharged to the groundwater at the Site. The EENF goes not provide a detailed baseline as required by 301 CMR 11.06(8)(d). Finally, the Town made no efforts to provide “meaningful opportunities for public involvement by Environmental Justice Populations **prior to filing** the expanded ENF” as was required by 11.06(8)(d). The EENF’s list of “Community Based Groups” are located in the Boston area. Not one of them is known to have any contact with or do any work in Plymouth or the Plymouth area or with the EJ communities identified in the EENF. The EENF does not state that mailings were done to the EJ communities. The Town’s sole Community Based outreach consisted of an Oct. 8, 2023 MEPA on line zoom meeting with the claim that it will be conducting future meetings with no specifics about how people will be contacted, how many meetings will be held, or where they will be held. This is insufficient for MEPA compliance.

II. Comments on the EENF

This Section II is organized to track the Horsley Whitten Group June 2023 “Expanded Environmental Notification Form” Part IV, Project Narrative.

A. Project Narrative, Section 1.0, Introduction

The Town seeks to rely on the EIR done in 1997 - about 27 years ago years ago. The EENF states,

“The relatively recent completion of a full EIR for the original WWTF approval in June 1997 creates a situation where another full EIR submittal would be superfluous to address only the specific requested change of discharge location prioritization, and the previously permit-recognized increase to 3.0 MGD of total average discharge volume, with no other requested changes.”

Since 1997, major environmental conditions have changed that show a “full EIR” is not “superfluous” but absolutely mandatory for many reasons, including,

- Since 1997, Plymouth has experienced rapid extreme, uncontrolled growth and is one of the fastest growing municipalities in the Commonwealth with the one of the highest losses of open space according to the Mass Audubon *Losing Ground* report (2020).
- According to the July, 2023 *Climate risk assessment for Plymouth, Massachusetts* by the Woodwell Climate Research Center in Woods Hole, “**Both sea level rise and heavier rainfall will translate into greater flood depths and extent for Plymouth.**” The **Plymouth’s stormwater system** is also vulnerable. These factors impact the groundwater levels and contamination transport rates and routes at the Site.
- Conditions at the WWTF Site and around it have been altered by major changes in topography from sand and gravel mining and development that changes water flows above and below ground.

The EENF does not adequately describe the damage to the environment as defined by 301 CMR 11.02 and a full EIR is required. The 1997 EIR and MEPA Certificate were for a Project designed to allow degradation of the River from the groundwater discharge of wastewater from the WWTF. Appendix Appendix F, *Eel River Technical Advisory Committee Evaluation of Nutrient Inputs and the Health of the Eel River System, Plymouth, MA*, from the 1990s states,

“The projected increases in nitrogen are very large, more than doubling nitrogen loads system-wide. The relative increases are greatest in the Eastern Branch (2.7 to 5.6 times present), as that part of the Eel River is currently receiving only low watershed loadings from its predominantly undeveloped watershed. To the extent that nitrogen is limiting plant production within the Eel River watershed, these large increases in nitrogen availability will cause increased growth.”

The EENF relies on the inaccurate assumption that the Town is properly regulating industrial, commercial and residential development in a manner that protects the Eel River Watershed and the Sole Source Aquifer. The Town’s municipal permitting bodies allow industrial and commercial development in and adjacent to its Aquifer Protection Districts and in

Zone IIs of well head protection. This includes car dealerships and car washes, sand and gravel mining operations including those that dredge in the Sole Source Aquifer, a largely unregulated concrete asphalt batching facility (T.L. Edwards) and an unknown number of other commercial and industrial facilities. The EENF does not identify the industrial users discharging into the WWTF. Do industrial users such as T.L. Edwards and others discharge to the WWTF? Is there a pretreatment program that includes monitoring, reporting and enforcement for any users discharging to the WWTF. For example, the T.L. Edwards sand and gravel mining and concrete and asphalt batching facility was required by a 1994 municipal permit to have a “fully engineered closed system, involving oil and grit separation and on-site leaching” with monitoring and recordkeeping. The Town has produced no records of compliance at this facility. This raises serious questions about what the Town is allowing to be discharged into the sewer system, the WWTF and/or into the Sole Source Aquifer. This should be explained.

A new manufacturing facility is being planned in the Industrial Park at the site of a 20-acre sand and gravel mine that is excavating in the groundwater. A convention center is being discussed. The Town continues to approve dense residential development such as the Oasis residential project, Colony Place apartments, town houses and hotels, Red Brook, and Pine Hills. Will these projects be discharging to the WWTF?

The Town claims the WWTF will increase recreational use of the Harbor. This is trading one recreational resource for another with no credible analysis of the tradeoff. The WWTF is located in an aquifer area “contributing areas to significant recreational water bodies.” The EENF does not adequately address the recreational use of the Eel River Watershed and just assumes that the Plymouth Harbor recreation is more important than the Eel River Watershed recreation. The EENF contains generalized statements like, “This project’s goal of improving the water quality of Plymouth Harbor aligns with the plan’s strategy of encouraging health lifestyles and protecting the region’s coastlines, beaches and water resources.” This is inconsistent because the water enters the Bay anyway, only at a different location. It ignores that fact that moving the discharge from the Harbor where people recreate and grow food to discharging it to the Sole Source Drinking Water supply for 200,000 people is a delicate balance requiring robust and thorough study to ensure the tradeoffs are made based on full and complete information.

Dilution is not the solution to pollution. The EENF Project Narrative, Section 1.0 page 3 states that “key contaminants of concern (pathogens, phosphorous, and nitrogen)” will all get additional treatment from groundwater discharge vs. direct discharge to the Harbor. While this may be true, there is no description in the EENF of what is going in to the WWTF and what is coming out. The EENF does not identify the before and after contaminant levels in the WWTF effluent. What are the concentrations of pathogens, and what types and concentrations of pathogens, pharmaceuticals, PFAS, endocrine disrupting chemicals, etc. will be discharged to the Sole Source Drinking Water Aquifer at the WWTF? What levels of metals such as manganese are present? (Manganese is not regulated in drinking water and data on water temporally and spatially sparse. <https://www.nature.com/articles/s41370-023-00563-9>) Shallow aquifers are vulnerable to contamination by manganese.) Manganese while naturally occurring can result from human activities such as mining, industrial discharges and landfill leaching. Will the water discharged from the WWTF to the Sole Source Aquifer meet updated recommendations for this

contaminant in drinking water? While this information may all be contained in the WWTF testing reports, it is not described in the EENF. This should be described in non-technical language in a full EIR so that the public can be adequately informed.

The DEIR must contain a complete and non-technical description of the meaning of and results of the FDA Plymouth Harbor Dye Tracer Study of 2018 and letter of January 31, 2020, Appendix I to the EENF and Section 3.3.4. This study appears to raise significant concerns about the fecal coliforms entering the Plymouth sewer system and whether or not they are being adequately treated at the WWTF before being discharged to the Bay. Discharging these contaminants to the Plymouth Carver Sole Source Aquifer also raises significant concerns and alarm.

The EENF Form, page 7(E) states the Site is subject to a “conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction”. This appears to be inaccurate. There is no known restriction on the Site and in fact it is being used for sand and gravel mining and dumping of waste. The EENF Form Attachment C **does not** show the Site as labeled “Protected and Recreational OpenSpace”. If it is preserved or protected land why is the town conducting sand and gravel mining on it and clear-cutting forests, and dumping piles of waste from cleaning storm drains?

B. Project Narrative, Section 2.0, Anticipated MEPA Permitting Process

The Project Narrative, Section 2.0 states that the WWTF as proposed “will allow for connection to the WWTF of existing and future developed parcels that are currently, or would in the future under current permitting and infrastructure, served by on-site septic systems, which were never designed to reduce nitrogen.” This ignores the fact that there are currently available, affordable, on-site “IA” septic systems that can address nutrient pollution. See, Herring Ponds Watershed Association, September 20, 2023 informational session here: <https://www.theherringpondswatershed.org/news-events/> The Town of Plymouth just refuses to require them for new construction or for replacements. This points out a failure in the alternatives and mitigation analysis in the EENF.

The Project proposes to use the WWTF additional capacity for increased future growth in the Town. Section 2.0, page 5. This is segmenting the project from the proposed growth and development. The EENF should include growth projects and describe exactly how many proposed tie-ins are in the master plan. What are the growth projections and how many new users will be tying in?

The EENF states, “The Town of Plymouth is in the process of updating its Comprehensive Wastewater Management Plan. Once complete, if the currently proposed project is approved, **it is the intent of the Town to file a Notice of Project Change to MEPA.** Thus, the Town states it plans to file a Notice of Project Change with MEPA to include the Comprehensive Wastewater Management Plan that is in development. The current EENF is putting the cart before the horse. This wastewater management plan should be complete before the EENF is approved, and the EIR should incorporate the Plan. The Town is improperly segmenting the Project from the comprehensive wastewater management plan and thwarting the

purposes of MEPA. This violates MEPA’s anti-segmentation provision, 301 CMR 1.01.c. which states,

“the Secretary **shall consider the entirety of the Project**, including any likely future Expansion, and not separate phases or segments thereof. The Proponent may not phase or segment a Project to evade, defer or curtail MEPA review. The Proponent, any Participating Agency, and the Secretary shall consider all circumstances as to whether various work or activities constitute one Project including, but not limited to, whether the work or activities, taken together, comprise a common plan or independent undertakings, regardless of whether there is more than one Proponent; **any time interval between the work or activities**; and whether the environmental impacts caused by the work or activities are separable or cumulative.

The Town has stated plans to tie future developments into the WWTF. The Town should be required to incorporate this into the entirety of the WWTF Project.

C. Project Narrative, Section 3, Existing Conditions and Background

The EENF does not accurately describe the existing or future Site conditions.

1. Land Use Changes on the Site

There are inaccuracies and omissions in Section 3. First, it ignores significant, ongoing land use alterations on the Site since the 1997 EIR and does not describe the Town’s plans for future uses of the Site. The EENF Form, Land, states that the total Site acreage is 95.79 acres with “other altered areas at 33.04” and “undeveloped areas” are 54.40 acres. The “undeveloped” acreage is actually closer to 44 acres according to MassMapper GIS. Thus, the description of the Site appears to be inaccurate.

Second, Section 3 ignores the land use changes on the Site from 1997 to present, that are ongoing. The Town is using and expanding a sand and gravel mine, extracting sand and gravel for unknown purposes. There is no earth removal or mining permit, and the Town does not account for the volume of earth it has removed from the Site since acquiring it by eminent domain in the 1990s. In February 2022, CLWC sent the Town zoning enforcement official a Request for Enforcement of the zoning bylaw on earth removal with a request that the Town cease and desist removing sand and gravel from the WWTF Site. The Town did not take enforcement action. The activity is clearly visible on Google Earth. This is Construction Sand and Gravel Processing as defined by the federal Clean Water Act, Section 11.19.1. The Site use falls under Sector J. Mineral Mining and Dressing, Subsector J1, SIC Code 1442. and requires an individual NPDES permit. The Town has no such permits. Section 3 appears to be based on the assumption that the Town is stewarding the 97-acre Site in a manner that protects the Eel River, groundwater and the Sole Source Aquifer. Instead, the Town is actively clearing forested lands, levelling hills, and conducting commercial sand and gravel mining on the 97-acre Site, with no environmental impact study and no accountability.

Recently the Town has allowed land clearing on the WWTF Site for the installation of a cell tower. Is the Town planning to continue the deforestation and sand and gravel mining of the remaining acres until the Site is entirely leveled and brought down to the grade of the WWTF? Is this use of the Site consistent with the protection of the Eel River and the Plymouth Carver Sole Source Aquifer to which the Town now seeks to discharge 3 million gallons a day of residential, commercial and industrial waste?

The Project Narrative states that the Site has a forested buffer between the WWTF and abutting residences. It states the nearest home is 1,600 feet away, “buffered by woodland. Section 3.0. Does the Town plan to remove this wooded buffer by the expansion of its sand and gravel mining? Does the Town plan to keep clearing the forest and mining the Site so that the forested buffer is eliminated?

It is basic, established science that deforestation and sand and gravel mining reduces pollutant attenuation capacity by removing the natural filtration provided by the forests, sand and gravel. The Project Narrative describes the Site’s sand soils and hence the vulnerability to contamination and the ability of pollution to travel easily through sand and the Aquifer. Yet, the Town plans to discharge more pollution to the Aquifer with no analysis of the current hydrology and impacts to surface and subsurface water flows resulting from land use changes, eliminating hills, and changing the topography.

The Town’s sand and gravel mining on the Site is leveling hills and thereby altering water flows above and below ground and removing the filtration protection for the Eel River. This is a part of the Town’s use of the Site must be studied in an EIR. The Town’s use of the Site for sand and gravel mining and the damage to the environment was not addressed in the 1997 MEPA certificate or EIR. It must be addressed now.

Finally, the Town is using the Site to store clean out debris from Town catch basins. For over a year, there have been two mountains of clean out debris on the Site, near wetlands. In addition, the Town is composting sewage in the area, according to reports.

2. Land use changes in the Eel River Watershed around the Site

The Town allows sand and gravel mining operations throughout the Eel River Watershed with no credible environmental impact reports, no groundwater monitoring and no evidence that these commercial mining operations comply with EPA Clean Water Act standards for Sector J. Mineral Mining and Dressing, Subsector J1, SIC Code 1442 or the Massachusetts Clean Waters Act.

The Community Land & Water Coalition report *Sand Wars in Cranberry Country* documents the historic and active sand and gravel mining operations in the Eel River Watershed including several immediately adjacent to and within a few miles of the Project Site. None of these operations were covered by a MEPA review. The interactive map on the Sand Wars site shows details on each site surrounding the WWTF. See, www.sandwarssoutheasternma.org

The commercial sand and gravel operations include:

- Abutting the Site: Kingstown Trucking a massive mining operation under the ruse of cranberry agriculture that is now an industrial solar facility. Abutting that is the County Commissioners-Kingstown Trucking mining operation on the County Woodlot that leveled one of the Town's highest hills and created a large hole in the ground. The County has proposed a racetrack-casino and other commercial uses are being considered. A portion of the County Woodlot is used by the County for industrial purposes. See more on www.savethecountywoodlot.org

Within about a mile:

- Sand and gravel mining at the location that is now the Oasis residential apartment
- Sand and gravel mining by Sheava Development at the Site of the proposed New Hope Church, a megachurch with about 400 parking spaces and 800 seats.

D. Project Narrative, Section 4, Project Description

Section 4 does not adequately describe the Project. The summary states,

“The Town is requesting to change the primary discharge point of treated effluent from the WWTF from the harbor outfall to the existing on site, open sand disposal beds. The Town is also requesting that the total, average annual discharge volume from the WWTF be increased from the current 2.5 MGD to 3.0 MGD. This requested volume increase was foreseen in the EIR certificate (1997) for the WWTF with an allowance for this potential increase pending MassDEP approval. The Town requests approval to discharge up to 3.0 MGD average of treated effluent at be discharged the WWTF disposal beds. The Town also requests that the currently approved discharge of and up to 1.75 MGD to the harbor outfall be maintained for use at the Town's discretion as circumstances warrant (as allowed by the NPDES permit). The harbor outfall would be retained as a backup for times when the beds may be receiving maintenance, other operational considerations, or in case of unforeseen emergency conditions. This proposal is based on a previously foreseen increase in authorized disposal volume and a change of priority discharge location.”

This Section is vague and not supported by evidence or data. It makes sweeping conclusions about how the Project will “realize multiple environmental benefits” without sufficient data or analysis of alternatives. It relies primarily on Appendix H: Linked Watershed-Embayment Model to Determine the Critical Nitrogen Loading Threshold for the Plymouth Harbor, Kingston Bay, and Duxbury Bay Estuarine System, a draft report dated 2017. Most of the data in the Appendix H report is over 10 years old. Therefore, it does not reflect current conditions including the impact of climate change on water temperatures which impacts pollution levels. The USDA's recent report shows that ambient temperatures in Massachusetts have increased over the last 10 years.

The Plymouth Harbor Water Quality section does not give information about water quality other than referring to the Dye Tracer Study, Section 4.1. This was a one time study. There appear to be other sources of pathogens discharging into the Harbor but the EENF does not explain any comprehensive plan by the Town to address all of the sources. Is the Project just a short term fix?

Plymouth Harbor Water Quality, SubSection 4.1.2 acknowledges that a primary source of nitrogen to the Bay is fertilizers and changes in freshwater hydrology associated with development. Page 13. Plymouth continues to allow rapid deforestation and stripping of land down to bare sand for residential, commercial and industrial development. It allows massive sand and gravel mining operations such as the ongoing operation at 10 Collins Avenue in Plymouth. Municipal bodies and the Planning Department allow variances that override the Aquifer Protection Zoning Bylaw, vegetated buffers around projects, and the Town allows developers to ignore the Natural Features Conservation Bylaw. The Town should be required in an EIR to review the manner and means of the development that is resulting in the changes in freshwater hydrology associated with development and to commit to mitigation measures for this damage to the environment.

Section 4.1.2 admits that the nitrogen reduction calculation of 2.3% is based on a “simplistic” analysis. It anticipates ‘further evaluation of nitrogen offsets’ from the Project. These must be studied in a full draft EIR, not in a single EIR as proposed.

The EENF does not give a non-technical description for the public about how the Town’s WWTF works, what stormwater and sewage is discharged to the WWTF and how it is discharged to the Harbor and groundwater. It does not explain the role of stormwater collection or document how much stormwater goes into the WWTF and how much goes in to the Harbor directly, both before and after the Project.

The Nutrient Management Plan relied on by the EENF was by its nature, limited to only nitrogen and phosphorous. Since that time, additional contaminants in wastewater have become a concern. This includes pharmaceuticals. The Town’s sewer system receives wastewater from a greatly expanded hospital, now Beth Israel Deaconess Hospital. Beth Israel Deaconess Hospital is the largest hospital in the Southern region of the South Shore. BID-Plymouth is an acute care, 164-bed, non-profit community hospital serving 12 towns in Plymouth and Barnstable counties. There is no description in the EENF of the types of contaminants discharged to the WWTF, how they are treated before being discharged to the Harbor, and why there are issues that led to the FDA Letter of 2020 and directive to expand the prohibition zone for shellfishing in the Harbor. This should all be explained to the public and the Environmental Justice Communities.

In October 2023, water quality testing in the Eel River adjacent to the Project Site revealed the presence of insulin and E Coli. The source of these contaminants have not been publicly reported as of this date. This should be addressed in a full EIR.

The issue of PFAS is not addressed. The Town should explain how PFAS is being treated, if at all, at the WWTF and what levels of PFAS are being discharged to the Aquifer and the Harbor now and what is proposed. It is undisputed that PFAS are found in wastewater.

“Poly- and perfluoroalkyl substances (PFAS) are ubiquitous in municipal wastewater and biosolids. Major point sources include PFAS-producing or -using industrial sites, such as papermaking, textile mills, and electroplating. However, PFAS have been detected in wastewater even without direct industrial sources, such as in septic tanks and office buildings. **Similarly, PFAS have been detected in the biosolids of small municipal wastewater treatment plants (WWTPs) without known direct industrial sources.** (PFAS detected in wastewater and biosolids include not only the two most studied PFAS, perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), but also short-chain PFAS and polyfluorinated compounds. It is suspected that PFAS in non-industrial wastewater may occur in part due to environmental degradation of polyfluorinated microfibers released by water-resistant clothing during laundry. Another plausible non-industrial source of PFAS in municipal wastewater is human excretion after oral exposure. Often, a portion of the PFAS in wastewater effluent can be ascribed to PFAS in the community’s tap water.” Poly- and Perfluoroalkyl Substances in Municipal Wastewater Treatment Plants in the United States: Seasonal Patterns and Meta-Analysis of Long-Term Trends and Average Concentrations Kyle A. Thompson **et al.** <https://pubs.acs.org/doi/10.1021/acsestwater.1c00377>, American Chemical Society

E. Project Narrative, Section 5, Permits

Additional permits may be necessary under the Wetlands Protection Act and Bylaw if the WWTF operators, the DPW, plans to continue to dump storm drain cleanout near the Eel River.

The Massachusetts Historical Commission should be consulted since the 30 year old consultation is outdated. The Wampanoag people have sovereign rights to fish and use the Eel River and those rights may be impacted by the Project. According to the EENF, Appendix F, *Eel River Technical Advisory Committee Evaluation of Nutrient Inputs and the Health of the Eel River System, Plymouth, MA*, Section 1.5, Land Use History, states,

“Proper ecological management of any complex system, like the Eel River, is best undertaken within the context of both present and past ecological conditions. Most of the coastal regions of Massachusetts have undergone changes resulting to both natural processes (storms, sea-level rise, etc.) and human activities (dams, dikes, filling of wetlands, etc.). What follows is a brief description of some of the changes which have helped to protect and structure the Eel River System, creating the environment which exists today.

Human modifications to the Eel River System have been occurring for hundreds of years. **Wampanoag Indians made the river valley their home availing themselves of the abundant fish, shellfish and game in the area.”** (Emphasis supplied)

A thorough, meaningful opportunity for the Wampanoag people to participate in the MEPA process for this Project is critical. This means funding to retain experts and legal assistance to support efforts at reviewing MEPA documents and the water management act permit and other regulatory filings. The state and town should supply grant funding to support the role of Indigenous people in this project. There should be an entirely new MHC archeological

survey undertaken and this should include impacts of the Town's sand and gravel mining on the Site on in the Eel River System.

The Town should explain any obligations under the federal Safe Drinking Water Act regarding its proposal to discharge wastewater to the aquifer.

There should be a full biological survey. The EENF states there are no MESA protected species, but the 1990's studies showed the presence of the Bridle Shiner, a special concern species.

The River Herring is now listed as protected under the Federal Endangered Species and the EENF states river herring are in the Eel River. In addition, the American Eel has been present in the Eel River. This is an at-risk species that should be studied. Eels live in and thrive in sediment. Will they be exposed to contaminants from the WWTF that may reach nearby wetlands, streams, and rivers that are eel habitat?

According to the EENF, Appendix F, *Eel River Technical Advisory Committee Evaluation of Nutrient Inputs and the Health of the Eel River System, Plymouth, MA*, biomonitoring was implemented in the Eel River System, that identified the bridle shiner. The Town should devote additional resources to a more robust and transparent monitoring systems than is in the Nutrient Management Plan.

The WWTF Pretreatment Program required under its Clean Water Act NPDES permit should be fully described in a full EIR. All records of the sewer users discharging to the WWTF who are governed by the Pretreatment Program and discharge limits should be identified. The Town should be required to provide historic and current data of its enforcement of the WWTF pretreatment standards.

The Town's Stormwater Management Program – MS4 Permit should be described and outlined in a manner that the public can understand. The Town should be required to document that it is complying with the MS4 Permit and provide all up to date records of enforcement of the Stormwater Management Standards.

F. Project Narrative, Section 6, Potential Hydraulic Impacts

The hydraulic impact assessment is insufficient. Section 6.1.5 concludes that a loading test and modeling “**suggest** that the hydrogeologic setting underlying and surrounding the WWTF has the capacity to accept the groundwater discharge of at least 3.0 MGD of treated effluent.” Page 33. A “suggestion” that an increase in groundwater discharge at this location will not negatively impact surrounding ecosystems, homes, and businesses is not a sufficient study. As a result, the EENF does not adequately “address all aspects of the Project that are likely, directly or indirectly, to cause Damage to the Environment.” 301 CMR 11.06(7).

6.1.1 Groundwater mounding.

The EENF hydraulic modeling is based on a 40-day loading test conducted in 2018. Page 21. “The loading test consisted of the discharge of treated effluent to Bed #4 and concurrent

monitoring of water table response in the wells surrounding the WWTF.” Page 24. The flow averaged 1.62 MGD, about half of what is proposed to be added – 3.0 MGD. Then, Horsely Whitten Group used the “observed water level responses from the loading test” to run a groundwater model for a steady state discharge of 3.0 MGD. Section 6.1.4. There appear to be several serious flaws in this model which suggests that the model inputs were insufficient leading to an inaccurate model.

First, the load test was conducted during a dry part of the year, from August 20 to September 28, 2018. Using groundwater response for a low flow, low groundwater elevation period does not give accurate data about year-round variations and how the groundwater and river and pond baseflows fluctuate. Second, the load test was done 5 years ago. Since 2018, there has been additional deforestation and sand mining on the Project Site (see above) and around the Site. More impervious surface has been added.

Third, the Town’s informal Board of Health septic systems records review is only a partial view and not a scientifically credible method for determining “potential impacts to the low elevation parcels.” Section 6.1.6. This ignores the stormwater runoff and detention basins in the large commercial developments surrounding the Site. How will they be impacted? Similarly, the “on-the-ground survey of low properties” is unscientific and inadequate. Section 6.1.7 states that in the future, as a condition of the groundwater discharge permit, “the Town would be willing to work with any documented property owners impacted by changing groundwater levels” resulting from the Project. This is not “mitigation” under MEPA. Is the Town really suggesting that it is going to respond to flooding in a homeowner’s basement by altering the flows to the WWTF? Or what will be the mitigation for the homeowner? This is not an acceptable way to deal with this.

Fourth, the EENF relies on the past 20 years of WWTF operations to claim that since “no impacts have been reported to the Town” from groundwater mounding, this is no problem. This is not credible, is based on the memory, apparently, of DPW officials and town workers, and is random and unscientific. Further, the past 20 years of discharge is a fraction of what is proposed by the Project. Therefore, it is completely irrelevant to future impacts. The conclusion on page 36 is unsupported.

Fifth, the Section 6.2 conclusion of “Potential Flow Impacts to Eel River Infrastructure” is also insufficient. It uses the apparently flawed groundwater model described in Part 6.1, that was based on 40 days of testing during the dry season five years ago, to make the conclusion that there will be “no significant hydraulic impacts” at the “two most likely locations for any such potential impact (Russell Mill Pond and Hayden Pond dams)...” Page 46.

Sixth, the hydraulic modeling is at odds with climate change predictions for Plymouth. It does not appear to take into account or document the impacts of flooding on groundwater mounding. This is impossible to tell from the description of the groundwater model given in the EENF. The EENF used the EEA “RMAT Climate Resilience Design Standards Tool Project Report” created in December 2021. The Project received a “moderate exposure” for urban flooding, and a “high exposure” for riverine flooding. (And a “high exposure” for Extreme Heat, which is not taken into account in the biological ecological evaluations of the Project as

described elsewhere in these comments.) Many of the inputs to this model are questionable. The Project Narrative, 3.2.1 states the project is located in a FEMA Zone X-Area of Minimal Flood Hazard (eff. 7/6/2021)

The EENF contains the following conflicting statements about flooding in the section **Climate Mitigation and Resiliency**

- “The existing WWTF is not located in an existing flood prone area and is not anticipated to be at increased flood risk under any potential SLR scenarios.”
- “The project does not involve any new construction and therefore the climate parameters analyzed in the RMAAT Climate Resilience Design Standards Tool do not apply.”
- “This project is contributing to the Climate-Ready Healthy Plymouth Report (June 2020) by reducing energy usage through eliminating the need for pumping effluent to the harbor and increasing groundwater recharge through on-site infiltration.”

The Woodwell Climate Research Center’s climate risk assessment for Plymouth contradicts the EENF finding that there is no flood risk. <https://www.woodwellclimate.org/climate-risk-assessment-plymouth-massachusetts/> This is relevant to the groundwater hydraulic model in the EENF. The Woodwell report highlights “The Grove” commercial development near the WWTF as particularly at risk. Grove at Plymouth Shopping Mall: <https://www.grovetplymouth.com/>

The Woodwell report concludes that the FEMA maps for Plymouth should not be used because they do not accurately show flood prone areas. The Woodwell Center report for Plymouth states in its summary (Emphasis supplied):

“As a result of climate change, **flood risk is projected to increase for Plymouth.** The probability of the historical 100-year rainfall event, a useful indicator of flood risk, is expected to quadruple by mid-century and be ten times more likely by the end of the century. Sea levels are also projected to rise throughout this century with an increase of 1.31 feet (0.4 meters) by 2050 and 2.66 feet (0.81 meters) by 2080. **Both sea level rise and heavier rainfall will translate into greater flood depths and extent for Plymouth.** **The vulnerability of Plymouth’s stormwater system** was also evaluated under the present and future 100-year rainfall event. Here we present our findings on extreme precipitation and flooding to help Plymouth in its plans to create a more resilient future for all residents.

Flooding: Some of the flood studies that make up parts of Plymouth’s FEMA flood map are over 30 years old which use estimates of streamflow based on drainage area and nearby stream gauges and elevation data from that time which has likely changed significantly since then. Finally, FEMA shows no flood risk in areas disconnected from rivers, also known as pluvial flooding, while Woodwell demonstrates extensive inland areas are vulnerable to flooding. This is because FEMA does not account for pluvial flooding.

Plymouth's stormwater system has several hot-spots of vulnerability to the 100-year rainfall event. We identified several hotspots of stormwater flooding throughout Plymouth. Taylor Avenue in White Horse Beach, **The Grove at Plymouth shopping mall**, the Plymouth harbor area, and the Cordage Park area in North Plymouth all show a high concentration of flooded manholes and catch basins....”

Seventh, the hydraulic model does not address stormwater impacts. The EENF does not address the Town's stormwater management. The MADEP Stormwater Standards and Stormwater Handbook provide guidance and criteria to ensure that the hydrologic budget of associated wetlands is maintained and protected. Wetlands are dependent upon both surface water and groundwater inputs and are sensitive to hydrologic shifts and alterations (they can be impacted by both increases and decreases of water levels and flow). They are impacted by both short-term runoff events and longer-term groundwater changes in recharge rates that alter baseflow. Recharge is the process of precipitation infiltrating into the ground and replenishing the underlying groundwater. MADEP Stormwater Standard 3 requires that annual groundwater recharge rates be maintained and preserved.

MADEP Stormwater Standard 3 is designed to maintain the hydrologic balance in wetlands. It requires that post- development recharge is maintained at existing pre-development recharge. MADEP Stormwater Handbook, Volume 2, Chapter 1 provides guidance and clarification regarding this requirement to maintain natural hydrology. Page 6 of this document states, ***“Standard 3 of the Stormwater Management Standards requires that proponents preserve infiltration at predevelopment levels in order to maintain base flow and groundwater recharge”***. Recharge provides baseflow to wetlands and contributes to their hydroperiod (the natural cycle of water levels through the seasons). Changes to this hydrologic balance of recharge areas to a wetland constitute “alterations” to the wetland. There should be a full EIR to determine whether the Site's land alterations and increased base flow will result in significant alterations to these recharge rates and to the hydrologic regime of the wetland.

MADEP Stormwater Manual, Volume 3, Chapter 1, page 17 provides guidance on how to evaluate impacts on wetlands associated with proposed infiltration/recharge facilities designed in accordance with Stormwater Standard 3. It states, ***“Evaluate Where Recharge Is Directed: The infiltration BMP must be evaluated to determine if the proposed recharge location will alter a Wetland Resource Area by causing changes to the hydrologic regime.”***

G. Project Narrative, Section 8.0, Alternatives Analysis

The Alternatives Analysis in Section 8.0 is insufficient. The Secretary should require a draft EIR that contains a description and analysis of all feasible alternatives that is thorough and complete. 301 CMR 11.07. The two key flaws in the alternatives analysis are:

1. Failure to consider use of reclaimed water, and

2. Failure and to consider reducing water usage through conservation and efficiency, thus reducing the volume of discharge to the groundwater (see also comments on Nutrient Management Plan, below).

The 1997 MEPA process for the Project evaluated reclaimed water reuse as a means to reduce nutrient loading impacts to the Eel River Watershed from groundwater disposal of treated effluent at the WWTF. It also addressed reducing water usage. Appendix G, p. 16. The EENF ignores both these alternatives. Apparently, at some point after the MEPA Certificate was issued in the 1990s, the Town did not follow through on these two alternatives/mitigation measures.

The Appendix G to the Horsley Whitten Group report, the *Nutrient Management Plan* (NMP) for the WWTF states that due to funding problems, the Town did not pursue reclaimed water use. The NMP states, “the Town is willing to work with potential developers/partnerships to accomplish this goal.” Appendix G, page 16-17. The Secretary should require the Town to study this alternative in a full EIR.

The Town should also be required to pursue the 1997 EIR alternative of reducing water usage. The Town Water Study Committee has identified options for reducing water usage by 3 million gallons per day. Town leadership has not followed through on this 2022 recommendation. The Secretary should require the Town to conduct a study of water use reduction and to explain why it has not implemented the recommendations of the Town Water Study Committee. The Town should be required to allocate funding to implement the recommendations and all developments and new developments should be required to comply.

The Alternatives Analysis assumptions about the impacts of increasing the base flow of the Eel River is a gross generalization. See, Section 8.0(A) “And the anticipated augmented river flows would actually be beneficial for providing enhanced baseflow to the river under drought and low flow conditions to support fish passage, habitat and recreation.” Page 65-66. Additional study is needed to determine how the additional flow, in light of climate change impacts from flooding, combined with the rapid development, creation of impervious surfaces and sand and gravel mining around the Site has actually impacted the baseflow of the river, and how additional flow will impact wetlands. This could result in an alteration of wetlands, requiring an Order of Conditions. The clear-cutting of trees has significantly reduced evapotranspiration (ET) rates which increases groundwater recharge rates, changes groundwater flow directions, and ultimately alters the hydrologic regime of the wetlands (including downstream headwater streams).

III. Mitigation

What the EENF describes as past “mitigation measures” from the 1997 EIR are not in fact “mitigation” of any substantial nature. The Nutrient Management Plan (NMP) is simply a monitoring program (Appendix G). The Eel River Monitoring Program is just that-monitoring, and the GWDP (DEP Permit) requires monitoring of the WWTF effluent and proximal

groundwater wells. This is not mitigation, it is monitoring the impacts of the pollution and operation of the WWTF.

The Town relies on the most recent Nutrient Management Plan (NMP) report from the Plymouth Department of Marine and Environmental Affairs to show “mitigation” of the increased discharge of up to 3.0 MGD. The NMP is from 2020 and based on the 1997 MEPA Certificate. As noted, the Town has not followed through on the “Use of Reclaimed Water. Appendix G, page 11.

In addition, the Town has not gotten a “Plymouth Harbor Watershed By-law” in place as required by the 1990s MEPA mitigation. The NMP states,

“A draft by-law was created by the Division and an article reserved for 2007 Town Meeting. However, preliminary discussions with DEP indicated it would be beneficial to implement the by-law following the release of the TMDL model. The model will specify which areas and what projects would most benefit the reduction in nutrients. Once the Plymouth Harbor Embayment Study is complete the Town will review the best options for the implementation of the watershed by-law.” (Page 15 of NMP).

According to the NMP, this has not been done. This is another aspect of past mitigation that the Town has not completed.

The 1997 mitigation relies on the Town keeping 3-acre rural residential zoning in order to protect groundwater quality. While the Town has maintained the 3-acre lot size for rural residential development, it has allowed ever increasingly dense residential development throughout the Town. This includes thousands of new apartments and “cluster developments” including at the Makepeace Red Brook project, and within the Eel River Watershed at Summers Reach, Oasis/The Grove, and Pine Hills. The mitigation purports to rely on local zoning and the wetlands bylaw as measures of protection for the groundwater and the environment. In fact, the Conservation Commission routinely fails to enforce the Wetlands Protection Act. The NMP states the Commission “has increased “the no-touch buffer zone from 25ft to 35ft in the Town’s Wetlands Protection Act Bylaw”. While this may be true, it is meaningless because the Conservation Commission routinely grants variances from the “no touch” zone limits. (Examples of violations and illegal variances available on request.) The NMP itself describes some wetlands violations in the Watershed, and the failure of the Town to require mitigation or correction of the violations. Appendix G, page 25. This is a pervasive longstanding issue in Plymouth and many wetlands are being illegal altered as a result.

The NMP states the Town secured “a substantial amount of open space” to prevent future nutrient loading into the watershed” the area in the Watershed has also been clear-cut and covered with hundreds of acres of impervious surfaces. Examples of improperly designed stormwater systems that are not adequately maintained abound. This includes the situation at “The Grove” a nearby mall. For every acre of open space saved, there is an equal or greater area that has been developed. Whether the protection of open space has offset the development in the Watershed should be addressed in the EIR.

The NMP is 3 years old and current data should be provided.

The EENF is incomplete because it does not provide the public with a full explanation of the history of the MEPA process for the WWTF, providing only “Snippets” and does not explain what the WWTF is, what it does, and how it serves the municipal needs of the Town. A full DEIR should:

- Include the 1990s MEPA Certificate
- Explain the Town bodies responsible for overseeing and operating the WWTF
- Describe what the WWTF does, how it operates, what water quality testing is done before and after pretreatment of the wastewater,
- Provide a copy of the Town’s pretreatment program under the NPDES permit and describe what will be done with the switch to discharging 3.0 MGD to the Aquifer

IV. Inadequate Public Outreach and Request for Site visit

The “Community Based Organizations” given notice from a list provided by the MEPA Environmental Justice Office (Cover Letter page 3), are not located in Plymouth or even Plymouth County. The EENF’s list of “Community Based Groups” are located in the Boston area. Not one of them is known to have any contact with or do any work in Plymouth or the Plymouth area or with the EJ communities identified in the EENF. The Town failed to provide local groups such as Southeastern Massachusetts Pine Barrens Alliance, Community Land & Water Coalition, Sustainable Plymouth, and other local groups working on water quality and community well being in the Town.

The EENF does not identify all private well users who may be impacted. It does not identify whether EJ community members use private wells.

The Secretary should schedule a site visit and public consultation session under 301 CMR 11.06(2). “The Secretary shall ordinarily schedule with the Proponent a site visit and public consultation session to review the Project and discuss its alternatives, its potential environmental impacts and mitigation measures. The Proponent shall be required to provide accompanied public access to the Project site during the site visit and public consultation session, unless such access is infeasible for public safety reasons or protection of proprietary information.”

V. Conclusion

The goal of ending the discharge of sewage and wastewater to Plymouth Harbor is a laudable one. It requires a full draft EIR and final EIR that reflects current conditions, including the impacts of climate change and the rapidly heating planet. This is a complex decision with long term irreversible impacts and the public should have the opportunity for full engagement.

Thank you for the opportunity to comment.

Very truly yours,

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