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CAPE COD COMMISSION

DATE: _____ ___, 2016

APPLICANT: Town of Harwich
c/o David Young, PE
CDM Smith
75 State Street, Suite 701
Boston, MA 02109

PROJECT: Development of Regional Impact Decision
Town of Harwich Comprehensive Wastewater Management Plan
(CCC No. 13004)

DECISION OF THE CAPE COD COMMISSION

The Cape Cod Commission (Commission) hereby approves with conditions the Development of Regional Impact Application of the Town of Harwich (Town or Applicant) for its Comprehensive Wastewater Management Plan (CWMP). This decision is rendered pursuant to a vote of the Cape Cod Commission at a public hearing on _____ ___, 2016.

PROJECT DESCRIPTION

Wastewater management is one of the most significant regional concerns affecting Cape Cod. The Commission is actively engaged in the 208 Area Wide Water Quality Management Plan Update for Cape Cod. The Commission's review of Comprehensive Wastewater Management Plans (CWMPs) is guided, in part, by the 208 Area Wide Water Quality Management Plan Update. As such, the Commission will be working with towns within Barnstable County on the shared challenges of wastewater management to identify efficient and cost-effective solutions common to the towns.

The Town of Harwich is pursuing, in its CWMP, a long term, multi-phased wastewater management program with regional and centralized treatment to reduce nutrient loading to coastal waters and meet total maximum daily loads for estuaries/embayments along Nantucket Sound and Pleasant Bay. The plan proposes a town-wide wastewater collection and treatment system, with work located throughout the Town. Sewer mains are proposed in existing paved roads. The Town is recommending a traditional wastewater program that includes approximately 92 miles of sewer pipes, 30 pumping stations and two centralized treatment facilities. The preferred alternative includes two treatment facilities; one that utilizes the existing facility in Chatham, and a new facility in at the Harwich landfill. The Plan also includes non-structural alternatives for stormwater management, pond water quality protection and restoration, fertilizer education, town-wide land use regulation reviews and two projects anticipated to provide some natural nitrogen attenuation. The total plan is projected to be

phased over 40 years and will develop an adaptive management approach to guide its implementation.

BACKGROUND

The CWMP is subject to mandatory DRI review pursuant to Section 2(d)(i) of the Commission's *Enabling Regulations Governing Review of Developments of Regional Impact* because the CWMP required the preparation of an EIR under MEPA.

The Town requested Joint MEPA/Commission Review of the CWMP pursuant to the Memorandum of Understanding between the Commission and the Executive Office of Energy and Environmental Affairs – MEPA Unit in March 2013 at the same time the Town filed its Expanded Environmental Notification Form (EENF) on the CWMP under MEPA. In the EENF, the Town requested a Phase 1 Waiver for the Muddy Creek Inlet Widening component of the CWMP, which would allow that project to proceed without first undergoing Commission development of regional impact (DRI) review, and to obtain town approvals and begin construction earlier than the other components of the CWMP. The Commission held a Joint Review hearing on the EENF April 3, 2013 and subsequently submitted to the MEPA office a comment letter on the EENF, which comments included support of the Phase 1 Waiver request for the Muddy Creek project. The Secretary of the Massachusetts Executive Office of Energy and Environmental Affairs (Secretary) issued Certificates on the EENF April 12, 2013, granting the Phase 1 Waiver and allowing the Town to prepare a Single Environmental Impact Report (SEIR) for the CWMP.

In its comment letter, the Commission also suggested that the Town wait to prepare and file its SEIR until the Commission had completed the update to its Section 208 Area-wide Water Quality Plan (208 Plan Update), which the Town agreed to do. The Commission has since completed the 208 Plan Update, which was approved/ certified by the Governor in June 2015 and by US EPA in September 2015. In its certification of the 208 Plan Update, the Commonwealth of Massachusetts designated the Town of Harwich as the Waste Treatment Management Agency (WMA) for those watersheds and portions of watersheds located within the Town of Harwich.

The Town filed its SEIR under MEPA in April 2016. The Commission held a Joint Review hearing on the SEIR April 28, 2016, and provided a comment letter to the MEPA office on the SEIR May 6, 2016. The Secretary issued a Certificate on the SEIR May 13, 2016, determining that the SEIR adequately and properly complies with MEPA and its implementing regulations.

The DRI public hearing period on the CWMP was opened by hearing officer June 27, 2016. A subcommittee of the Commission held its first substantive DRI public hearing on the CWMP July 28, 2016, at which it heard comments and presentation, and considered a draft DRI decision for the CWMP. At this hearing, *[the subcommittee voted to recommend the draft decision to the full Commission for adoption, which adoption would approve the CWMP, subject to conditions in the decision. The hearing was continued to _____, ____ 2016 for the full Commission's consideration of the draft decision on the CWMP recommended by the subcommittee.]*

FINDINGS

The Commission hereby finds and determines as follows:

General

GF1. The Project is the Comprehensive Wastewater Management Plan (herein, 'Project', 'CWMP,' or the 'Plan') for the Town of Harwich, as described in the Single Environmental Impact Report (SEIR) dated March 29, 2016 (including volume 2/appendices), prepared by CDM Smith. As the Plan underwent Joint Review between EEA and the Commission, the SEIR constitutes the Town's DRI application to the Commission on the Plan.

GF2. The CWMP is a long term (40 year), multi-phased (proposed eight phase) wastewater management program to reduce nutrient loading to coastal waters and meet total maximum daily loads (TMDLs) for estuaries and embayments along Nantucket Sound and Pleasant Bay. The CWMP proposes wastewater collection and treatment systems in several targeted areas of the town that contribute to nitrogen impaired watersheds, as well as non-structural nutrient management alternatives including stormwater management, restoration projects, fertilizer education, freshwater pond water quality initiatives, review of town-wide land use regulations and open space acquisition initiatives.

GF2a. Summary of Plan Phases:

- Phase 1: natural attenuation projects-
    - Muddy Creek Bridge (MEPA Phase 1 Waiver) - Construction completed
    - Planning for Cold Brook former cranberry bog network off Bank Street
- Phase 2
    - design and installation of sewers in the Pleasant Bay watershed
    - negotiations with town of Chatham on treatment and effluent disposal options
    - possible Cold Brook natural attenuation project implementation
- Phase 3
    - additional sewers in the area north of the Harwich Village Commercial District
    - water quality monitoring and evaluation of the impacts from sewering and the Muddy Creek bridge project
    - possible implementation of the potential Seymour Pond restoration project
    - design and construction of the Chatham Wastewater Facility expansion
- Phase 4
    - Sub-phase 4A: the construction of treatment plant at site HR-12 (landfill site) to treat collected flows from Phases 4, 5 and 6
    - Sub-phase 4B: construction of sewers to collect wastewater in the Northeast part of the Herring River Watershed, with wastewater pumped to, treated and recharged at plant site HR-12
- Phase 5*
    - Construction of sewers to collect wastewater in the Northwest part of the Herring River Watershed and near site HR-12, with wastewater pumped to, treated and recharged at plant site HR-12
- Phase 6*
    - Construction of sewers to collect wastewater in the Southeast part of the Herring River watershed, and install some of the planned sewers in the Allen and Wychmere Harbor watersheds, with wastewater pumped to, treated and recharged at plant site HR-12
    - Possible implementation of the potential Bucks and John Joseph Pond restoration projects.

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- Phase 7*
    - Expand plant site HR-12 and install the remaining required sewers in the Herring River watershed.
- Phase 8*
    - Sewer construction in the Saquatucket watershed and the remaining areas of the Pleasant Bay watershed.
    - Sewer construction near the Great Sand Lakes and the Campground.

    *The town anticipates that sewer service areas in Phases 5, 6, 7 and 8 may be adjusted to meet local needs and feedback from water quality monitoring.

GF3. There are five watersheds within the town (Herring River, Pleasant Bay, Wychmere Harbor, Saquatucket Harbor, Allen Harbor), encompassing much but not all land area within the town. The Pleasant Bay and Herring River watersheds are shared with neighboring towns; the Wychmere, Allen and Saquatucket Harbor watersheds are each wholly contained within the town's boundaries. All five watersheds have MEP reports establishing critical nitrogen thresholds.

GF4. The CWMP is subject to mandatory DRI review pursuant to Section 2(d)(i) of the Commission's *Enabling Regulations Governing Review of Developments of Regional Impact* ('Enabling Regulations') and Section 12(i) of the Cape Cod Commission Act because the CWMP required the preparation of an EIR under MEPA.

GF5. The Secretary issued a Final Certificate on May 13, 2016 stating that the SEIR for the CWMP adequately and properly complies with MEPA and its implementing regulations.

GF6. The Development of Regional Impact public hearing period was opened by hearing officer at a pro forma hearing June 27, 2016; the first substantive Development of Regional Impact public hearing on the CWMP was held by subcommittee July 28, 2016.

GF7. The CWMP is consistent with District of Critical Planning Concern (DCPC) implementing regulations, as applicable; the Town of Harwich Local Comprehensive Plan (LCP); and municipal development regulations, subject to obtaining all local permits, licenses and approvals required to implement the constituent components of the CWMP.

- The Cape-wide Fertilizer Management DCPC was adopted by county ordinance in 2014. The Town of Harwich does not have implementing regulations pursuant to this DCPC (and thus consistency with Cape-wide Fertilizer Management DCPC implementing regulations is inapplicable); however the Town has committed to a fertilizer management education program in its CWMP;
- The Six Ponds DCPC in the North East part of Harwich was adopted by county ordinance in 2000. The Town developed and adopted implementing regulations into its zoning by-law pursuant to this DCPC. The CWMP includes land within the geographic extent of this DCPC designation. The CWMP is consistent with the goals of this DCPC and its implementing regulations, as they share the common goal of enhancing water quality protection of various water resources. Additionally, the build-out and growth assumptions of the CWMP are consistent with permissible and anticipated development patterns in the designated DCPC area.

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- The CWMP was developed to be consistent with the Town's LCP. The build-out and growth assumptions of the CWMP are consistent with potential development patterns in the town under existing zoning and envisioned under the LCP, providing infrastructure to support the planned growth outlined in the Town's Local Comprehensive Plan. Section 2 of the SEIR addresses the relationship between the CWMP and LCP. The CWMP cites an overarching vision contained in the LCP, to "...enhance vitality of our cultural, recreational, and natural assets." Section 13 of the SEIR addresses revised flow assumptions for planned growth under the LCP (especially for East Harwich), not specifically addressed in MEP reports for the town's estuaries, and not assumed under the existing zoning by-law. The SEIR's Executive Summary addresses the relationship between growth management, natural resources and economic development, and states

  "Growth and economic development are necessary components of any vibrant community. Harwich's preferred approach to growth management is to promote planned growth in targeted areas that enhance pedestrian culture and offer a positive experience for residents, business owners, and visitors. Focusing growth in concentrated areas that include the appropriate supporting infrastructure (utilities, transportation, etc.) is a 'smart growth' approach that allows for better protection of natural resources in Town. As such, Harwich has designated three "villages" in Town where planned growth and economic development are desired. These areas are the commercial districts known as the East Harwich Village Center, Harwich Port, and Harwich Center. Each of these areas has been undergoing independent planning for development and redevelopment appropriate to the character of the particular area."

GF8. The probable benefit of the Plan is greater than the probable detriment of the Plan. Benefits of the CWMP include water quality protection and restoration; adaptive management to minimize and mitigate project costs and project impacts; a long term plan to meet applicable TMDLs established under MEP; reasonable provisions for allowing balanced, targeted growth in areas appropriate for additional development; comprehensive planning for various water resources within the town; and a collaborative planning approach with neighboring towns, which should economize infrastructure costs to the town and region.

GF9. 208 PLAN UPDATE CONSISTENCY

The Commission has completed the Section 208 Area-wide Water Quality Plan (208 Plan Update), which was approved/ certified by the Commonwealth in June 2015 and by US EPA in September 2015. In its certification of the 208 Plan Update, the Commonwealth of Massachusetts designated the Town of Harwich as the Waste Treatment Management Agency (WMA) for those watersheds and portions of watersheds located within the Town of Harwich. Consistency with the 208 Plan Update is required to obtain SRF financing, and pursuant to Section 13(l) of the Commission Act, CWMPs are required to be consistent with the 208 Plan Update, among other requirements.

A. As detailed below, the Harwich CWMP in concept meets the overall goals of and is consistent with the 208 Plan Update, making the Town of Harwich eligible for State Revolving Fund (SRF) funding:

a. The CWMP's nitrogen reduction planning is conducted on a watershed and subembayment basis.

b. The CWMP accepts responsibility for 100% of nitrogen in the Allen, Saquatucket and Wychmere water- or sub- watersheds which are wholly or primarily within the Town of Harwich, and accepts responsibility for Harwich's share of nitrogen contributions in the shared water- or sub- watersheds of Herring River, Pleasant Bay, and Swan Pond River, as allocated in the 208 Plan Update.

c. The goal of the CWMP is to: a) achieve TMDL compliance for all marine embayments wholly within the Town of Harwich; and b) to address the required nitrogen removal amounts allocated to the Town of Harwich in the 208 Plan Update to achieve TMDLs in shared watersheds.

d. The CWMP includes a growth management component that proposes to remove 100% of nitrogen from new growth within the town. There will be no increase in untreated nitrogen within nitrogen sensitive areas.

e. The CWMP creates an adaptive management program to implement nitrogen reduction strategies that achieve TMDLs while adapting to water quality and environmental monitoring results and other changes in circumstances over time.

f. The CWMP presents a hybrid approach to watershed planning, including current and future consideration for alternative nutrient management techniques; a regional approach to nutrient management issues; and consideration of non-nitrogen collection needs in the subject watersheds.

B. Future 208 Plan Update Consistency

The validity of this decision over the CWMP's 40 year time horizon is conditioned on continued consistency with the 208 Plan update. Future 208 Consistency will be measured and certified at milestones identified in this decision and subsequently through the adaptive management process in which the Commission will participate with the Town.

In order to maintain 208 Plan Update consistency, which is required for continued eligibility for SRF funding, implementation of the Harwich CWMP shall be conducted consistent with the process outlined in the 208 Plan Update, as discussed below. Adaptive Management and 208 Plan Update Certification are related, as each are integral, ongoing requirements of the long term CWMP to ensure that the CWMP proceeds with and achieves over time its fundamental goals. The process includes creation of a Technical Review Panel that includes local, regional and state representation to provide input on the review and refinement of the Plan throughout each planning and implementation increment. The formation and engagement of the panel as part of the Adaptive Management Plan is a requirement of this decision and it is recommended that it be a requirement of any state permit issued. It should be noted that the Commission's future determinations of 208 Plan Update consistency and reviews under the AMP will focus on targeted watershed planning.

a. Public Engagement

Technical Review Panel recommendations should be discussed with the watershed community through a facilitated process to gain consensus for preferred actions going forward. Public outreach measures should include engagement of Environment Justice Communities and existing watershed associations, among other stakeholders.

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The SEIR identifies the need for a group to track innovative and alternative technologies. Going forward, the town should identify how that group would be formed and involved in the adaptive management plan, and how alternative technologies will be incorporated into the town's wastewater management approach.

The Town of Harwich should consider promoting the formation of new watershed association(s) to ensure public support of subsequent phases during implementation.

The Commission should be represented on CWMP committees.

b. Planning Approach

The Town of Harwich should proceed with the Plan consistent with the nitrogen load assumptions contained in the 208 Plan Update, as they may be amended from time to time based on best available data.

The Town should proceed with its hybrid approach to watershed planning, including the consideration for further incorporation of Pilot/ Non-traditional Projects, as appropriate, and continuation of the fresh water pond water quality program.

c. Coordination in Shared Watersheds

The Town of Harwich should continue to work with neighboring towns to pursue shared infrastructure to reduce nitrogen in watersheds, and to facilitate further coordination, the Town of Harwich should consult with the Commission on further development of uncompleted items in phase 1, and phases 2 through 8 of the CWMP as part of the AMP and 208 Update certification process hereunder. Future watershed based planning should include the development of a hybrid plan in shared watersheds consistent with the Hybrid Watershed Scenario planning approach set forth in the 208 Plan Update and include a range of both collection and non-collection technologies. Planning in shared watersheds should be in collaboration and cooperation with the Commission and the towns of Chatham, Orleans, Brewster and Dennis.

The Town of Harwich should undertake an analysis of options to provide capacity for wastewater treatment and disposal by the Town of Dennis.

The Town of Harwich should analyze the potential for adopting a Nutrient Trading Program with abutting towns to achieve TMDL compliance.

d. Fertilizer and Stormwater Nutrient Management Credits

The Town of Harwich should be prepared to respond to the draft small MS4 permit in accordance with permit deadlines.

The Town of Harwich declined to adopt a nutrient management bylaw as authorized by the Cape–wide Fertilizer Management District of Critical Planning Concern in 2014. The town should develop a detailed plan, including educational initiatives and proposed actions and budgets for fertilizer management to support the credit taken for fertilizer reductions in the CWMP.

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The town identifies some strategies for managing turf fertilizer use within the town in the SEIR. The SEIR notes the town's participation in the Pleasant Bay Alliance as one avenue for improving awareness and education about the link between water quality and fertilizer use within the Pleasant Bay watershed. The town also plans to implement town-wide educational strategies to improve understanding about fertilizer use. In order that the educational efforts prove effective, the town should provide more detail about how and to what extent the town will take on town-wide education, including of residents, seasonal homeowners, and the landscaping community. Such detail should also identify specific actions to be undertaken, and the parties responsible for undertaking such actions.

e. Capital Project Development and Coordination

Construction impacts on marine and drinking water resources resulting from deployment of infrastructure and Minimum Performance Standards (MPSs) and Best Management Practices (BMPs) for siting technologies will be addressed as project plans for specific components of the Plan are submitted pursuant to the Commission's process for requesting issuance of Certificates of Compliance under this decision.

The town should outline how it proposes to meet the criteria of the SRF program to be eligible for zero-percent interest SRF loans, including adoption of local flow neutral regulations or other regulatory controls.

At the completion of each planning period of the adaptive management plan, an evaluation of the performance of deployed technologies should be conducted, and the town should assess whether it has achieved desired nutrient removal performance, cost effectiveness, and any associated co-benefits.

The AMP should address on-going implementation of other capital projects in the Town of Harwich alongside the CWMP.

Harwich has had an active shellfish program for many years. The SEIR indicates an interest in determining whether the shellfish program has had an impact on nitrogen management, but as this initiative is not detailed in the SEIR, the CWMP does not indicate, but should going forward, whether there is room for additional seeding in the town's water bodies, or opportunities for aquaculture grants or other expansion of the program. The town should also indicate how it intends to monitor nitrogen removal if it seeks credit for an aquaculture program.

f. Monitoring and Data Sharing

The Town of Harwich should share ambient water quality monitoring results and performance monitoring results throughout the AMP process with the Commission and with the Towns of Chatham, Brewster, Dennis and Orleans.

The town shall provide a detailed monitoring plan that includes, at a minimum, an assessment of downgradient resources of sensitive receptors, placement of monitoring stations, parameters of evaluation, methods for collecting and analyzing data, and frequency of data collection. The monitoring should include site specific monitoring to understand the impact of stormwater infrastructure upgrades and the effectiveness of fertilizer reduction strategies.

To maintain Section 208 Update consistency, the town should share building permit data with the Commission on an annual basis. Such data shall include but not be limited to: new residential units and non-residential units, and all new development likely to result in an increase in wastewater disposal. This data should be provided to the Commission electronically either by providing the Commission with access to vendor-managed assessing data or directly from the Town Assessing Department.

The town should enter into a data sharing agreement with the Commission including, but not limited to: building permit data (as discussed above), water supply pumping (annual statistical reports, or ASRs) and water quality results, parcel based water use, data relative to the monitoring of technologies deployed under the CWMP adaptive management plan, and data relative to the monitoring of water quality and environmental conditions to demonstrate TMDL compliance.

The Town's monitoring and reporting should include CECs, and the relative percent of nitrogen removed for each major watershed for phases of the plan.

g. Growth Management

The Town should develop its vision for desired growth in the town as relates to the CWMP, and establish appropriate growth neutral management strategies accordingly. Management strategies could include flow neutral, zoning or other land use regulations, development of open space policies, and further acquisition of open space.

Where sewering creates additional growth or development potential in or proximate to historic districts or areas with a significant number of historic properties, the Town should consider creating additional historic districts or implementing other measures to protect historic resources that may be threatened by greater development pressure.

REGIONAL POLICY PLAN ISSUE AREA FINDINGS

As detailed in the following sections dealing with Issue Areas applicable and material to the Plan, the Plan is consistent with the Regional Policy Plan (RPP), subject to the conditions in this decision. The RPP currently in effect and applicable to the Plan is the 2009 RPP, as amended August 17, 2012.

Land Use Findings

LUF1. The build out conditions in the SEIR indicate the potential for targeted, development growth in the East Harwich, Harwich Center and Harwich Port commercial center villages. The Commission encourages appropriate, planned growth with supporting infrastructure that maintains the economic vitality of the town, balanced with other concerns of the Commission Act.

LUF2. In order to manage new growth that might accompany sewer service, the SEIR identifies the potential for down-zoning and acquiring land for permanent protection. The SEIR identifies East Harwich Village Center as one area where the town would like to focus additional 'smart' growth; and relatedly, the Plan identifies parcels throughout town where additional development may occur (under a 'buildout' scenario). However, the CWMP would benefit, under

adaptive management, from a more comprehensive and detailed statement about the town's perspective and vision for future growth in the town.

- If higher densities are desired in certain areas, the town should discuss strategies to remain 'flow neutral' with this increased development potential.
- The CWMP has a general statement about the opportunity to purchase open space to reduce nitrogen-generation potential, but there are no strategic or priority lands acquisitions identified. The CWMP should discuss such strategies, including with reference to relevant provisions in the town's Open Space and Recreation Plan (or a draft OSRP, under development) and its capital planning documents.
- The CWMP should also discuss in greater specificity the costs to serve existing development versus development projections under the CWMPs build-out assumptions.

Economic Development Findings

EDF1. Minimum Performance Standard ED4.1 under Goal ED4, *Infrastructure Capacity*, requires that infrastructure development, such as sewer infrastructure, be proposed in response to public need and demand, and will result in service improvements. The Commission encourages appropriate, planned growth with supporting infrastructure that maintains the economic vitality of the town, balanced with other concerns of the Commission Act.

EDF2. Public sewer will improve the availability, reliability and quality of septage wastewater services in the proposed sewer service area, and is needed for water quality maintenance and improvement, which is central to the economic vitality of the town.

Energy Resources Findings

ERF1. Though wastewater projects are specifically exempt from review under the Minimum Performance Standards of the Regional Policy Plan's Energy section, the Commission recognizes that the town is proposing or considering energy efficiency measures associated with the WWTF on site HR-12.

Water Resources Findings

WRF1. The SEIR includes a needs assessment which provides the background and interpretation of the water quality conditions for drinking water, fresh water ponds, and coastal embayments, which are the three major water resource areas identified in the Cape Cod Regional Policy Plan and the 208 Plan Update. The background information provides the framework for the project and identifies the Town's overall wastewater management needs. The CWMP includes a process to identify wastewater collection areas, primarily to achieve the amount of septic nitrogen removal necessary to restore coastal water quality as determined through the MEP studies' critical nitrogen loads. The process is one that uses parcel specific water use information and accounts for the occurrence of natural attenuation and opportunities for enhanced attenuation similar to the CCC 208 Plan Tracker and Watershed/MVP analysis. Sewer collection is prioritized in several areas as a result of this process. The CWMP also includes a process to account for the removal of septic nitrogen and the return of treated effluent nitrogen to achieve the overall goal of balanced restoration.

WRF2. The CWMP cross referenced water quantity information from cumulative pumping and actual parcel level metered water use. The town-wide water use for the years 2001 to 2007 is between 679 and 600 million gallons. The average household water use is 186 gpd and commercial use is 768 gpd whereas the MEP residential flow is 166 gpd. Specific water uses for each Marine watershed from observed water use and MEP are compared and the differences

were determined to be minor and both appropriate for planning purposes. The CWMP used the MEP buildout analysis and applied the appropriate water use to project the number of residential and commercial properties. The increase in wastewater flow ranges from 14 to32% for the five major coastal watersheds, as listed on Table 1, with an average of a 26% increase for growth based on 2001 to 200 water use. The CWMP evaluated the effect of irrigation water use on wastewater projects and found that the long-term irrigation amount is 315,000 gpd for July and August, making up 3 of the 10% average non-consumptive water use. Maximum month peaking factor for Harwich is 2.2 times the average flow of 1.72 mgd. The buildout assessment makes use of the MEP buildout analysis including some modification for economic development targeted growth in the East Harwich, Harwich Center and Harwich Port village areas. The CWMP uses buildout water volumes for infrastructure design purposes over 6 Phases. The CWMP's Adaptive Management Planning contemplates a process to document how the Town would comply with a flow-neutral condition for SRF zero percent loan eligibility.

WRF3. The Drinking Water Resources Goal in the RPP is *"to maintain a sustainable supply of high quality drinking water and restore and protect the ecological integrity of fresh and marine waters,"* and the Plan is consistent with the RPP. Historic water quality data from the public water supply wells in the Plan area show that they have average nitrate-nitrogen concentrations well below the RPP limit of 5 ppm and the state drinking water standard of 10 ppm. In addition, none of the wells display any significant concentration trends; groundwater nitrate concentrations tend to fluctuate in a fairly constrained range below 1.5 ppm. Drinking water supplies in the Plan area do not have any significant impacts from wastewater-derived nitrogen given the long range efforts of the Town in acquiring lands within the Zone IIs and to establish local regulatory means to protect them.

WRF4. The CWMP reports that approximately 9,800 accounts in the town are serviced by drinking water from 14 gravel packed wells that collectively pump approximately 2 MGD. The drinking water quality is excellent with the exception of naturally occurring iron. The Town Water Department recently completed a new 6.5 MGD treatment plant to remove iron and manganese. The average nitrate concentration from the wells is 1.1 ppm, which is substantially below drinking water health limits. The Wellhead Protection Areas (WPAs) that provide recharge to the public supply are not identified as a wastewater management need, however, limited sewering in overlapping Marine Water Recharge Areas (MWRAs) will provide potential benefits to drinking water quality. The Pleasant Bay drinking water well recharge area that is proposed for sewering for Pleasant Bay has an average nitrogen concentration of 2 ppm, which is below the state and federal standard of 10 ppm, and the Cape Cod Commission loading standard of 5 ppm. The Town has conducted monitoring under the Unregulated Contaminant Monitoring Rule for Compounds of Emerging Concern (CECs).

WRF5. There are 22 major ponds in Harwich. The Water Quality Task Force has taken advantage of the Cape Cod Ponds and Lake Stewardship (PALS) program to obtain important long term water quality data. The CWMP utilized prior reports, including those prepared through the Cape Cod Commission, and developed a pond program to protect and, where necessary, restore pond water quality. The program proposes continued monitoring, evaluation of stormwater treatment opportunities and further investigation, particularly to determine whether phosphorous loads are internal (sediments) or external (from the watershed). Three areas were identified around John Joseph, Bucks and Sand Ponds, Hinckleys, Seymour and Long Pond, and Paddocks Pond. The CWMP indicates that continued monitoring and study are required to determine the best overall approach to protect and restore pond water quality. An alum treatment of Hinckleys Pond is recommended in a detailed study by Water Resources Services dated March 2012 and an unscheduled associated CWMP project.

WRF6. The CWMP reports on the findings of the Massachusetts Estuary Project (MEP) which includes critical nitrogen loads referred to as thresholds. The next step is for the MA Department of Environmental Protection (DEP) is to establish Total Maximum Daily Loads (TMDLs) from the thresholds in the MEP report and to work with the Town and SMAST to prepare and complete the regulatory review necessary to establish the TMDLs.

WRF7. The MEP critical nitrogen loads are presented as the amount of septic nitrogen that will need to be removed from the watersheds. The percent removal for existing and buildout conditions is summarized on Table 1 below.

Table 1 Percent Nitrogen Removal by Watershed

Watershed	Present Load (kg/d)	Percent Septic Reduction Existing Condition	Percent Septic Reduction Buildout Condition
Allen Harbor	5.64	74	78
Wychmere Harbor	3.21	100	100
Saquatucket Harbor	13.25	60	58
Pleasant Bay (Round Cove)	5.18	64	68
Pleasant Bay (Muddy Creek	13.32	48	58
Pleasant Bay	16.69	61	70
Herring River	38.59	38	58

Of particular note is the large increase of percent removal that occurs under buildout conditions in the Herring River Watershed. A majority of this future load comes from the West Reservoir sub-watersheds where the amount to be removed increases from zero at present conditions to 48% at buildout conditions. This results in the largest difference between percent removal for existing and buildout conditions in the table above. Herring River has the largest residential water use (181 gpd) of the Harwich embayments, and the Commission recommends that non-structural controls on future growth, including open space protection in the Herring River watershed be considered as an alternative/complementary strategy for nitrogen management. The CWMP acknowledges the role that potential non-traditional technology may play in reducing potential sewer collection areas within the year time frame prior to implementation of Phase 4 of the CWMP.

WRF8. Two areas of identified concern for Title 5 failure are the area north of Allen Harbor due to high groundwater, and the Campground area due to dense development. Sewering to alleviate Title 5 issues is recommended by the CWMP because the areas are also identified for nitrogen reduction. Wastewater needs for nitrogen reduction using the MEP thresholds was summarized above. Wastewater needs for socio-economic reasons for East Harwich, Harwich Port and Harwich Center were identified and factored into projected overall wastewater flow and management scenarios. The CWMP acknowledges that the Campground area may be an area that receives and interim wastewater solution within the 40 year Plan. The Commission notes that the proposed 6.6 million dollar harbor improvement and dredging project for Saquatucket Harbor may remove a significant source of benthic nitrogen and should be acknowledged in and incorporated into the Plan as an interim intervention through the AMP. The dredging of Allen's Harbor in 2012 also offers an opportunity to evaluate the water quality changes that resulted and the potential to achieve greater improvements with potential future dredging design considerations for the Harbor. Commission staff can assist the Town in this evaluation.

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WRF9. The CWMP used a screening process to eliminate unsuitable parcels for consideration as potential facility and effluent disposal sites. Of the 11,600 parcels in town, forty parcels were identified for further consideration, ten parcels were selected for further study, and five sites were chosen as part of the CWMP management scenarios. The site suitability approach was methodical and included reasonable assumptions for the projected and cumulative sub-regional volumes of wastewater. The CWMP identified PB-3 as a key site for effluent disposal, noting that DEP would not require costly removal for Total Organic Carbon if this site was used. However, the Town vote to authorize the purchase of the site for effluent recharge failed in 2015. Accordingly, the Town is now moving forward with the Chatham Plant disposal option. The draft Intermunicipal Agreement includes language that Chatham will provide a 3-year advance notice in the event that it intends not to continue accepting Harwich wastewater. As such the Town continues to investigate other options for disposal for the Pleasant Bay effluent. Options for ocean outfall and numerous other scenarios have been developed including a single disposal scenario (3A) at the HR-12 site near the landfill.

WRF10. The CWMP developed eight alternative scenarios for wastewater management as summarized in the Table 2 below.

- The baseline case included the nitrogen offset that is anticipated to result from two natural attenuation projects for Muddy Creek and Cold Brook. The parcels and wastewater flows reflect the amount needed to offset nitrogen loads from the proposed treatment effluent. The CWMP developed a number of criteria to compare the scenarios including capital cost, operation and maintenance, cost efficiency (shown below), a variety of technical criteria, institutional criteria and environmental criteria. Commission staff finds that the criteria ranking process is a thorough and fair method. The total criteria score (as weighted) of the scenarios (shown below in Table 2) indicate that scenarios 3A, 4A and 5A are the most favorable. The (7A) scenario including I/A systems had the highest cost per nitrogen pound removal.
- The CWMP, less formally, evaluated the use of smaller facilities, sized at 100,000 gpd as an alternative. The Town used the selected decision criteria to determine that the use of more numerous 100,000 gpd facilities was not favorable, largely from a bottom line cost perspective. Table 3 below shows the number of parcels and flow to be captured and treated. The amounts for three of the smaller southern embayments range from 26,000 to 95,000 gpd at build out. Smaller treatment facilities, while incurring a cost premium, can potentially be deployed over a shorter time frame with more flexibility for siting. The identification of sites to treat and dispose of wastewater at these lower volumes could also include parcels that are smaller than 5 acres. Similarly, non-traditional interventions like the Saquatucket dredging project, in which benthic material with high nitrogen concentration is proposed to be removed from the harbor, should be analyzed to determine whether they could provide faster removal of nitrogen in targeted areas to produce demonstrable water quality improvements, and thus should be incorporated more greatly into the plan.
- The CWMP used the percent septic nitrogen removal for the buildout condition. Commission staff suggests that the Town identify the extent of potential sewer collection areas for the existing development condition to prioritize how the system could be phased in through selected planning horizons as development proceeds from existing

conditions to buildout conditions. Reporting the relative percent of nitrogen removed for each major watershed for phases of the plan should be part of the Adaptive Management Plan.

Table 2 Wastewater Scenarios

Scenario	Description	Parcels Sewered	Wastewater Flow	Cost $/Pound of NO3 removed	Total Score
1A	3 Sites (Allen to Saquatucket)	2992	670000	199	270
2A	3 Sites (Allen to Herring)	3092	682000	192	266
3A	1 Site in Herring River	3198	697000	146	145
4A	2 Sites HR and PB	3184	704000	175	223
5A	2 Sites HR and PB (Chatham)	3094	680000	170	204
6A	4 Sites	2968	667000	215	321
7A	IA Systems & four Sites	1643	417000	447	402
8A	1 Site and Ocean Outfall	2438	564000	252	366

Table 3 Sewershed Characteristics

Sewershed Characteristics for Each Watershed (Option 5A)	Parcels	Current Average Water Use (GPD)	Buildout Average Water Use (GPD)
Allan Harbor	234	52,100	57,000
Wychmere Harbor	123	26,300	29,000
Saquatucket Harbor	451	90,700	95,200
Pleasant Bay	1205	205,900	235,900
Herring River	2340	399,300	515,700

WRF11. The CWMP includes a discussion about regional approaches:

- The CWMP considers sewer collection of a section of Dennis Port within the Herring River watershed. This aspect is included in all scenarios. The towns have also discussed the possibility of a shared treatment facility to be located in Dennis.
- Another regional aspect is the use of the Chatham facility to accommodate the flow from the East Harwich and the Pleasant Bay watershed. Treatment at the Chatham facility attains a nitrogen treatment efficiency of 3 ppm. This regional option would make use of early capacity at Chatham plant and reduce the overall construction cost to both towns through a shared facility. The Harwich effluent would be retained and disposed of at the Chatham facility until such a time that the Chatham sewer expansion project would require that capacity. The CWMP indicates that the Harwich will continue to seek a site to bring treated effluent back to Harwich for disposal in the Pleasant Bay watershed in the event that Chatham needs to use the entire disposal capacity. This would require both a disposal site and a force main.

Additionally, the Muddy Creek habitat restoration/ nitrogen attenuation project is a collaborative one originally contemplated during DRI review of the Chatham CWMP, approved by Cape Cod Commission by decision dated March 29, 2009. Commission staff notes that the Chatham CWMP DRI decision contains findings and conditions relevant to continued implementation of the Muddy Creek project between the towns, and shared use of the Chatham facility. Specifically, under the decision, Commission

staff will work with the staff to analyze the feasibility of expanding use and capacity of the Chatham facility; will review the IMA between the towns; and review the results of the Muddy Creek project through adaptive management planning as it bears on the development of future sewer footprints in the towns, and ongoing 208 Plan consistency review.

- Finally, the towns of Harwich and Brewster have discussed, and will continue to discuss, a collaborative approach to meeting TMDL's in the shared Herring River watershed. The towns have previously collaborated on freshwater pond water quality improvement projects.

WRF12. The following is a description and time frame, using the plan's proposed request for funding, of the Harwich preferred plan phased approach. In keeping with the adaptive management process described in the SEIR, after the Plan undergoes DRI review and is further implemented, the Commission will continue to review the Plan for consistency with the Cape Cod 208 Plan Update at regular milestones identified during DRI review, as a condition of proceeding with subsequent phases or sub-phases of the Plan. Should the town be required to file Notices of Project Change (NPC) for the Plan under MEPA (e.g. non-traditional or pilot projects), the town shall provide the Commission a copy of such NPC for review, and a determination about whether the NPC requires modification to this decision. Notwithstanding the foregoing, NPCs shall be incorporated into and reviewed by the Commission as part of the Town's AMP.

- Phase 1, 2013: focuses on implementation of two natural nitrogen attenuation programs. The first is the completion of the Muddy Creek Bridge under a Phase 1 Waiver to increase the existing opening to 24-feet in order to increase flushing and help restore ecological habitat. The second is the evaluation of options to improve the natural attenuation in the Cold Brook former cranberry bog network off Bank Street. (This phase was previously proposed to include the purchase of land for the PB-3 effluent recharge facility, but it did not pass 2016 Town Meeting vote). The implementation of a Hinckleys Pond restoration project has been deferred until a later time.
- Phase 2, 2016: design and installation of sewers in the Pleasant Bay watershed, which is the largest watershed in the Town with the highest percentage of septic system nitrogen removal required. This allows the Town to work with Chatham, utilize a regional approach to wastewater treatment and recharge, and to provide further protection to some of the Harwich drinking water supply wells. Phase 2 also provides sewer service to the East Harwich Village Commercial District (discussions and planning have been ongoing about rezoning this area as a 'smart growth' district, the 'East Harwich Village Center'). The recommended plan for the Cold Brook natural attenuation would also be implemented in this phase. The Commission notes that the Round Cove watershed area identified for sewering is located at the most upgradient portion of the watershed beyond the 10 year time of travel. Therefore the water quality benefits to Round Cove would not be manifested prior to 10+ years. The Commission recommends that the town might consider through the AMP expedited sewer construction in areas where attendant, beneficial changes to water quality can be quickly expected. The Commission used its Watershed/MVP tool to evaluate the downgradient area for sewering to meet the TMDL criteria. The CWMP, through the AMP, might prioritize sewer in the downgradient

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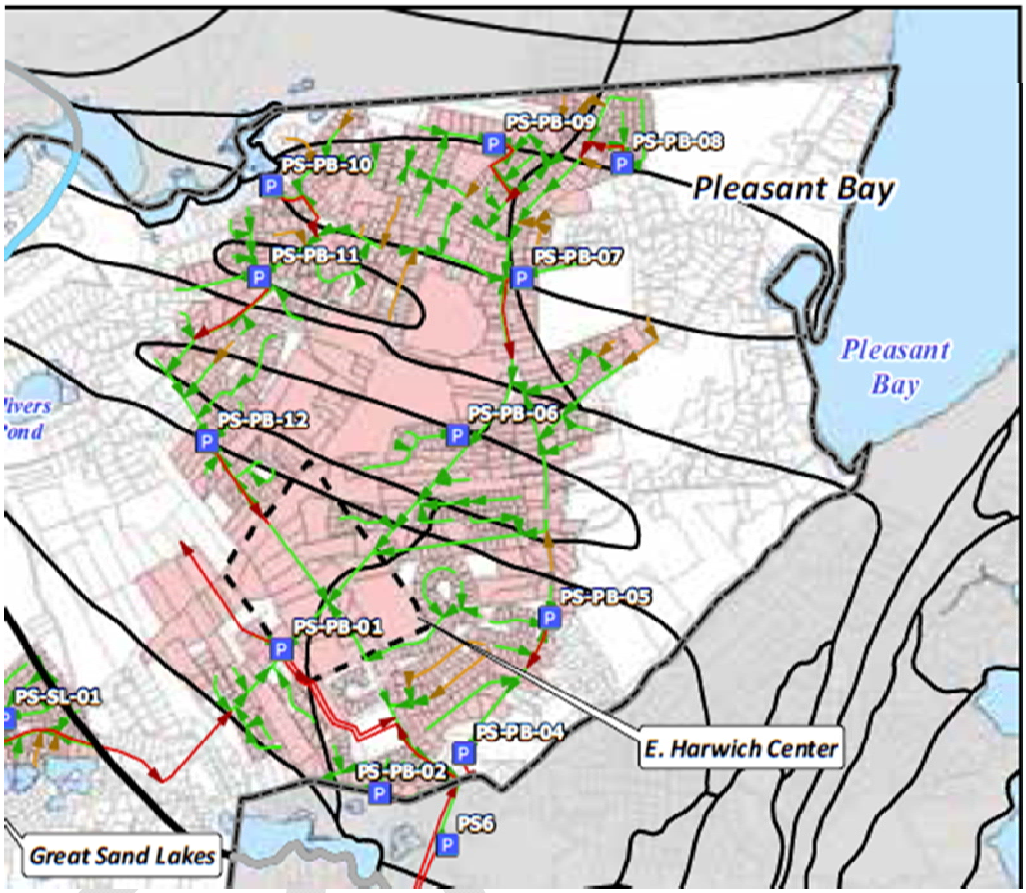
portion of the watershed to provide earlier than currently anticipated water quality benefits to Round Cove.



- Phase 3, 2021: focuses on the Pleasant Bay watershed and installing additional sewers in the area north of the Harwich Village Commercial District. A portion of the collection system area on the west side of the Pleasant Bay Watershed will be delayed until Phase 8 to allow for water quality monitoring and evaluation of the impacts from sewering and the Muddy Creek bridge project. This phase may also include the implementation of the potential Seymour Pond restoration project. The design and construction of the delayed Chatham Facility expansion will also be completed in this phase.
- Phase 4, 2026 and 2029: will be done as two programs. Overall the phase will collect wastewater in the Northeast part of the Herring River watershed. The collected wastewater will be pumped to the new treatment plant to be constructed at Site HR-12 (landfill site) where the treated effluent would be recharged. The SBR treatment plant would initially be constructed for capacity of about 0.45 mgd which would treat collected flows from Phases 4, 5 and 6. Phase 4A will include the construction of the HR-12 treatment plant and 4B will include the construction of the sewers in the Herring River Watershed.
- Phase 5, 2033: will collect wastewater in the Northwest part of the Herring River watershed and near site HR-12. The collected wastewater will be pumped to the treatment plant at Site HR-12 where the treated effluent would be recharged.

- Phase 6, 2038: will collect wastewater in the Southeast part of the Herring River watershed. This phase will also install some of the planned sewers in the Allen and Wychmere Harbor watersheds in order to begin meeting TMDLs in those areas. Collected wastewater will be pumped to the HR-12 site for treatment and recharge. This phase may also include implementation of the potential Bucks and John Joseph Pond restoration projects.
- Phase 7, 2043: focuses on expanding the HR-12 treatment plant and installing the remaining required sewers in the Herring River watershed to meet TMDL. The treatment plant at Site HR-12 will be expanded to the full 0.9 mgd capacity in this phase.
- Phase 8, 2048: will install sewers in the Saquatucket watershed and the remaining areas of the Pleasant Bay watershed required to meet those TMDLs. Areas to be sewered near the Great Sand Lakes and the Campground will also be included in this phase. Sewer service areas in Phases 5, 6, 7 and 8 can be adjusted as needed to meet local needs and based on feedback from water quality monitoring.

WRF13. The adaptive management plan framework detailed in the SEIR contains the required fundamental aspects. The town shall provide for the Commission an adaptive management plan based on the framework in the SEIR as a condition of this decision, and re-evaluate and update the AMP at intervals set out in this decision and subsequently through the AMP process as determined by the Commission in consultation with the town.

WRF14. The 40 year CWMP is estimated to cost $230 million dollars. The CWMP evaluates several cost recovery models for just the first 3 Phases which is estimated to cost $47.8 Million dollars. The first Phase is planned to service 1,205 parcels in the East Harwich Pleasant Bay area. Based on a policy adopted by the Board of Selectmen, the average cost to every Harwich homeowner is estimated to be $254. The recommended cost policy will source funds from a combination of the Town's Water Infrastructure Investment fund, tax rate and user fees, in no set initial percentages such that the percentages could be adjusted through adaptive management and as later phases of the plan are proposed to be implemented. The CWMP includes other models where the cost would be somewhat lessened, though the town recommended cost policy and recovery plan factors equity into the analysis. The Commission will work with the Town to further evaluate other cost models and grants.

Natural Resources Findings

NRF1. The Harwich CWMP is a phased plan for addressing water quality within the town, meeting nitrogen TMDLs and addressing wastewater management needs within the town. While the plan is designed to accommodate changing conditions through adaptive management, the CWMP identifies specific infrastructure projects which, if constructed, will have impacts on natural and coastal resources protected under the Cape Cod Commission Act. Project elements which may have impacts include the installation of sewer mains and pumping stations in several phases, construction of a wastewater treatment plant, construction of disposal beds, and implementation of natural attenuation projects.

NRF2. Significant wetland impacts associated with construction are not anticipated since the installation of sewer mains and pumping stations will be located within existing road rights of way. According to the SEIR, the impacts that may result from these installations will occur within previously disturbed areas, and construction-related considerations to protect wetlands may be addressed during local permitting. The natural attenuation projects, by their nature, are

located within natural wetland systems. The Muddy Creek restoration has been completed, with the grading and seeding of the construction footprint within wetland and buffer resource areas complete as well. Monitoring should provide evidence on the extent of water quality and habitat improvements resulting from the restoration. Alterations to the Cold Brook to improve natural attenuation should be designed to balance this nitrogen management goal with other natural resource goals, such as habitat restoration, and to ensure that the ultimate benefits to the natural environment outweigh the impacts that may result from work within the retired cranberry bog/wetland system.

The pond restoration projects are discussed in a preliminary fashion in the SEIR and appear to involve chemical treatments to the ponds' waters rather than physical alterations such as dredging.

NRF3. Significant impacts to wildlife and plant habitat associated with construction of the sewer mains are not anticipated since these installations will be located within existing road rights of way. Additional habitat evaluations may be warranted in the undisturbed wooded portion of site HR-12 to ensure that there are no vernal pools present. Portions of HR-12 are mapped rare species habitat, and to the extent these areas may be considered for disposal fields, the town should coordinate project planning, design and implementation with the NHESP. This site is not mapped as BioMap2 Core Habitat. As noted, the Muddy Creek project has been completed. Alterations to the Cold Brook bog system should aim to balance the town's goal of improved natural attenuation with the potential impacts to existing wildlife and plant habitat resources, and the benefits that may accrue from habitat restoration at this site.

NRF4. There are not significant impacts to coastal resources anticipated from the planned projects. Again, impacts within coastal resource areas will occur within road rights of way, minimizing new impacts. The town should ensure that pumping stations located within land subject to coastal storm flowage are designed to withstand the impacts of flooding and sea level rise.

Heritage Preservation/Community Character Findings

HPCCF1. The Harwich CWMP proposes sewering within several historic neighborhoods and along historic roadways. The SEIR identifies the location of historic properties that have been inventoried or designated within historic districts in Figure 14-12 of the Report. In addition to these identified properties, Harwich has numerous historic buildings that have not yet been inventoried. Because the proposed sewer work will occur primarily within road layouts, it is not expected to impact historic properties directly. There is potential for increased development pressure on some historic properties where sewer installation could encourage greater development. The town of Harwich has only one historic district covering a portion of Harwich Center, and should consider creating additional districts or implementing other measures to protect historic resources that may be threatened by greater development pressure.

HPCCF2. The SEIR defines the process where Massachusetts Historical Commission (MHC) will review each phase of development as it is designed so that impacts to historic/archaeological resources can be considered at a more detailed level. This phased review will allow additional historic inventory work completed in the interim period to be considered, and would address RPP standards for protection of historic and archaeological resources. Siting above-ground structures related to the project, such as pumping stations, in historic areas should be avoided. If siting in historic or cultural landscapes is necessary, then the appropriate design, materials and landscaping should be chosen to minimize impacts on heritage resources.

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HPCCF2. Any permanent exterior fixtures proposed related to the CWMP shall be consistent with MPS HPCC2.11 and Technical Bulletin 95-001 (as amended), i.e. full cut-off at 90 degrees from vertical.

Transportation Findings

TF1. The CWMP proposes approximately 92 miles of new sewer mains to be installed within existing roadways. The Plan is not anticipated to generate additional traffic other than trips relating to construction activities, and will not permanently impact public rights-of-way. The CWMP recognizes the Cape Cod Commission's recommendations regarding the coordination of sewer installation work, that is, that potential impacts on the transportation network related to construction or expansion of any treatment facilities be considered by the Town at the appropriate stage in the design process. The Commission also recommends that the Town coordinate sewer construction activities with planned roadway improvement projects to minimize traffic disruptions and reduce overall costs. The CWMP states that potential traffic impacts and mitigation methods will be looked at in greater detail during the design of the individual CWMP components, including coordinating other needed roadway improvements with the sewer project where such coordination is logical and cost-effective for the Town.

TF2. MPS TR1.1 (No Degradation of Public Safety) states that "*regardless of project traffic generation, DRIs shall not degrade safety for pedestrians, bicyclists, or motor vehicle operators or passengers*." MPS TR1.8 (Sight Distance Requirements) further requires that "*acceptable sight distances shall be met and maintained at all access and/or egress locations for DRIs regardless of project traffic generation*." As the CWMP is implemented, the Town shall maintain safe sight lines and distances for access points onto roadways related to the Plan by appropriately maintaining vegetation and/or installing signage as part of construction traffic management planning.

CONCLUSION

Based on the Findings and determinations above, the Commission hereby approves the DRI application of the Town of Harwich for its CWMP, subject to the following conditions:

Conditions

C1. Pursuant to Section 13(b) of the Commission Act, this DRI decision shall be valid and effective, upon its recording by the Commission at the Barnstable Registry of Deeds, and local permits, licenses and approvals may be issued in accordance with this Decision for a period allowing for full implementation of the Plan, subject to other conditions and requirements of this decision. The Commission shall record this Decision at the Barnstable Registry of Deeds after its appeal period has elapsed, or if an appeal is taken, after it is dismissed, settled or decided in favor of the Commission and the Town.

C2. Failure to comply or remain in compliance with Commission regulations and this Decision, including all conditions stated herein, shall be deemed cause to revoke or require modification to this Decision, after notice to the Town and opportunity to be heard.

C3. The Town shall obtain all necessary federal, state, and local permits, licenses and approvals for the Plan. Obtaining all required local permits, licenses and approvals for the Plan and components thereof shall confirm the Plan's consistency with municipal development by-laws in effect, as the Plan is implemented. The Town shall provide the Commission copies of such permits, licenses and approvals when received.

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C4. Except as may be modified pursuant to the terms and conditions herein, the Plan shall be constructed and implemented in accordance with the findings and conditions in this Decision, the Final Comprehensive Wastewater Management Plan/Single Environmental Impact Report, dated March 29, 2016, prepared by CDM Smith, and the Secretary's Certificate of Adequacy on the SEIR.

C5. Prior to and as a condition to proceeding with the commencement of phases 2 through 8 of the CWMP, the town shall request and obtain a Certificate of Compliance (COC) from the Commission for each phase, which Certificate will, as and when issued, authorize commencement of such phase and evidence the phase's compliance with this Decision. At its discretion, the Commission may issue Certificates for portions, constituent projects or subphases of the particular phases of the CWMP. As part of the Town's request for a COC, the Town shall submit the plans and information supporting and associated with the work to which the request relates, including but not limited to site and layout, stormwater, O&M, architectural, construction traffic management, landscape/ revegetation, lighting, erosion control and construction detail/ specification plans, for review and approval by Commission staff to determine their consistency with the Decision, the RPP and other applicable Commission regulations or technical bulletins. The Commission may undertake site visits after reasonable notice to and coordination with the Town as part of its review.

C5A. Commission staff's review associated with the issuance of Certificates of Compliance will consider potential impacts associated with CWMP implementation on resources protected under the Commission Act and the Regional Policy Plan. Consideration of potential resource area impacts include but are not limited to the following:

- The Town shall utilize existing disturbed areas within road rights-of-way and utility easements to the greatest extent feasible for the sewer line installation. As the Town moves forward with more detailed plans and permitting for sewer construction, the Town shall minimize fragmentation of general plant and wildlife habitat at locations disturbed due to development of new infrastructure. Where construction associated with the CWMP is proposed within mapped rare species habitat, the Town shall submit the proposal to the Natural Heritage and Endangered Species Program (NHESP), with a copy to the Commission, and provide the Commission return correspondence received from NHESP. If the NHESP determines that the project will result in a take of state listed species and requires preparation of a Conservation and Management permit, the Town shall submit the project plans and proposed mitigation plan to NHESP, with a copy to the Commission.
- Alterations to the Cold Brook retired cranberry bog/wetland system should be designed to balance nitrogen management goals with other natural resource goals, such as habitat restoration, including measures to minimize or avoid adverse impacts to natural resources interests associated with Cold Brook .
- The Town shall submit to the Cape Cod Commission for review and approval plans for any proposed above-ground structures associated with sewer construction, such as lift stations. These plans shall also be accompanied by a map of any identified historic resources or resource areas, as applicable. Any above ground structures shall be designed consistent with Commission design standards in the RPP and architectural design technical bulletin, and acknowledge design features in the surrounding neighborhood.
- The Town shall retain existing vegetation and provide vegetated buffers to limit visual impacts from new above-ground structures, including but not limited to lift stations, as appropriate to the area in which construction is proposed.

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- The SEIR defines the process where Massachusetts Historical Commission (MHC) will review each phase of development as it is designed so that impacts to historic/archaeological resources can be considered at a more detailed level. If deemed necessary by MHC, the Town shall conduct an archaeological survey during the preliminary design phase of the Plan phase where ground disturbance is proposed, with a permit from the office of the State Archaeologist/Massachusetts Historical Commission (MHC), at any sites where MHC staff identifies archaeological sensitivity. If any archaeological sites are identified during survey work, the Applicant shall meet with MHC staff and Commission staff to demonstrate how the proposed development has been configured to maintain and/or enhance such resources. In addition, any archaeological sites determined eligible for listing on the National Register of Historic Places shall be preserved and protected from disturbance through a conservation restriction or similar means to be approved by Commission staff and MHC staff.

C6. If the Town is required to file an NPC under MEPA for the Plan, it shall submit a copy of the filing to the Commission for review and comment. Upon review, the Commission may require the Town to seek a modification of this Decision in accordance with the *Modification* section of the Commission's DRI Enabling Regulations in effect at the time the modification is sought. Whether or not the Commission determines that a DRI modification is necessary, NPCs shall be incorporated into the CWMP's AMP. The Commission may also require that the Town seek a modification to this Decision for significant changes to the proposed scope, nature, purpose or implementation of the Plan not otherwise anticipated or accommodated under the AMP, and not contemplated in the CWMP.

C7. The Town shall implement and undertake the CWMP in accordance with an Adaptive Management Plan (AMP) process, for which a preliminary scope is outlined in the SEIR, and consistent with the Section 208 Update as more specifically set out in Finding GF9 herein.

C7A. A preliminary scope of the Adaptive Management Plan *(Exhibit A*) is attached to and incorporated into this Decision by reference. A draft AMP shall be provided for Commission staff review and approval prior to the commencement of phase 2 of the CWMP. Thereafter, the AMP shall be reviewed and updated as necessary when the Town seeks Certificates of Compliance from the Commission for subsequent phases of the CWMP. The Town shall provide the Commission annual written reports on the status, progress, funding and implementation of the CWMP under the AMP process, and in addition, at the Commission's request and after coordination with the Town, the Town may meet with the Commission's Committee on Planning and Regulation in a public meeting to provide updates on the CWMP under the AMP process, including reports on status, progress funding and implementation.

C7B. The validity of this Decision, and rights granted hereunder, is conditioned on the Town maintaining Section 208 Update certification for the CWMP. The Town is also required to maintain continued Section 208 Update certification for the CWMP for State Revolving Fund (SRF) eligibility The Town shall obtain Section 208 Update re-certification for the CWMP prior to and as a condition to implementing Phase 4. Thereafter, the Commission shall determine periods to obtain Section 208 Update re-certification, as a condition to proceeding with subsequent phases of the CWMP.

C7C. As the CWMP is implemented and progresses, the Commission will coordinate with the Town a process to align the Certificate of Compliance, AMP update and Section 208 Update certification processes referenced herein.

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HARWICH CWMP DRI DECISION

Executed this _____ day of _____ 2016

_____
Signature

_____
Print Name and Title

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss _____ ___, 2016

Before me, the undersigned notary public, personally appeared_____,

in his/her capacity as _____ of the Cape Cod Commission, whose name is signed on the preceding document, and such person acknowledged to me that he/she signed such document voluntarily for its stated purpose. The identity of such person was proved to me through satisfactory evidence of identification, which was [ ] photographic identification with signature issued by a federal or state governmental agency, [ ] oath or affirmation of a credible witness, or [ ] personal knowledge of the undersigned.

_____
Notary Public
My Commission Expires:

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Exhibit A- Harwich CWMP DRI Decision
_____,___ 2016
Adaptive Management Plan Scope- Proposed Components

The SEIR summarizes the following as the principal components of the AMP to be developed under the framework in the SEIR:

1. Technical Review Committee: A technical review committee (TRC) will be established to review the progress of the CWMP Recommended Program. This task could be performed by the existing Wastewater Implementation Committee. The TRC shall include CCC and DEP staff.
2. Water Quality Monitoring: Now that the MEP water quality monitoring program is complete, the Town plans to continue monitoring water quality at the sentinel and check stations.
3. Habitat Monitoring: The Town anticipates that MassDEP will continue eelgrass mapping, to assess the results of the Recommended Program's implementation.
4. Wastewater Treatment Plant/Groundwater Discharge Reporting: The Towns of Harwich and Chatham will be required through their groundwater discharge permits from MassDEP to develop regular compliance reports, which shall be shared concurrently with the Commission.
5. CWMP Implementation and Funding Status: The TRC will be provided an annual implementation progress report following each calendar year.
6. Community Growth Status: Each year, a written update will be prepared and submitted to the TRC describing community growth both in the community at-large and within the sewered areas.
7. CWMP Recommended Program Modifications: Based on the information provided, the TRC may recommend updates or modifications to the CWMP Recommended Program.

The AMP shall also address the matters discussed in Finding GF9 of the Decision related to Section 208 Plan Update consistency.

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