Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
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Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

January 3, 2022

Mr. Daniel T. Barrett
Town of Bourne
Department of Integrated Solid Waste Management
24 Perry Avenue
Buzzards Bay, Massachusetts 02532

&

Town of Bourne Board of Health
24 Perry Avenue – Room 201
Buzzards Bay, Massachusetts 02532

RE: **REPORT ON SUITABILITY FOR SITE ASSIGNMENT**
Application for: BWP SW38
Modification of an Existing Site Assignment for Landfill Expansion
Application No. 21-SW38-0001-APP
Authorization No. SW38-0000007

AT: Town of Bourne Integrated Solid Waste Management Facility
201 MacArthur Boulevard
Bourne, Massachusetts 02532
Facility # 39101
Regulated Object # 172356

Dear Mr. Barrett and Board of Health Members:

The Massachusetts Department of Environmental Protection, Bureau of Air and Waste, Solid Waste Management Section ("MassDEP" or "Department"), has completed its Technical Review of the permit application ("Application") listed above and determined that the Application is Technically Complete.

The Application was submitted on behalf of Town of Bourne (the "Town") Department of Integrated Solid Waste Management (the "Applicant") by SITEC Environmental, Inc. of Marshfield, Massachusetts, and received by MassDEP on March 29, 2021. MassDEP is reviewing the Application under the provisions of 310 CMR 16.00, *Site Assignment Regulations for Solid Waste Facilities*. MassDEP has assigned Report Number 036-001-C to this permit application.

The Applicant proposes to modify the existing Site Assignment for the 99-acre solid waste management facility located on two parcels of land located at 201 MacArthur Boulevard, Bourne, Massachusetts (the "Site"). There are two areas under consideration for site assignment modifications. The first area under consideration is a 25-acre parcel that is currently site-assigned for solid waste handling and modifications would allow a portion of the parcel to be used for a horizontal landfill expansion. The proposed horizontal landfill expansion, designated as Phase 7 and Phase 8, consists of approximately 17.34 acres of new landfill cells. The second area under consideration for site assignment modifications is a 74-acre parcel that is currently site-assigned as a landfill. Proposed modifications consist of a vertical landfill expansion, designated as Phase 9, over the existing landfill areas. Phase 9 would increase the maximum height of the landfill from elevation 185-ft mean sea level ("MSL") to elevation 225-ft MSL. The proposed modifications include Phase 7, Phase 8, and Phase 9. Phase 7 and Phase 8 will be developed on the 25-acre parcel and the Phase 9 vertical expansion will be built on the 74-acres existing landfill parcel.

The permit application consists of the document entitled:

BWP SW 38 – Application for Site Suitability
For a Major Modification of an Existing Site Assignment
Bourne Integrated Solid Waste
Management Facility
Bourne, Massachusetts
March 29, 2021

The Application was submitted electronically via the Massachusetts Executive Office of Energy and Environmental Affairs ("EEA") ePlace Portal at https://permitting.state.ma.us/CitizenAccess/ on March 29, 2021.

The Application and MassDEP's Report on Suitability may be reviewed online at: https://eeaonline.eea.state.ma.us/EEA/PublicApp/ using the "Site Name" Bourne Landfill and the "Search" tab. Under "Record Type", select the "Application" file with the March 29, 2021 "Application Date".

On May 12, 2021, MassDEP determined the Application was Administratively Complete. On May 25, 2021, MassDEP issued a letter of Request for Information ("RFI") to clarify the Application. On August 3, 2021, the Applicant submitted a Response to the RFI.

Pursuant to the provisions M.G.L. c.111, §§150A & 150A1/2 and 310 CMR 16.00, Public Notice was required to be given concerning the proposed solid waste site assignment, in order to initiate

and provide a twenty-one (21) day public comment period for any concerned or interested persons regarding the proposed site assignment modification. According to the provisions of 310 CMR 16.00, the public comment period would commence on the date by which "proof" of public notice was submitted to MassDEP. On September 24, 2021, MassDEP received documentation that public notice was published in the Bourne Courier on July 14, 2021, and the Bourne Enterprise on July 9, 2021, documentation that public notice was sent via Certified Mail to abutters to the 25-acre and 74-acre parcels, and documentation that public notice was published in Massachusetts Environmental Policy Act ("MEPA") Monitor on July 9, 2021. On October 12, 2021, MassDEP received documentation that public notice was sent via Certified Mail to the parties listed at 310 CMR 16.08(2). Accordingly, the public comment period commenced on October 13, 2021, and ended on November 3, 2021.

MassDEP accepted public comments for a period of twenty-one days via US Mail, email, and the EEA ePLACE Public Access Portal. MassDEP received correspondence from interested parties including organizations and private citizens. MassDEP reviewed these comments and provided copies of all comment correspondence received during the public comment period to the Applicant via email. On November 10, 2021, MassDEP issued correspondence to the Applicant requesting a formal response to the public comments. On November 22, 2021, the Applicant submitted responses to the public comments.

At the time the project completed MEPA review in December 2020 and when the Applicant submitted a site suitability application (BWP SW 38) to MassDEP on March 29, 2021, there was no mapped Environmental Justice ("EJ") Population within 1 mile of the proposed site assignment modifications or within the Town of Bourne. In accordance with Massachusetts Executive Office of Energy and Environmental Affairs EJ Policy (https://www.mass.gov/doc/environmental-justice-policy6242021-update/download), there are additional requirements (e.g., enhanced public participation, enhanced analysis) during MEPA review for a project that triggers a MEPA threshold and is located within one mile of an EJ Population. However, since there was no EJ Population within one mile when the Bourne Landfill expansion project underwent MEPA review, enhanced public participation and/or enhanced analysis did not apply.

However, in June 2021, EJ maps were updated using the 2019 American Community Survey data and the new EJ population definitions in the EEA EJ policy that MassDEP is required to implement. Based on the update, there is a mapped EJ population with the criteria *Income* immediately abutting the Site. The mapped area is Joint Base Cape Cod and is identified as Block Group 1, Census Tract 141, Barnstable County, Massachusetts. The EJ block group has a total area of roughly 17 square miles and a population of 949. Given the nature of the Joint Base Cape Cod block group (i.e., relatively large land area of mostly vacant/undeveloped land and a relatively low residential population), MassDEP was not able to identify any residents or community leaders in the mapped area within one mile of the Site. The closest residents that MassDEP was able to identify within the Joint Base Cape Cod block group are located over 3 miles south of the Site. In addition, MassDEP identified three other EJ Populations located approximately 1.6 miles west of the Site, 3 miles north/northeast of the Site, and 2 miles southwest of the Site. Although MassDEP could not identify any residents of the EJ population within 1 mile of the proposed site assignment modifications and despite that there is no regulatory/statutory requirement to do so, to meet the

intent EEA's EJ Policy, MassDEP encouraged the Town to consider performing the enhanced public outreach that would have been required had the EJ population definition been available at the time the project completed MEPA review (Record No. 36).

In accordance with EEA's EJ Policy, MassDEP has obligations as an agency to establish a public involvement plan ("PIP") that focuses agency resources on outreach activities that enhance public participation opportunities for agency activities that potentially affect EJ populations. Since the Facility directly abuts an EJ Population and there are three additional mapped EJ Populations within the Town of Bourne, MassDEP prepared a PIP and conducted outreach activities to encourage EJ community engagement (Record No. 39).

Pursuant to 310 CMR 16.00, *Site Assignment Regulations for Solid Waste Facilities*, the MassDEP has determined that the location is suitable for the proposed use. Attached is the "Report on Site Suitability", Report #036-001-C prepared by MassDEP. The Board of Health should proceed with a public hearing on the application pursuant to Part II of 310 CMR 16.00. Please refer to 310 CMR 16.20(7) *Initiation of Hearings* regarding public notice requirements and public hearing timeframes.

Should there be any questions, please contact MassDEP at the letterhead address or telephone at (508) 946-2847 or email me at mark.dakers@mass.gov or Alison Cochrane at (508) 946-2778 or email at alison.cochrane@mass.gov or Elza Bystrom at (508) 946-2856 or email at elza.bystrom@mass.gov. Any correspondence regarding this matter should reference DEP FILE # 036-001-C.

Very truly yours,

Mark Dakers, Chief
Bureau of Air and Waste
Solid Waste Management Section

Enclosure: 1

Town of Bourne Department of Integrated Solid Waste Management
CERTIFIED MAIL NO. 7021 0950 0001 0418 0866
RETURN RECEIPT REQUESTED

Bourne Board of Health
CERTIFIED MAIL NO. 7021 0950 0001 0418 0859
RETURN RECEIPT REQUESTED

cc: Massachusetts Department of Public Health
Bureau of Environmental Health Services
250 Washington Street, 7th Floor
Boston, MA 02108
Email: Jan.Sullivan@mass.gov
Email: steven.hughes@mass.gov
Email: bharathi.patimalla-dipali@mass.gov

ec: Town of Bourne Board of Health
tguarino@townofbourne.com
samaral@townofbourne.com

Cape Cod Commission
eperry@capecodcommission.org

SITEC Environmental, Inc.
Raymond Quinn, P.E. – rquinn@sitecenv.com

DEP-Boston
ATTN: G. Cooper
J. Fischer

DEP-SERO
ATTN: S. Pickering
M. Dakers

Massachusetts Department of Environmental Protection
One Winter Street, Boston MA 02108 • Phone: 617-292-5751

Communication for Non-English Speaking Parties - 310 CMR 1.03(5)(a)

1 English:
This document is important and should be translated immediately. If you need this document translated, please contact MassDEP's Diversity Director at the telephone numbers listed below.

2 Español (Spanish):
Este documento es importante y debe ser traducido inmediatamente. Si necesita este documento traducido, comuníquese con el Director de Diversidad de MassDEP a los números de teléfono que aparecen más abajo.

3 Português (Portuguese):
Este documento é importante e deve ser traduzido imediatamente. Se você precisa deste documento traduzido, entre em contato com Diretor de Diversidade da MassDEP para os números de telefone listados abaixo.

4(a) 中國（傳統）(Chinese (Traditional):
本文件非常重要，應立即翻譯。如果您需要翻譯這份文件，請用下面列出的電話號碼與 MassDEP 的多元化總監聯繫。

4(b) 中国（简体中文）(Chinese (Simplified):
本文件非常重要，应立即翻译。如果您需要翻译这份文件，请用下面列出的电话号码与 MassDEP 的多元化总监联系。

5 Ayisyen (franse kreyòl) (Haitian) (French Creole):
Dokiman sa-a se yon bagay enpòtan epi yo ta dwe tradui imedyatman. Si ou bezwen dokiman sa a tradui, tanpri kontakte Divèsite Direktè MassDEP a nan nimewo telefòn ki nan lis pi ba a.

6 Việt (Vietnamese):
Tài liệu này rất quan trọng và cần được dịch ngay lập tức. Nếu bạn cần dịch tài liệu này, xin vui lòng liên hệ với Giám đốc Đa dạng của MassDEP theo các số điện thoại được liệt kê dưới đây.

7 ប្រទេសកម្ពុជា (Kmer (Cambodian):
ឯកសារនេះគឺមានសារៈសំខាន់និងត្រូវត្រូវបានបកប្រែភ្លាម។ ប្រសិនបើអ្នកត្រូវបានបកប្រែ
ឯកសារនេះសូមទំនាក់ទំនងឆ្មាំគង់នាយក MassDEP នៅលេខទូរស័ព្ទដែលបានរាយខាងក្រោម។

8 Kriolu Kabuverdianu (Cape Verdean):
Es documento é importante e deve ser traduzido imidiatamente. Se bo precisa des documento traduzido, por favor contacta Director de Diversidade na MassDEP's pa es numero indicode li d'boche.

9 Русский язык (Russian):
Это важный документ и он должен быть безотлагательно переведен. Если вам нужен перевод данного документа, пожалуйста, свяжитесь с директором по разнообразию компании MassDEP по телефону указанному ниже

Contact Michelle Waters-Ekanem, Diversity Director/Civil Rights: 617-292-5751 TTY# MassRelay Service 1-800-439-2370. http://www.mass.gov/eea/agencies/massdep/service/justice/
(Version 12.19.19)

REPORT ON SUITABILITY

REPORT #036-001-C

Prepared by: Massachusetts Department of Environmental Protection
Bureau of Air and Waste
Solid Waste Management Section
Southeast Regional Office
Lakeville, Massachusetts

January 3, 2022

REPORT ON SUITABILITY

APPLICANT

Town of Bourne
Department of Integrated Solid Waste Management
24 Perry Avenue
Bourne, Massachusetts 02532

Application Prepared by:
SITEC Environmental, Inc.
769 Plain Street
Marshfield, Massachusetts 02050

LOCATION OF FACILITY

201 MacArthur Boulevard
Bourne, Massachusetts 02532

TYPE OF PROPOSED FACILITY

Expansion of Solid Waste Landfill Facility
Determination of Site Suitability for a Major Modification of an Existing Site Assignment for a Solid Waste Landfill to allow an approximate 17.34-acre horizontal expansion and a 40-foot vertical expansion of an approximate 28.08-acre area from 185-feet above mean sea level to 225 feet above mean sea level.

The Massachusetts Department of Environmental Protection, Bureau of Air and Waste, Solid Waste Management Section ("MassDEP"), has prepared this report on the above referenced application ("Application") pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Sections 150A and 150A½ and 310 CMR 16.00, *Site Assignment Regulations for Solid Waste Facilities*.

STATEMENT

MassDEP has determined that the Application, as submitted, supplemented, and amended by information referenced in this report, contains sufficient data to allow the MassDEP to determine whether the site meets the criteria set forth in 310 CMR 16.00.

I. INTRODUCTION

The Town of Bourne (the "Town") Department of Integrated Solid Waste Management (the "Applicant" or "ISWM") proposes to modify the existing Site Assignment for the 99-acre solid waste management facility on two parcels of land located at 201 MacArthur Boulevard, Bourne, Massachusetts (the "Facility").

Under consideration for site assignment modifications at the Facility are two separate parcels: 74-acre parcel and a 25-acre parcel. The first area under consideration is a proposed 17.34-acre horizontal expansion to the active and existing Bourne Landfill onto a 25-acre parcel that is currently site-assigned for solid waste handling. The 25-acre parcel is located immediately south of the Bourne Landfill which is located on a 74-acre site-assigned parcel of land. The modified site assignment would allow a landfill facility on approximately 17.34 acres of the 25-acre parcel. The proposed horizontal landfill expansion, designated as Phase 7 and Phase 8, consists of approximately of 17.34 acres of new landfill cells. The Applicant submitted a Schematic Site Buildout Plan (Record No. 56) and a Proposed Site Assignment Modifications plan (Record No. 57) that depicts the limit of site assignment modifications for Phase 7 and Phase 8. Although the proposed area of waste deposition is not shown on the plans, all areas of waste deposition are limited to the limit of site assignment modifications for Phase 7 and Phase 8 as depicted on Record 56 and Record 57.

The second area under consideration for site assignment modifications is a proposed vertical expansion which would increase the maximum permitted height of the Bourne Landfill by 40 feet from elevation 185-ft MSL to elevation 225-ft MSL. The proposed vertical landfill expansion, designated as Phase 9, footprint is approximately 28.08 acres (Record No. 59) and lies entirely within the existing landfill areas located on the 74-acre site-assigned parcel of land. The Applicant submitted a Schematic Site Buildout Plan (Record No. 56) that depicts the "Future Phase 9 Landfill Area" or the approximate area of waste deposition for Phase 9.

Phase 7, Phase 8, and Phase 9 would provide approximately 5,175,000 cubic yards of disposal capacity and would extend the life of the landfill until approximately year 2040.

Pursuant to the provisions of M.G.L. c. 30, §§ 61-621 and 310 CMR 11.00, the Applicant submitted an expanded Notice of Project Changes to the MEPA Office of the Executive Office of Energy and Environmental Affairs ("MEPA") in February 2020 to provide an updated site development plan for the Landfill and described the development of Phase 7, Phase 8 and Phase 9 of the landfill expansion (Record No. 44). During the MEPA process, the Applicant submitted a Single Supplemental Environmental Impact Report ("SSEIR") on November 13, 2020 (Record No. 46). On December 30, 2020, the Secretary issued a Certificate determining that the SSEIR adequately and properly complies with MEPA and its implementing regulations (Record No. 7).

During the MEPA review process, MassDEP provided clarification of the site assignment process as it pertains to the Phase 9 vertical expansion. The site assignment regulations at 310 CMR 16.22(2) state, in part, that; "Modifications deemed to be 'Major Modifications' include" ..."vertical expansions beyond the limits of an approved plan". Therefore, MassDEP determined that the Phase 9 vertical expansion constitutes a Major Modification to the Site Assignment. 310

CMR 16.22(2) further provides that "A major modification shall require submittal of a new site assignment application that addresses all criteria affected by the modification, as determined by MassDEP in writing, and shall be reviewed in accordance with the requirements established at 310 CMR 16.08 through 16.20." Within MassDEP's comments on the Expanded Notice of Project Change, MassDEP determined, in writing, that the following criteria should be addressed for Phase 9: 16.40(4)(b) *Traffic and Access to the Site*; 16.40(4)(f) *Potential Air Quality Impacts*; 16.40(4)(g) *Potential for the Creation of Nuisances*; 16.40(4)(h) *Size of facility*; 16.40(4)(i) *Areas Previously Used for Solid Waste Disposal*; 16.40(4)(k) *Consideration of Other Sources of Contamination or Pollution*; and 16.40(5) *Promotion of Integrated Solid Waste Management*. (Record No. 58).

MassDEP previously determined that the site assignment application for the vertical expansion should **not** address the setback criteria at 310 CMR 16.40(3)(a). Regarding Phase 7 and Phase 8, the horizontal expansion constitutes "Expand a Site" and requires a Modification to the Site Assignment pursuant to 310 CMR 16.22(2). MassDEP determined that the application for the Major Modification for Phase 7 and Phase 8 shall address all the site suitability criteria contained within 310 CMR 16.40(3)(a) *Criteria for Landfill Facilities* and 16.40(4) *General Site Suitability Criteria*.

Accordingly, pursuant the requirements of 310 CMR 16.00, *Site Assignment Regulations for Solid Waste Facilities*, an Application for Site Suitability for a Major Modification of an Existing Site Assignment was submitted by SITEC Environmental, Inc. on behalf of the Applicant on March 29, 2021. MassDEP has assigned Report Number 036-001-C to this permit application. (Record No. 1)

The permit application consists of the document entitled:

BWP SW 38
Application for Site Suitability
For a Major Modification of an Existing Site Assignment
Bourne Integrated Solid Waste
Management Facility
Bourne, Massachusetts
March 29, 2021

The Applicant submitted revised plans and figures on April 20, 2021 (Record No. 16) in accordance with the comments MassDEP provided during a verbal discussion on April 16, 2021. In response to MassDEP's Request for Additional Information issued on May 12, 2021 (Record No. 33), supplemental application information was submitted on August 4, 2021 (Records No. 34 & 35) consisting of documents entitled:

Volume 1
Response to Request for Additional Information
Bourne Integrated Solid Waste
Management Facility
Bourne, Massachusetts
&

Volume 2 – Supporting Attachments
Response to Request for Additional Information
Bourne Integrated Solid Waste
Management Facility
Bourne, Massachusetts

Existing Facility Description

The Town of Bourne owns and the Department of Integrated Solid Waste Management operates the existing Bourne Integrated Solid Waste Management Facility located at 201 MacArthur Boulevard (Route 28) in Bourne, Massachusetts (the "Landfill" or the "Facility") on two parcels of land totaling 99 acres. A 74-acre parcel of land, recorded as Parcel ID No. 280-13-0 in the Assessor database of the Town of Bourne, was initially site-assigned by the Bourne of Health in 1972, which allowed landfilling on this parcel. In 1989, the Town developed its residential recycling center and composting area adjacent to the landfill. In 2001, the Town of Bourne acquired a 25-acre parcel to the immediate south of the 74-acre parcel. Based on the Assessor database of Town of Bourne, the 25-acre parcel of land is recorded under a Parcel ID No. 32.0-9-0. On January 28, 2005, the Applicant submitted to MassDEP an application for Site Assignment Major Modification relative to the proposed 25-acre expansion to allow for solid waste handling and processing. On April 19, 2005, MassDEP issued a BWP SW 38 Approval for Site Assignment Major Modification (Transmittal No. W057110) and a Site Suitability Report No. 036-001-B. Subsequently, on June 27, 2005, the Bourne of Health site-assigned the 25-acre parcel for solid waste handling and processing.

Landfill operations within the 74-acre parcel of land conducted to date have been proceeded in the following order: Phase 1, Phase 2, Phase 3, Phase 2A/3A, Phase 4, Phase 5, and Phase 6. Phase 1 is an unlined and capped landfill area located in the northwest corner of the Facility. Phase 2 is an inactive and capped landfill area with a single composite liner. Phase 3, Phase 4, and Phase 5 are inactive double composite lined landfill areas. Phase 6 is an active double composite lined landfill area. The Applicant stated that Phase 6 is the final portion of the horizontal development of the existing Bourne Landfill on the 74-acre parcel and is anticipated to reach its approved final grades in late 2023. The existing Bourne Landfill has a footprint of approximately 56.86 acres (Record No. 59).

The Bourne Landfill is permitted by MassDEP to accept an average of 600 tons per day of waste with a maximum of 700 tons per day, not to exceed 4,900 tons per week, with a maximum annual disposal rate of 219,000 tons of waste per year. Waste approved to be disposed at the Landfill includes municipal solid waste ("MSW"), residual Construction and Demolition ("C&D") material, ash and other non-MSW material. The Bourne Landfill accepts combustion ash from the Covanta waste-to-energy facility located in Rochester, Massachusetts ("SEMASS"), which currently constitutes the majority of the waste material accepted at the Landfill. The Town's contract with SEMASS requires the Bourne Landfill to accept and dispose of combustion ash at a rate of up to 189,000 tons per year. The Town utilizes the remaining 30,000 tons per year to dispose of biodegradable waste (i.e., MSW).

Within the existing 25-acre site-assigned parcel, the Applicant operates a C&D transfer station, a single stream recyclable material transfer station, a residential recycling center (MSW, C&D,

recyclables, organic wastes), an asphalt, brick and concrete ("ABC") stockpile and a brush and yard waste processing and composting operation. Offices and a salt shed are also on the parcel. The overall Facility is permitted to accept up to 825 tons per day including recycling, composting, and a maximum of 700 tons per day of disposal.

Proposed Facility Description

In 2016, the Town acquired approximately twelve acres of undeveloped land, abutting the residential recycling center at the southern boundary of the 99-acre Facility, which would allow a future relocation of the solid waste handling facility from the existing 25-acre site assigned parcel to the newly purchased land. MassDEP has indicated that a new site assignment will be required for solid waste handling operations on the newly acquired 12-acre parcel, which is not part of this Application.

The proposed areas under consideration for site assignment modifications (the "Site") are located within the existing 74-acre and 25-acre site assigned parcels. Within the 25-acre site-assigned parcel, the Applicant is proposing a horizontal landfill expansion, designated as Phase 7 and Phase 8, consists of approximately of 17.34 acres of new landfill cells. Within the 74-acre site assigned parcel, the Applicant is proposing a vertical landfill expansion, designated as Phase 9, over the existing landfill areas. Phase 9 has a footprint of approximately 28.08 acres and would increase the maximum permitted height of the landfill by forty feet from elevation 185-ft MSL to elevation 225-ft MSL. Phase 7, Phase 8, and Phase 9 would provide approximately 5,175,000 cubic yards of disposal capacity and would extend the life of the landfill until approximately year 2040.

The Bourne Landfill is currently permitted to receive an average of 600 tons per day, with a maximum of any given day of 700 tons, a weekly cap of 4,900 tons and a yearly cap of 219,000 tons. The overall Facility tonnage, including recycling, composting, and disposal remains at a maximum materials acceptance rate of 825 tons per day. The Applicant is not proposing any additional tonnage capacity in this Application.

II. STATEMENT OF FACTS AND FINDINGS

In accordance with 310 CMR 16.13(3), MassDEP has based this Report on the Administrative Record as set forth in Section IV Record below. MassDEP reviewed the Application, the comments filed on the Application, and the Applicant's response to those comments, as well as the other correspondence and reports or records included in the Administrative Record. Finally, MassDEP received and relied on facts and information otherwise available to MassDEP such as MassGIS; the expertise of MassDEP; and/or the expertise of other local, state or federal agencies consulted by MassDEP. MassDEP's Findings and Determinations for each criterion are set forth separately below.

A. FACILITY-SPECIFIC SITE SUITABILITY CRITERIA CRITERIA FOR LANDFILL FACILITIES (Restricted Areas) (310 CMR 16.40(3)(a))

Pursuant to 310 CMR 16.22(2), "A major modification shall require submittal of a new site assignment application that addresses all criteria affected by the modification, as determined by MassDEP in writing, and shall be reviewed in accordance with the requirements established at 310 CMR 16.08 through 16.20."

For the vertical expansion, designated as Phase 9, MassDEP previously determined the site assignment application for the vertical expansion should **not** address the setback criteria at 310 CMR 16.40(3)(a).

For the horizontal expansion, designated as Phase 7 and Phase 8, the Applicant has addressed all the setback criteria at 310 CMR 16.40(3)(a) as follows:

1. **Criterion at 310 CMR 16.40(3)(a)(1): Zone II of Existing Public Water Supply:** *No site shall be determined to be suitable or be site assigned as a landfill facility where any area of waste deposition would be within a Zone II area of an existing public water supply well.*

   The Applicant stated that the Bourne Landfill is not within the Zone II of an existing public water supply well (Record No. 1). The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site that shows a delineated Zone II area for a public water supply well located approximately 0.5 miles south of the Site.

   MassDEP has confirmed using MassGIS data that the proposed waste deposition area of Phase 7 and Phase 8 is not within the Zone II area of an existing public water supply well.

   MassDEP's Finding:

   MassDEP has determined that the waste deposition areas proposed in the Application for Phase 7 and Phase 8 will not be located within the Zone II of an existing public water supply well, and therefore, the Site **meets** this criterion.

2. **Criterion at 310 CMR 16.40(3)(a)(2): Interim Wellhead Protection Area of Existing**

Public Water Supply: *No site shall be determined to be suitable or be site assigned as a landfill facility where any area of waste deposition would be within the Interim Wellhead Protection Area (IWPA) of an existing public water supply.*

The Applicant stated that the Bourne Landfill is not within the Interim Wellhead Protection Area ("IWPA") of an existing public water supply (Record No. 1). The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site that shows the proposed waste deposition area is not within the IWPA of an existing public water supply.

MassDEP has confirmed using MassGIS data that the proposed waste deposition area of Phase 7 and Phase 8 is not within the IWPA of an existing public water supply and the nearest IWPA is located approximately 2 miles to the north/northwest.

MassDEP's Finding:

MassDEP has determined that the waste deposition areas proposed in the Application for Phase 7 and Phase 8 will not be located within the IWPA of an existing public water supply, and therefore, the Site **meets** this criterion.

3. **Criterion at 310 CMR 16.40(3)(a)(3): Zone II or Interim Wellhead Protection Area of a Proposed Drinking Water Source Area:** *No site shall be determined to be suitable or be site assigned as a landfill facility where any area of waste deposition would be within a Zone II or the Interim Wellhead Protection Area (IWPA) of a proposed drinking water source area.*

The Applicant stated that the Bourne Landfill is not within a Zone II or the Interim Wellhead Protection Area ("IWPA") of a proposed drinking water source area. (Record No. 1)

In addition, the Applicant submitted a letter from the Town of Bourne Board of Health dated June 6, 2020 (Record No. 8) acknowledging Section 5.3 of the local Health Regulations that prohibits the installation of any public or private water supply wells downgradient of the Site. Pursuant to the Board of Health regulation, the downgradient area shall be delineated by the particle tracking maps created by the United States Geological Survey ("USGS"). Additionally, the letter stated that all areas downgradient of the landfill are connected to the town's public water system.

MassDEP's regulations at 310 CMR 16.02 define a "Proposed Drinking Water Source Area" as the preliminary Zone II or the preliminary IWPA for a proposed water supply well that has received a site exam approval by the Department and is actively pursuing source approval as a public water supply.

MassDEP reviewed its files and confirmed that there are no applications pending for a proposed drinking water source area within a three-mile radius of the proposed waste deposition areas for Phase 7 and Phase 8 (Record No. 48).

MassDEP's Finding:

MassDEP has determined that the waste deposition areas proposed in the Application for Phase 7 and Phase 8 will not be located within a Zone II or IWPA of a proposed drinking water source area, and therefore, the Site **meets** this criterion.

4. **Criterion at 310 CMR 16.40(3)(a)(4): Within 15,000 Feet Upgradient of Existing Public Water Source Well or Proposed Drinking Water Source Area for Which a Zone II Has Not Been Calculated:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition would be within 15,000 feet upgradient of the existing public water source well or proposed drinking water source area for which a Zone II has not been calculated. The proponent may conduct a preliminary Zone II study, approved of by the Department, to determine if the facility would be beyond the Zone II of the public water supply well or proposed drinking water source area in question.*

The Applicant submitted a Groundwater Contour Plan (Record No. 26) developed using historical groundwater data indicating that groundwater flow direction is to the west/northwest towards Buzzards Bay. The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site and indicated that there are no public water supply wells within the mapped area. The Applicant attached a letter from the Bourne Water District dated May 26, 2020 (Record No. 8) stating that the "Bourne Water District does not have a wellfield downgradient from the Bourne Sanitary Landfill." Additionally, the Applicant stated that the Facility is not located in a proposed drinking water source area since the Town of Bourne Board of Health has issued local Health Regulations that prohibits the installation of any public or private water supply wells downgradient of the Facility. The Applicant stated that all previously identified downgradient private water supply wells have been replaced with connections to the public water supply system. (Records No. 1 & 8)

Based on MassGIS data, MassDEP has confirmed that the nearest public water source (ID #4036000-08G) is located approximately 0.5 miles south and cross-gradient (not downgradient) to the proposed waste deposition areas of Phase 7 and Phase 8. MassDEP determined that the proposed waste deposition areas are not located upgradient of any existing public water supply well; there are no existing public water supply wells located west/northwest of the Landfill between the Landfill and Buzzards Bay. Further, MassDEP has confirmed that no applications are pending for proposed drinking water sources within a three-mile radius of the proposed waste deposition areas (Record No. 48).

MassDEP's Finding:

MassDEP has determined that the waste deposition area proposed in the Application for Phase 7 and Phase 8 will not be located within 15,000 feet upgradient of the existing public water source well, and therefore, the Site **meets** this criterion.

5. **Criterion at 310 CMR 16.40(3)(a)(5): Danger To An Existing Or Proposed Drinking Water Source Area:** *No site shall be determined to be suitable or be assigned as a landfill facility where a discharge from any area of waste deposition would pose a danger to an existing or proposed drinking water source area.*

The Applicant stated that the nearest public drinking water supply is approximately 0.83 miles south and not downgradient to the proposed waste deposition area. The Applicant submitted a letter from the Bourne Water District dated May 26, 2020 (Record No. 8) stating that the "Bourne Water District does not have a wellfield downgradient from the Bourne Sanitary Landfill." In addition, the Applicant submitted a letter from the Town of Bourne Board of Health dated June 6, 2020 (Record No. 8) acknowledging Section 5.3 of the local Health Regulations that prohibits the installation of any public or private water supply wells downgradient of the Site. Pursuant to the regulation, the downgradient area shall be delineated by the particle tracking maps created by USGS. Additionally, the letter stated that all areas downgradient of the landfill are connected to the town's public water system. (Records No. 1 & 8).

The Applicant stated that the groundwater protection system for proposed Phase 7 and Phase 8 will be a double composite liner with interstitial leak detection that will meet MassDEP's requirements. The Applicant further stated that the groundwater protection system will intercept and collect leachate that passes through the waste, protecting groundwater quality within the area of the Landfill (Record No. 1).

Based on MassGIS data, MassDEP has confirmed that the nearest public water source (ID #4036000-08G) is approximately 0.5 miles from the proposed waste deposition area and that there is no IWPA within the one-half mile radius from the proposed waste deposition area. MassDEP determined that the Site is not located upgradient of any existing public water supply well; there are no existing public water supply wells located west/northwest of the landfill between the landfill and Buzzards Bay. Further, MassDEP has confirmed that there are no applications pending for a proposed drinking water source area within a three-mile radius of the proposed waste deposition areas (Record No. 48).

Based on the information provided in the Application and MassDEP's expertise and knowledge, MassDEP has concluded that the groundwater protection system proposed in the Application for Phase 7 and Phase 8 complies with current regulatory requirements for such systems and will contain features and elements designed to prevent the discharge of leachate into groundwater. MassDEP notes that the requirement for a double composite liner system with leak detection in 310 CMR 19.110 is stricter than the federal requirement for solid waste landfills and essentially equivalent to the federal requirements for a hazardous waste landfill. MassDEP also notes that the proposed groundwater protection system for Phase 7 and Phase 8 must be approved through the MassDEP solid waste permitting process, which will involve an in-depth evaluation by MassDEP to ensure compliance with MassDEP regulations and guidance documents.

MassDEP's Finding:

Based on MassGIS mapping and MassDEP's analysis, MassDEP has determined that the proposed waste deposition area for Phase 7 and Phase 8 would not pose a danger to an existing or proposed drinking water source area, and therefore, the Site **meets** this criterion.

6. **Criterion at 310 CMR 16.40(3)(a)(6): Sole Source Aquifer:** *No site shall be determined to*

be suitable or be assigned as a landfill facility where any area of waste deposition would be over the recharge area of a Sole Source Aquifer, unless all of the following criteria are met:

a. *there are no existing public water supplies or proposed drinking water source areas downgradient of the site;*
b. *there are no existing or potential private water supplies downgradient of the site; however, the applicant may have the option of providing an alternative public water supply to replace all the existing or potential downgradient private groundwater supplies; and*
c. *there exists a sufficient existing public water supply or proposed drinking water source area to meet the municipality's projected needs.*

MassDEP's regulations at 310 CMR 16.02 define a "Sole Source Aquifer" as "an aquifer so designated by the U.S. Environmental Protection Agency, or by the Department under the authority of a state program as may be established, that supplies 50% or more of the drinking water for the aquifer service area, and the volume of water which could be supplied by alternative sources is insufficient to replace the petitioned aquifer should it become contaminated." The Site is located over the Cape Cod Sole Source Aquifer, as designated by the Environmental Protection Agency ("EPA"). Accordingly, the Site must meet each criterion stated above.

For criteria a. and b, the Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site and indicated that there are no public or private water supply wells within the mapped area. Based on MassGIS data, the nearest public water source (ID #4036000-08G) is a Zone II area located approximately 0.5 miles south and cross-gradient (not downgradient) from the proposed waste deposition areas of Phase 7 and Phase 8. MassDEP determined that the Site is not located upgradient of any existing public water supply well; there are no existing public water supply wells located west/northwest of the landfill between the landfill and Buzzards Bay. Further, MassDEP has confirmed that there are no applications pending for proposed drinking water source areas within a three-mile radius of the proposed Site. (Record No. 48).

MassDEP considered the Comprehensive Site Assessment Permit application (Record No. 63) and the complete Cumulative Impact Assessment ("CIA") (Record No. 62) and final Comprehensive Site Assessment ("CSA") approval, dated June 5, 2017, for the Town of Bourne – Department of Integrated Solid Waste Management (Record No. 49). During the assessment process, the Applicant conducted private well surveys to identify all private wells in the vicinity of the Landfill, including downgradient, upgradient and cross-gradient. All private wells that were identified in the landfill plume, adjacent to the plume, and/or in close proximity to the landfill were connected to the public water supply system. The land upgradient of Phase 7 and Phase 8 is vacant land owned by Joint Base Cape Cod and MassDEP determined that there are no residents located within 1,000 feet upgradient of Phase 7 and Phase 8. The land cross-gradient of Phase 7 and Phase 8 is vacant land to the south and the existing Landfill to the north and MassDEP determined that there are no residents within 1,000 feet cross-gradient of Phase 7 and Phase 8.

The Applicant submitted a letter from the Bourne Water District dated May 26, 2020 (Record

No. 8) stating that the "Bourne Water District does not have a wellfield downgradient from the Bourne Sanitary Landfill."

In addition, the Applicant submitted a letter from the Town of Bourne Board of Health dated June 6, 2020 (Record No. 8) acknowledging Section 5.3 of the local Health Regulations that prohibits the installation of any public or private water supply wells downgradient of the Site and that drinking water from the Bourne Water District distribution system is available in all areas hydraulically downgradient of the landfill. Pursuant to the regulation, the downgradient area shall be delineated by the particle tracking maps created by USGS. Additionally, the letter stated that all areas downgradient of the landfill are connected to the Town's public water system. (Records No. 1 & 8).

For criteria c., the Applicant must demonstrate that there is sufficient existing public water supply or proposed drinking water source area to meet the municipality's projected needs. The Applicant stated that the water supply for the Site is provided by the Bourne Water District ("BWD"), which is supplied by ten different sources. Seven sources are BWD gravel packed well sites and three sources are gravel packed well sites that are part of the Upper Cape Regional Water Supply Cooperative. According to the Applicant, four of BWD well sites are in the Monument Beach area of the Town Forest and two wells are in Cataumet area. The Bourne Water Supply includes the public water source well 4036000-08G, which is located on the Joint Base of Cape Cod ("JBCC"). In addition, the Town was connected by a metering station at Connery Avenue to the other wells of the Upper Cape Regional Water Supply Cooperative (the "Cooperative") which have a total permitted yield of three million gallons per day (MGD). The Applicant states that the Cooperative allows BWD to obtain water along with other cooperative members (Sandwich Water District, Falmouth, Mashpee and JBCC) to withdraw any needed supplemental water from the legislatively established Upper Cape Water Supply Reserve, which is currently permitted at 3 MGD with three reserve wells capable of producing 6 MGD. The Applicant states that the Cooperative has the ability of establishing additional water sources within the Reserve. (Record No. 1)

The Applicant attached a letter dated March 6, 2017 from MassDEP's Division of Watershed Management of Bureau of Water Resources to Mr. Dan Mahoney, Chairman for the Upper Cape Water Supply Cooperative (Record No. 8). The MassDEP's letter was in support of the Permit Renewal Decision Water Management Permit #9P2-4-22-261.03 for the Cooperative to withdraw water from the Cape Cod Basin. The permit extension sets the expiration date for all permits in the Cape Cod Basin as November 30, 2030.

MassDEP's Finding:

MassDEP has determined that the Site is located on the Cape Cod Sole Source Aquifer, as designated by EPA. The Applicant presented findings that there are no existing public water supplies or proposed drinking water source areas downgradient of the site. The Applicant presented findings that there are no existing or potential private water supplies downgradient of the site. MassDEP reviewed its files and confirmed that no applications are pending for proposed drinking water sources within a three-mile radius of the proposed waste deposition area of Phase 7 and Phase 8. MassDEP has determined that the Applicant demonstrated there exists a sufficient existing public water supply or

proposed drinking water source area to meet the municipality's projected needs. Therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(6).

7. **Criterion at 310 CMR 16.40(3)(a)(7): Zone of Contribution or Recharge Area:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition is within the zone of contribution of an existing public water supply or proposed drinking water source area, or the recharge area of a surface drinking water supply, pursuant to a municipal ordinance or `by-law enacted in accordance with M.G.L. c. 40A, §9.*

The Applicant stated that all existing and proposed areas of waste deposition at the Bourne Landfill are not within the zone of contribution of an existing public water supply or proposed drinking water source area, or the recharge area of a surface drinking water supply (Record No. 1). The Applicant stated that the Town has not enacted any municipal bylaw or ordinance to establish a zone of contribution of an existing public water supply or proposed drinking water source area, or the recharge area of a surface drinking water supply, within the proposed waste deposition area for Phase 7 and Phase 8 (Record No. 60). The Applicant submitted a Water Resources Districts and Zone II Map (Record No. 61) depicting that the proposed Site is not within an area designated as a Bourne Water Resource District, a Buzzards Bay Water Resource District, or a North Sagamore Water Resource District. Additionally, the Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site indicating that the proposed Site is not located within any of the following areas: a Zone II or IWPA of an existing drinking water supply area, a proposed drinking water source area, or a Zone A or Zone B Protection Zone of a surface drinking water supply.

Based on MassGIS data, the nearest public water source (ID #4036000-08G) is a Zone II area located approximately 0.5 miles south and cross-gradient (not downgradient) from the proposed waste deposition areas of Phase 7 and Phase 8. Based on MassGIS data, the proposed waste deposition areas are not within the recharge area (Zone C Protection Zone) of a surface drinking water supply.

The Applicant included a letter from the Bourne Water District (Record No. 8) stating that it does not have, nor will it seek to locate future drinking water sources downgradient of the Landfill. In addition, the Bourne Board of Health has issued a regulation that prohibits the installation of any public or private water supply wells downgradient of the Landfill.

MassDEP has reviewed its file and confirmed that there are no applications pending for a proposed drinking water source area within a three-mile radius of the proposed Site. (Record No. 48)

MassDEP's Finding:

MassDEP has determined that the waste deposition area proposed in the Application will not be located within a zone of contribution of an existing public water supply or proposed drinking water source area, or the recharge area of a surface drinking water supply, and therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(7).

8. **Criterion at 310 CMR 16.40(3)(a)(8): Zone A or Zone B of a Surface Drinking Water Supply:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition would be within the Zone A or Zone B of a surface drinking water supply.*

   The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site indicating that there are no Zone A or Zone B Protection Zones of a surface drinking water supply within the mapped area.

   Based on MassGIS data, MassDEP has determined that the nearest mapped Zone A or Zone B Surface Drinking Water Supply Protection Zones (for the Long Pond Reservoir) is located approximately 9 miles south of the proposed waste deposition area.

   MassDEP's Finding:

   MassDEP has determined that the proposed waste deposition areas will not be located within the Zone A or Zone B of a surface drinking water supply, and therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(8).

9. **Criterion at 310 CMR 16.40(3)(a)(9): Perennial Stream Draining to Surface Drinking Water Supply:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition would be less than 400 feet upgradient, as defined by groundwater flow or surface water drainage, of a perennial water course that drains to a surface drinking water supply which is within one mile of the waste deposition area.*

   The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the Site indicating that there are no Zone A or Zone B Protection Zones of a surface drinking water supply within the mapped area.

   The Applicant stated that the Landfill is not located less than 400 feet upgradient, as defined by groundwater flow or surface water drainage, of a perennial water course that drains to a surface drinking water supply which is within is within one mile of the waste deposition area. (Record No. 1)

   MassDEP has determined using MassGIS data that the nearest surface water drinking supply (the Long Pond Reservoir) is located approximately 9 miles south of the proposed waste deposition area.

   MassDEP's Finding:

   MassDEP has determined that the proposed waste deposition areas will not be located less than 400 feet upgradient of a perennial water course that drains to a surface drinking water supply which is within one mile of the waste deposition area. Therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(9).

10. **Criterion at 310 CMR 16.40(3)(a)(10): Potentially Productive Aquifer:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition would be within a Potentially Productive Aquifer unless:*
(b). *the proponent demonstrates to the Department's satisfaction, based on hydrogeological studies, that the aquifer cannot now, nor in the reasonably foreseeable future, be used as a public water supply due to existing contamination of the aquifer.*

The Applicant has identified contamination sources downgradient of the Site, in particular Phases 7 and 8, as two closed and unlined landfills in the Town of Bourne (Brookside Development Corp. Landfill and Nightingale Stump Landfill). MassDEP has confirmed that Brookside Development Corp. Landfill, approximately 0.5 miles southwest was closed in 1968 and capped in 1996 and Nightingale Stump Landfill approximately 0.5 miles west was closed in 1989. The Applicant states that portions of the aquifer beneath the highway corridor associated with MacArthur Boulevard, and some areas west of MacArthur Boulevard have been classified as "Non-Potential Drinking Water Source Areas" in accordance with the Massachusetts Contingency Plan ("MCP"). (Record No. 1)

MassDEP approved the permit application for a BWP SW23 Comprehensive Site Assessment ("CSA") to the Town of Bourne – Department of Integrated Solid Waste Management on June 5, 2017 (Record No. 49). The CSA identified the primary sources of contaminants detected in groundwater samples collected from the environmental monitoring network within the facility boundaries and downgradient is the unlined landfill (Phase 1A, 1B and 1C), former septage lagoons and Department of Public Work ("DPW") facility. Leachate from the unlined landfill has degraded water quality downgradient of the Landfill. The unlined landfill has been capped and closed in accordance with solid waste regulations to reduce leachate generation. The former wastewater lagoons were located at the northeastern of the corner of the property, which dumping of septage ceased in 1991 and the lagoons have been decommissioned by removing the accumulated sludge and underlying soils. All underground storage tanks (USTs), which were part of the DPW facility, have been removed from the site and five floor drains in the DPW garage were connected to an underground tight tank with oil water separator.

Based upon a review of the CSA permit application MassDEP made the following "Finding" in the June 5, 2017 permit decision:

> "Contamination beyond the point of compliance is limited to groundwater. Groundwater contamination is present at or beyond the point of compliance above GW-1 concentrations and background levels. A condition of "no significant risk" for groundwater exposure pathway has not been achieved. Groundwater has not been cleaned up to a level that results in "no significant risk". Based on information provided during the assessment process, municipally supplied public water is available and there are currently no potable private wells located within the confines of the groundwater plume or downgradient of the plume. However, the current groundwater exposure pathway has been eliminated through institutional controls. The previous capping of the unlined Landfill and ongoing landfill

reclamation of unlined phase 1D has resulted in decreased concentrations of contaminants within the aquifer. However, based on the environmental monitoring data there still is a potential future health risk of groundwater being used as a potable water supply downgradient of the Bourne Landfill." MassDEP recommends that private wells not be installed immediately adjacent to and/or downgradient of any unlined landfills. MassDEP recommended the Town continue to implement institutional controls as a form of risk management. (Records No. 49 & 63)

The Applicant stated that the Town of Bourne has put in place institutional controls (i.e., board of health regulation) to prevent future installation of private and public wells from being located downgradient of the landfill and that drinking water from the Bourne Water District distribution system is available in all areas hydraulically downgradient of the landfill. The Town of Bourne is prohibiting installation of any private or public wells located hydraulically downgradient of the Facility based upon particle tracking maps created by USGS. MassDEP recommends that private wells not be installed immediately adjacent to and/or downgradient of any unlined landfills.

MassDEP's Finding:

MassDEP has identified that the Facility is located within a Potentially Productive Aquifer. MassDEP has determined that based on hydrogeological studies, the aquifer cannot now, nor in the reasonably foreseeable future, be used as a public water supply due to existing contamination of the aquifer. Therefore, MassDEP has determined that the Site **meets** this criterion, 310 CMR 16.40(3)(a)(10).

11. **Criterion at 310 CMR 16.40(3)(a)(11): Within 1000 feet Upgradient or Otherwise within 500 feet of an Existing or Potential Private Water Supply Well:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition would be within 1000 feet upgradient, and where not upgradient, within 500 feet, of a private water supply well existing or established as a potential supply at the time of submittal of the application; provided, however, the applicant may show a valid option to purchase the restricted area, including the well and a guarantee not to use the well as a drinking supply, the exercise of which shall be a condition of any site assignment.*

The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the Site indicating that there are no public water supplies within the mapped area.

The Applicant stated that there are no known private drinking water supply wells within 1,000 feet of the Landfill (Record No. 1). The Applicant submitted a letter from the Town of Bourne Board of Health dated June 6, 2020 (Record No. 8) acknowledging Section 5.3 of the local Health Regulations that prohibits the installation of any public or private water supply wells downgradient of the Landfill. Pursuant to the regulation, the downgradient area shall be delineated by the particle tracking maps created by USGS. Additionally, the letter stated that all areas downgradient of the landfill are connected to the town's public water system. (Records No. 1 & 8).

MassDEP considered the Comprehensive Site Assessment ("CSA") Permit application (Record No. 63) and the complete Cumulative Impact Assessment ("CIA") (Record No. 62) and final CSA approval, dated June 5, 2017, for the Town of Bourne – Department of Integrated Solid Waste Management (Record No. 49). During the assessment process, the Applicant conducted private well surveys to identify all private wells in the vicinity of the Landfill, including downgradient, upgradient and cross-gradient. All private wells that were identified in the landfill plume, adjacent to the plume, and/or in close proximity to the landfill were connected to the public water supply system. The land upgradient of Phase 7 and Phase 8 is vacant land owned by Joint Base Cape Cod and MassDEP determined that there are no residents located within 1,000 feet upgradient of Phase 7 and Phase 8. The land cross-gradient of Phase 7 and Phase 8 is vacant land to the south and the existing Landfill to the north and MassDEP determined that there are no residents within 1,000 feet cross-gradient of Phase 7 and Phase 8.

MassDEP's Finding:

MassDEP has determined that the proposed waste deposition area for Phase 7 and Phase 8 will not be within 1000 feet in any direction of an existing or potential private water supply well, and therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(11).

12. **Criterion at 310 CMR 16.40(3)(a)(12): Four Feet Depth to Ground Water:** *No site shall be determined to be suitable or be assigned as a landfill facility where the maximum high groundwater table is within four feet of the ground surface in areas where waste deposition is to occur or, where a liner is designed to the satisfaction of the Department, within four feet of the bottom of the lower-most liner.*

The Applicant submitted a letter from Geoscience of Norwell, Massachusetts dated July 1, 2021 (Record No. 34) stating that USGS installed a multi-level monitoring well cluster (wells are designated as MA-BHW-212 to 215) at various depth to bottom of screen below land surface ranges from 83.2 feet to 278.5 feet, with land surface and measuring point at 102.42 feet MSL. The letter further stated that the water levels in these wells were measured either monthly or bi-monthly until the well was abandoned in March 2018. The Cape Cod Commission has continued monitoring ground water levels in the monitoring well MW-20S, which was added to the cluster. The groundwater monitoring data showed that the highest depth to water was recorded in July 1998 at 51.45 feet and the lowest was recorded in 1981 at 59.42 feet. The letter concluded that based on the measurements, the fluctuation in the water table has a range of 7.97 feet.

The Applicant stated that the lowest point of elevation where the Phase 7 liner joins to the Phase 6 will be at 52 feet MSL. The groundwater elevation at this area is at 46.5 feet MSL. The lowest point of elevation for Phase 8 will be in the leachate sump area at 51.5 feet MSL. The groundwater elevation at this area is 47.4 feet MSL.

The Applicant submitted the Groundwater Contour Plan (Record No. 26) that shows the estimated maximum groundwater elevations for the Landfill area, based on historical

maximum groundwater elevations in groundwater monitoring wells located around the perimeter of the Landfill, including the area for the proposed modifications. Based on the data presented, the Applicant has demonstrated that there will be a four-foot separation of the base of the liner above the maximum calculated groundwater surface.

MassDEP's Finding:

Pursuant to 310 CMR 16.40(1)(c), site suitability applications shall be evaluated with the presumption that the proposed facility shall be designed and constructed to meet all relevant state and federal statutory, regulatory and policy requirements. The review of an application does not consider detailed facility design or operations except where:

a. the Department determines that specific design or operation plans or data are necessary to determine whether potential discharges or emissions from the proposed facility could render the site not suitable and requires the applicant to submit such relevant and detailed information; or
b. the applicant intends to alter the site or design the facility to meet specific site suitability criteria and submits such plans or other information as the Department deems necessary to determine if the criteria are satisfied.

MassDEP has determined that although specific design information for the Phase 7 and Phase 8 liner has not been included in the Application, sufficient information has been submitted to determine that the liner can be designed to meet the requirement for a 4-foot separation between the lower most liner and the maximum high groundwater level.

The Application establishes that there will be a four-foot separation from maximum high groundwater to the base of the liner in Phases 7 and 8, and therefore, MassDEP has determined that the Site **meets** this criterion, 310 CMR 16.40(3)(a)(12).

13. **Criterion at 310 CMR 16.40(3)(a)(13): Wetlands:** *No site shall be determined to be suitable or be assigned as a landfill facility where the outermost limits of waste deposition or leachate containment structures would be within a resource area protected by the Wetlands Protection Act, M.G.L c. 131, § 40, including the 100-year floodplain.*

The Applicant stated that the proposed waste deposition area or leachate containment structures are not within any resource area, including the 100-year floodplain, protected by the Wetlands Protection Act (Record No. 1). The Applicant submitted a "Water Resources Plan" (Record No. 53) encompassing a ½ mile radius from the Site showing that the proposed waste deposition area for Phase 7 and Phase 8 is not within a resource area protected by the Wetlands Protection Act.

MassDEP's Finding:

MassDEP has determined that although specific design information for the proposed leachate containment structures has not been included in the Application, sufficient information has been submitted to determine that the Site can be designed to meet this requirement. MassDEP has determined that the Site can be designed so that the proposed waste deposition area or leachate containment structures will not be within any resource

area protected by the Wetlands Protection Act, including the 100-year floodplain. Therefore, MassDEP has determined that the Site **meets** this criterion, 310 CMR 16.40(3)(a)(13).

14. **Criterion at 310 CMR 16.40(3)(a)(14): 400 Feet to a Lake or 200 Feet to a Riverfront Area:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition or the leachate containment structures would be less than 400 feet to a lake, or 200 feet to a Riverfront Area as defined in 310 CMR 10.00, that is not a drinking water supply.*

The Applicant stated that the proposed waste deposition area or the leachate containment structures will not be located within 400 feet of a lake, or within 200 feet of a Riverfront Area (Record No. 1). The Applicant submitted a Water Resources Plan (Record No. 53) encompassing a ½ mile radius from the site showing that the nearest surface water body is approximately 500 feet from the proposed waste deposition area for Phase 7 and Phase 8.

MassDEP's Finding:

MassDEP has determined that although specific design information for the proposed leachate containment structures has not been included in the Application, sufficient information has been submitted to determine that the Site can be designed to meet this requirement. MassDEP has determined that the proposed waste deposition area or leachate containment structures for Phase 7 and Phase 8 will not be located within 400 feet of a lake, or 200 feet of a Riverfront Area, and therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(14).

15. **Criterion at 310 CMR 16.40(3)(a)(15): 1000 Feet to Various Occupied Facilities:** *No site shall be determined to be suitable or be assigned as a landfill facility where any area of waste deposition would be within 1000 feet of an occupied residential dwelling, health care facility, prison, elementary school, middle school or high school or children's pre-school, licensed day care center, senior center or youth center, excluding equipment storage or maintenance structures.*

The Applicant stated that a Global Positioning Survey ("GPS") survey was conducted to locate the closest occupied residential dwelling, which has been identified to be within the Bay View Campground. The Applicant submitted a letter dated January 10, 2018 from Mr. David Ricci, Owner/Manager of Bay View Campgrounds, Inc. regarding the discussion with the Town of Bourne's Building Inspector on the term '*occupied residential dwelling*' with respect to the various facilities located in the campgrounds. MassDEP has confirmed that the Town of Bourne's Zoning Bylaws defined "dwelling" as a building or part of a building used exclusively as the living quarters for one or more families and "campgrounds" as premises used for campers, tenting, or for temporary overnight facilities of any kind where a fee is charged. Pursuant to the definitions, MassDEP has determined that the facilities within the campgrounds are intended for temporary overnight facilities and not for human habitation or occupied residential dwelling. (Record No. 34)

The Applicant submitted a Land Use Plan (Record No. 54) encompassing a ½ mile radius from the Site. The Land Use Plan shows the location of the closest occupied residential dwelling just outside the 1,000-foot offset line from the waste deposition area for Phase 7 and Phase 8. The Land Use Map shows a healthcare facility at 146 MacArthur Boulevard, approximately 3500 feet north of the waste deposition area for Phase 7 and Phase 8. The Land Use Plan does not show any prisons, elementary schools, middle schools, high schools, children's preschools, licensed day care centers, or senior or youth centers within the mapped area.

MassDEP's Finding:

MassDEP has determined that the proposed waste deposition area for Phase 7 and Phase 8 will not be within 1000 feet of an occupied residential dwelling, health care facility, prison, elementary school, middle school or high school or children's pre-school, licensed day care center, senior center or youth center, excluding equipment storage or maintenance structure, and therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(15).

16. **Criterion at 310 CMR 16.40(3)(a)(16): Groundwater Protection System:** *No site shall be determined to be suitable or be assigned as a landfill facility where waste deposition on the site would result in a threat of an adverse impact to groundwater through the discharge of leachate, unless it is demonstrated to the satisfaction of the Department that a groundwater protection system will be incorporated to prevent such threat.*

The Application stated that a groundwater protection system (double composite liner system with interstitial leak detection) in compliance with current MassDEP regulations will be incorporated into the design of Phase 7 and Phase 8. (Record No. 1) In a response letter to MassDEP dated November 22, 2021 (Record No. 43), the Applicant stated that the Site and the downgradient areas are not existing or potential drinking water source areas.

The Applicant submitted a letter from the Bourne Water District dated June 6, 2020 (Record No. 8) stating that no well, private or public, will be allowed to be constructed, for human consumption, if its placement is hydraulically downgradient of the Landfill. The letter also stated that the Bourne Health Department does not permit the construction of potable wells downgradient from the Landfill and that these areas are connected to the public water system. In addition, the Applicant submitted a letter from the Bourne Water District dated May 26, 2020 (Record No. 8) stating that the Bourne Water District would not be permitted to establish a new production well downgradient of a landfill by MassDEP, and all previously identified water supply wells have been replaced with connections to the public water supply system.

The Applicant stated that the facility has been monitoring groundwater quality in its vicinity and downgradient of the Landfill, in accordance with the MassDEP's approved quarterly groundwater monitoring program, since 1997. The Applicant stated that the monitoring record shows monitored groundwater quality has improved, which the Applicant indicated presumably because of the abandonment and removal of the former septage pits that were located in the northeast corner of the site, the closing and capping of the unlined Phase 1-A,

B, C Landfills and the mining and removal of the former unlined Phase 1-D Landfill. The Applicant stated that beginning with the construction of the Phase 3, Stage 1 Landfill in 2000, and all other cells since then, liners have been constructed with double composite liners with interstitial leak detection. In addition, an 18-inch screened sand drainage and protection layer is constructed above the liner system.

Based on the information provided in the Application and MassDEP's expertise and knowledge, MassDEP has concluded that the groundwater protection system proposed in the Application for Phase 7 and Phase 8 complies with current regulatory requirements for such systems and will contain features and elements designed to prevent the discharge of leachate into groundwater. MassDEP notes that the requirement for a double composite liner system with leak detection in 310 CMR 19.110 is stricter than the federal requirement for solid waste landfills and essentially equivalent to the federal requirements for a hazardous waste landfill. MassDEP also notes that the proposed groundwater protection system for Phase 7 and Phase 8 must be approved through the MassDEP solid waste permitting process, which will involve an in-depth evaluation by MassDEP to ensure compliance with MassDEP regulations and guidance documents.

MassDEP's Finding:

MassDEP has determined that a groundwater protection system for Landfill (double composite liner system with leak detection) designed, constructed, and maintained in compliance with current MassDEP regulations at 310 CMR 19.000 and MassDEP's Landfill Technical Guidance Manual will not result in a threat of an adverse impact to groundwater through the discharge of leachate. Therefore, MassDEP has determined that the waste deposition area proposed in the Application for Phase 7 and Phase 8 will not result in a threat of an adverse impact to groundwater through the discharge of leachate, and therefore, the Site **meets** this criterion, 310 CMR 16.40(3)(a)(16).

B. GENERAL SITE SUITABILITY CRITERIA
CRITERIA FOR SOLID WASTE HANDLING FACILITIES
{310 CMR 16.40(4)}

Pursuant to 310 CMR 16.22(2), "A major modification shall require submittal of a new site assignment application that addresses all criteria affected by the modification, as determined by MassDEP in writing, and shall be reviewed in accordance with the requirements established at 310 CMR 16.08 through 16.20."

For the vertical expansion, designated as Phase 9, MassDEP has determined that the site assignment application for the vertical expansion should address the following criteria: 16.40(4)(b) *Traffic and Access to the Site*; 16.40(4)(f) *Potential Air Quality Impacts*; 16.40(4)(g) *Potential for the Creation of Nuisances*; 16.40(4)(h) *Size of facility*; 16.40(4)(i) *Areas Previously Used for Solid Waste Disposal*; 16.40(4)(k) *Consideration of Other Sources of Contamination or Pollution*; and 16.40(5) *Promotion of Integrated Solid Waste Management.*

For the horizontal expansion, designated as Phase 7 and Phase 8, the Applicant has addressed all the setback criteria at 310 CMR 16.40(4)) as follows:

1) **Criterion at 310 CMR 16.40(4)(a): Agricultural Lands:** *No site shall be determined to be suitable or be assigned as a solid waste management facility where:*
   1. the land is classified as Prime, Unique, or of State and Local Importance by the United States Department of Agriculture, Natural Resources Conservation Service; or
   2. the land is deemed Land Actively Devoted to Agricultural or Horticultural Uses, except where the facility is an agricultural composting facility; and
   3. a 100-foot buffer would not be present between the facility and those lands as classified at 310 CMR 16.40(4)(a)1 or 2.

   United States Department of Agriculture ("USDA"), Natural Resources Conservation Service ("NRCS") mapping shows the presence of soil types associated with Prime, Unique, or State and Local Importance farmland designations on the Site. According to USDA mapping information, the Site is mapped as Barnstable sandy loam which is classified as "Farmland of statewide importance". The Applicant submitted a Land Use Plan (Record No. 54) which depicts the boundary of the "Farmland of statewide importance" as "important agricultural lands".

   The Applicant stated that the 25-acre parcel is currently site-assigned for solid waste handling and has been completely disturbed by historical clearing and gravel mining operations and approved solid waste handling operations (Record No. 1).

   The Applicant retained LEC Environmental Consultants, Inc. ("LEC"), as a certified soil scientist to ascertain the current accuracy of the historic USDA soil mapping information (Records No. 1 and 10). The Applicant submitted a site-specific soil survey report for the 25-acre parcel dated August 29, 2018, prepared by LEC, and signed by Thomas A. Peragallo, a Certified Professional Soil Scientist/Soil Classifier. The LEC soil survey

report detailed a field investigation that included twenty (20) test pits throughout the 25-acre parcel. A soil profile was performed for each test pit. The LEC soil survey report concluded that the majority of the 25-acre parcel consists of soil and non-soil material disturbed by human activity, related to the operation of the Landfill, that was redefined as Urban Land and Udipsamments, which are not Prime, Important or Unique Farmland in Massachusetts.

The LEC soil survey found that a thin strip of natural, undisturbed Barnstable sandy loam, classified as farmland of statewide importance, is present along the western and southern property boundary of the 25-acre parcel (Record No. 10). The Applicant submitted a Schematic Site Buildout Plan (Record No. 56) and a Proposed Site Assignment Modifications plan (Record No. 57) that depicts the area proposed for site assignment modifications for Phase 7 and Phase 8, the areas determined to be farmland of statewide importance, and a 100-foot offset line from the areas determined to be farmland of statewide importance. The area determined to be farmland of statewide importance is not located within 100 feet of the area proposed for site assignment modifications.

MassDEP's Finding:

Based on the findings of the site-specific soil survey, MassDEP has determined that the Site will not be located on land on which the existing conditions meet the requirements for classification as Prime, Unique, or of State and Local Importance by the United States Department of Agriculture, Natural Resources Conservation Service; the land is not Land Actively Devoted to Agricultural or Horticultural Uses, and a 100 foot buffer will be present between the Site and those lands, and therefore, the Site **meets** this criterion, 310 CMR 16.40(4)(a).

2) **Criterion at 310 CMR 16.40(4)(b): Traffic and Access to the Site.** *No site shall be determined to be suitable or be assigned as a solid waste management facility where traffic impacts from the facility operation would constitute a danger to the public health, safety, or the environment taking into consideration the following factors:*
   1. *traffic congestion;*
   2. *pedestrian and vehicular safety;*
   3. *road configurations;*
   4. *alternate routes; and*
   5. *vehicle emissions.*

1. Traffic Congestion: The Applicant stated that traffic impacts associated with a maximum waste acceptance rate of 825 tons per day were evaluated in 1998 as part of the joint review process with MEPA and Cape Cod Commission ("CCC"). The Applicant states that traffic impacts were again reviewed in 2003 when the facility filed a Notice of Project Change ("NPC") with MEPA, and a Major Modification with the CCC, to accept MSW at the landfill. The Applicant stated that since the proposed landfill expansion does not change the site access or the permitted tonnage to the site, there will be no change the existing traffic volumes and no change to the existing traffic impacts. (Record No. 1)

In response to comments from MassDEP regarding traffic, the Applicant submitted a memo

prepared by TEPP LLC, dated August 3, 2021, with appendices that included the original Traffic Impact and Access Study ("TIAS") prepared as part of the EIR/DRI Joint review process with MEPA and CCC in 1998 (Records No. 34 & 35). The TIAS evaluated the existing year 1998 traffic conditions, no-build traffic conditions in 2003, and project build traffic conditions in 2003. The study area included Route 28 northbound at the landfill access road intersection and Route 28 northbound at the U-turn intersection from Route 28 southbound. The TIAS analyzed the impacts of 289 trucks (578 round-trip truck trips) needed to bring 825 tons of waste per day to the facility. The TIAS presented a weekday AM peak hour capacity analysis and estimated that the project will generate 39 new truck (78 round-trip truck trips) during the weekday AM peak hour. The capacity analysis found the following:

- During average month and peak month conditions, right turns from the facility access road onto Route 28 northbound were estimated to operate at Level of Service ("LOS") B under the 2003 build conditions.
- During average month conditions, left turns from the U-turn from Route 28 southbound onto Route 28 northbound were estimated to operate at LOS C under the 2003 build condition. During peak month conditions, the left turns were estimated to operate at LOS E under the 2003 build condition.

The Applicant submitted the Facility's 2020 scale records (Record No. 34) to demonstrate that the facility's current traffic volumes are consistent with what was previously evaluated in the TIAS. The 2020 scale records include a record of the number of vehicles utilizing the facility each day from January 2, 2020 through December 31, 2020. The number of vehicles per day ranged from 11 vehicles on June 7, 2020 to 301 vehicles on June 24, 2020. The scale records also include a breakdown of vehicles per hour of the day which the Applicant used to estimate the peak hour traffic volume. The scale records indicate that the peak hour begins at 10:00 AM and includes approximately 13.3 percent of the daily volume.

The Applicant stated that based on 2020 scale records, an average of 179 trucks (358 round-trip truck trips) access the facility per weekday with approximately 24 trucks (48 round-trip truck trips) during the weekday AM peak hour.

The memo prepared by TEPP LLC also evaluated a potential future scenario where the facility no longer has a contract to accept mostly municipal combustor ash and instead is accepting 100% municipal solid waste ("MSW"). Based on 2020 scale records, the facility's contract to accept mostly municipal combustor ash resulted in 7,630 trucks carrying an average load of 26 tons of waste (equivalent to 198,380 tons). For the purposes of evaluating the potential future scenario, the Applicant assumed that the 198,380 tons of waste that arrived in vehicles carrying an average load of 26 tons of waste (i.e., in 100 cubic-yard transfer trailers) would instead be transported in vehicles carrying an average load of 8 tons of waste (i.e., in packer trucks) yielding 24,798 trucks or an increase of 17,168 trucks per year. Over 262 weekdays, 17,168 trucks equal an additional 66 trucks per weekday. Based on these assumptions, the Applicant estimated that the facility would generate 242 trucks (484 round-trip truck trips) per weekday with approximately 33 trucks (66 round-trip truck trips) during the weekday AM peak hour. (Record No. 34)

The Applicant concluded that traffic volumes under both scenarios are consistent with what was evaluated in the TIAS. (Record No. 34)

The 2005 Site Assignment (Record No. 4) references delays on Route 28 southbound U-turn onto Route 28 northbound which could lead to queued vehicles exceeding the turning lane capacity and causing traffic to back up onto the main travel lane. To mitigate this issue, the 2005 Site Assignment stated that MassDEP required the Applicant to include in all contracts with haulers a requirement that their vehicles not queue beyond the capacity of any U-turn lane on Route 28 and instead utilize the next available U-turn lane or rotary for reversing direction. The Applicant stated that the Facility has two contracts for disposal, however, neither contract has a specific clause regarding the turning lane capacity on Route 28 South. The Applicant stated that the absence of a specific clause was an inadvertent oversight that will be corrected with an amendment to each contract as soon as practical (Record No. 34).

2. Pedestrian and Vehicular Safety

The facility is accessed via a deacceleration lane to a private driveway on Route 28 northbound. The Applicant stated that pedestrians are prohibited along Route 28 therefore potential conflicts with pedestrians will not arise. (Record No. 1)

The Applicant presented crash data available from the Massachusetts Department of Transportation ("MassDOT") from January 1, 2013 to June 4, 2020 for locations near the facility. The average crash rate per million entering vehicles ("mev") at unsignalized intersections is 0.57/mev, both statewide and in MassDOT District 5. The Applicant evaluated the crash rates at the study area intersections and determined that the crash rate at each intersection was below both the statewide and MassDOT District 5 average crash rates (Record No. 11).

The Applicant noted that substantial infrastructure improvements were completed in 2012 that eliminated opposing traffic conflicts around the scale area and separated residential drop-off traffic from the commercial waste vehicles. (Record No. 11).

3. Road Configuration: The only access to the site is via Route 28 northbound. Twelve-foot-wide acceleration and deceleration lanes were constructed to access the site in accordance with a permit issued by the Massachusetts Highway Department on January 14, 1999. These lanes are dedicated solely to access to the site. Route 28 is the main thoroughfare in the area and is capable of handling facility traffic without impact (Record No. 1).

4. Alternate Routes: Access to the facility is limited to the Route 28 northbound lane. Route 28 is the main route through the area. No alternate routes were identified or proposed.

5. Vehicular Emissions: The Applicated stated that the total approved tonnage at the site will not change, therefore, traffic volume will not change and there will be no changes to vehicle emission rates (Record No. 1).

MassDEP's Finding:

MassDEP has determined that the proposed Phase 9 vertical expansion (74-acre parcel) and the proposed Phase 7 and Phase 8 horizontal expansion (25-acre parcel) complies with the requirements of 310 CMR 16.40(4)(b) Traffic and Access to the Site, and that operation of the Facility will not constitute a danger to the public health, safety, or the environment taking into consideration traffic and access to the site. Therefore, the Site **meets** this criterion, 310 CMR 16.40(4)(b).

Should the Bourne Board of Health grant site assignment, the Applicant will be required to submit an Authorization to Construct application to MassDEP and traffic impacts will be evaluated again. During MassDEP permitting for Phase 7, Phase 8, and Phase 9, MassDEP is prepared to require that the Applicant monitor and record daily traffic volumes. If the actual traffic volumes are not consistent with what was evaluated in the TIAS (e.g., 289 trucks per day), MassDEP may require a new traffic impact study.

If the Bourne Board of Health has any traffic-related concerns, MassDEP recommends that the Board of Health consider requiring the Applicant to monitor traffic levels and perform a post-development traffic impact study as a condition of any Site Assignment approval and require a pre-submittal of the study protocol for review and approval by the Bourne Board of Health and MassDEP.

3. **Criterion at 310 CMR 16.40(4)(c) Wildlife and Wildlife Habitat:** *No site shall be determined to be suitable or be assigned as a solid waste management facility where such siting would:*
    1. *have an adverse impact on Endangered, Threatened, or Special Concern species listed by the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife in its database;*
    2. *have an adverse impact on an Ecologically Significant Natural Community as documented by the Natural Heritage and Endangered Species Program in its database; or*
    3. *have an adverse impact on the wildlife habitat of any state Wildlife Management Area.*

Portions of the 25-acre parcel proposed for Phase 7 and Phase 8 are mapped as Priority Habitat for the Eastern Box Turtle, a species state-listed as Special Concern. According to the MassGIS database, approximately 1.9 acres of the 25-acre parcel is mapped as Priority Habitat. The Application included a letter from Natural Heritage and Endangered Species (NHESP) dated July 17, 2001 (Record No. 34). The Applicant stated that in the July 17, 2001 letter, NHESP agreed that rare species will not be directly impacted so long as this area is maintained as a buffer. The Applicant stated that the Town has committed to maintaining a buffer, such as boulders, fencing, or earthen berms (Record No. 1). The Application included a second letter from NHESP, dated February 5, 2020, which stated that Phase 7, 8, and 9, as currently proposed, appear to be exempt from Massachusetts Endangered Species Act ("MESA") review. The determination requires that all work associated with Phases 7-9 shall occur within areas already disturbed and in particular shall

occur outside the "Limit of Box Turtle Habitat" (Record No. 13). The Applicant submitted a Schematic Site Buildout Plan (Record No. 20) showing the "Limit of Box Turtle Habitat".

The Applicant stated that NHESP has confirmed there will be no impact on an Ecologically Significant Natural Community (Records No. 1 & 55). Based on the MassGIS database, the nearest Natural Community is located approximately 530 feet southeast of the Site.

MassDEP's Finding:

MassDEP has determined that based on the findings by NHESP, the rare species identified within the site location (Eastern Box Turtle) will not be directly impacted so long as a buffer is maintained, and all work associated with Phase 7-9 occurs within previously disturbed areas and no areas mapped as Priority Habitat for the Eastern Box Turtle are disturbed. Therefore, MassDEP has determined that the Site **meets** this criterion, 310 CMR 16.40(4)(c).

4. **Criterion at 310 CMR 16.40(4)(d): Areas of Critical Environmental Concern ("ACEC"):** *No site shall be determined to be suitable or be assigned as a solid waste management facility where such siting:*
   1. would be located within an Area of Critical Environmental Concern (ACEC), as designated by the Secretary of the Executive Office of Environmental Affairs; or
   2. would fail to protect the outstanding resources of an ACEC as identified in the Secretary's designation if the solid waste management facility is to be located outside, but adjacent to the ACEC.

The Applicant stated that the Bourne ISWM facility is not within or adjacent to an ACEC. The Applicant submitted a Land Use Plan (Record No. 54) encompassing a ½ mile radius from the site showing the nearest ACEC located along the western edge of Route 28, across the highway and within 500 feet of the site. According to the MassGIS database, the ACEC is the Bourne Back River estuarine system and the boundary for the Bourne Back River ACEC is shown approximately 350 feet from the facility's property boundary. The Applicant stated that the ACEC designation is limited to the wetland resource areas and a 100-foot buffer around those areas (Record No. 1).

The proposed Site is not located immediately adjacent to the Bourne Back River ACEC since the Site and the Bourne Back River ACEC are separated by Route 28. MassDEP reviewed the final CSA approval, dated June 5, 2017, for the Town of Bourne – Department of Integrated Solid Waste Management (Record No. 49). As part of the assessment, a qualitative risk assessment was presented, and the risk assessment concluded that there is no evidence to indicate that surface water bodies downgradient of the Landfill have been affected or will be affected.

MassDEP's Finding:

MassDEP has determined that the Site complies with the requirements of 310 CMR 16.40(4)(d) Areas of Critical Environmental Concern and that operation of the facility will not be located in or adjacent to an ACEC or fail to protect the outstanding resources of an ACEC. Therefore, the Site **meets** this criterion, 310 CMR 16.40(4)(d).

5. **Criterion at 310 CMR 16.40(4)(e): Protection of Open Spaces**: *No site shall be determined to be suitable or be assigned as a solid waste management facility where such siting would have an adverse impact on the physical environment of, or on the use and enjoyment of:*
   1. *state forests;*
   2. *state or municipal parklands or conservation land, or other open space held for natural resource purposes in accordance with Article 97 of the Massachusetts Constitution;*
   3. *MDC reservations;*
   4. *lands with conservation, preservation, agricultural, or watershed protection restrictions approved by the Secretary of the Executive Office of Environmental Affairs; or*
   5. *conservation land owned by private non-profit land conservation organizations and open to the public.*

   The Applicant stated that the ISWM staff met with the Environmental Manager and Natural Resources Manager of the Massachusetts Army National Guard's (the "Guard") Environmental and Readiness Center and the Environmental Officer of the Environmental Management Commission ("EMC") to discuss ISWM's application to expand the original 74-acre site assignment to allow solid waste handling operations to be conducted on the 25-acre parcel and to address any concerns. The Applicant stated that the Guard and the EMC manage the habitat of Camp Edwards, a 15,000-acre parcel located on the Joint Base Cape Cod ("JBCC") adjacent to the Town's parcel. The Applicant stated that Camp Edwards has been designated as the Upper Cape Water Supply Reserve, and the Guard has chosen to treat this area as it were Zone II. The Applicant stated that the EMC is overseeing the implementation of environmental management principles agreed to by the Guard. The Applicant stated that the EMC reports to three agencies that are part of the Executive Office of Environmental Affairs ("EOEA"), therefore Camp Edwards could be considered open space as defined in 310 CMR 16.40(4)(e)2. and 4. The Applicant stated that to eliminate any potential adverse impacts on the physical environment that the Town's landfill operations could have on the JBCC property, Bourne Integrated Solid Waste Management ("ISWM") has developed best management practices (BMPs) on management of litter and dust, stormwater/groundwater protection, and wildlife habitat protection buffer. (Record No. 1)

   MassDEP's Finding:

   Based on the ISWM's coordinating effort with the Guard and the ISWM's implementation of best management practices, MassDEP has determined that operation of the Site will not have an adverse impact on the physical environment of, or on the use and enjoyment of open space. Therefore, MassDEP has determined that the Site **meets** this criterion, 310 CMR 16.40(4)(e).

6. **Criterion at 310 CMR 16.40(4)(f): Potential Air Quality Impacts:** *No site shall be determined to be suitable or be assigned as a solid waste management facility where the anticipated emissions from the facility would not meet required state and federal air quality standards or criteria or would otherwise constitute a danger to the public health, safety or the environment, taking into consideration:*

1. *the concentration and dispersion of emissions*
2. *the number and proximity of sensitive receptors; and*
3. *the attainment status of the area.*

The Applicant submitted a document titled "Interim Risk Evaluation and Cumulative Impact Assessment ("CIA") of the Proposed Phased Landfill Development of the Town of Bourne Integrated Solid Waste Management Facility" dated May 2003 (Record No. 12) and presented an updated landfill gas emissions impact analysis on sensitive receptors, dated July 20, 2021, prepared by Sanborn Head Associates, Inc. (Record No. 34). The current waste acceptance at the Facility constitutes approximately 86 percent of its annual tonnage of 219,000 in the form of municipal combustor ash ("MCA") from SEMASS waste-to-energy facility. At the time of this Application submittal, the Applicant's 10-year contract to accept MCA from SEMASS was to terminate at the end of 2021. The Applicant stated they intended to extend the contract, which is to continue accepting up to 189,000 tons per year (tpy) of MCA and 30,000 tpy of biodegradable municipal solid waste ("MSW") from Bourne and Falmouth. In the April 24, 2020 of Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Notice of Project Change, the Certificate stated that if the 10-year contract is not extended, the Applicant will return to accepting up to 219,000 tpy of biodegradable MSW. The 2003 CIA, as amended, examines potential health risk to potentially sensitive individuals living, working, or visiting in the vicinity of the ISWM Facility, which includes the areas for the proposed modifications, and taking into considerations the return to accepting up all biodegradable MSW. In addition to landfill gas composed of mostly methane and carbon dioxide as well as trace levels of a variety of volatile organic compounds and reduced sulfur compounds such as hydrogen sulfide (H_2S), the CIA includes evaluation of criteria pollutants of National Ambient Air Quality Standards ("NAAQS"). The 2003 CIA identified the key pollutant as H_2S. In 2009, Cambridge Environmental conducted an expanded evaluation of H_2S (Record No. 35), which resulted in the determination that there were no unacceptable health risks due to fugitive emissions of landfill gas from the ISWM facility. Both the 2003 and 2009 evaluation were conducted at a time when H_2S levels in landfill gas were elevated from the decay of high-sulfur construction and demolition fines (C&D fines) that were accepted by the Landfill. Acceptance of C&D fines was discontinued in 2008. Based on the landfill gas monitoring samples collected over the period from 2002 to 2021, the measured H_2S concentrations showed a decrease from approximately 8,000 parts per million (ppm) in 2002 to 54.2 ppm in 2021. The 2021 landfill gas collection rate, as metered at the flare, has been 660 standard cubic feet per minute (scfm). The Applicant states its assumptions for the analysis are based on over 90% landfill gas collection rate and approximately 98% destruction rate of H_2S by the flare, taking into consideration the operation of the horizontal collection wells in active areas of the landfill, the installation of vertical collection wells once landfill areas reached closure grade, and the placement of ash residue cover over small quantities of potential degradable MSW. The estimated landfill gas emission under the assumptions of 90% collection rate plus 98% destruction rate equates to 86.5 scfm for Phases 1-6 with continued acceptance of 85% MCA and 15% MSW. The amended analysis of exclusive acceptance of MSW as opposed to the current acceptance of 85% MCA and 15% MSW showed a peak landfill gas generation rate to be 1564 scfm. Assuming 90% collection rate plus 98% destruction rate by the flare, the

landfill gas emission is calculated to be 187.7 scfm, compared to the 2021 collection rate, as metered at the flare, of 660 scfm. The current monitoring result showed that the Facility's emission in 2021 of 54.2 ppm is below the MassDEP's permit for the Facility's emission of landfill gas combusted at the flare of no more than 200 ppm (Record No. 50).

The 2003 and 2009 evaluation has identified receptor locations within the vicinity of the landfill, mainly located along the state Route 28, which focused on a line of commercial receptors along the eastern side of Route 28 and a line of residential receptors located approximately 1,350 feet from the western edge of the landfill. The updated evaluation identified a few residences, the nearest being a caretaker's apartment at the Bay View Campgrounds, greater than 1,000 feet from the landfill. The evaluation showed that the estimated concentrations are below the MassDEP's threshold for ambient air limit, hence no risks of adverse health effects to nearby residents. Additional assessment for short term exposure of H_2S at the campground is conducted and showed that the highest modeled 24-hour average of H_2S concentrations for worst case scenario is 1.05 microgram per cubic meter ($\mu g/m^3$), which is below the Minimum Risk Level of 98 $\mu g/m^3$ established by the Agency of Toxic Substances and Disease Registry of the United States Department of Health and Human Services.

The Applicant presented an applicability analysis of 40 CFR 60, Subpart XXX, *Standards of Performance for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction, or Modification after July 2014*. Subpart XXX was promulgated on July 29, 2016, and in effect as the update to 40 CFR 60, Subpart WWW. The Landfill is subject to the reporting requirement for the Design Capacity Modifications and uncontrolled non-methane organic compounds ("NMOC") emissions under Subpart XXX. The Design Capacity Report of the Bourne Landfill dated November 7, 2014 (Record No. 35) showed that it exceeded the threshold of 2.5 million megagrams (MG), which triggered the initial testing, calculation, and reporting of uncontrolled emissions of NMOC, to determine if the 34 MG of NMOC emissions threshold in the Subpart XXX, was met or exceeded. The initial testing and calculations of NMOC emissions report dated November 20, 2014 (Record No. 35) showed an NMOC emission of 18 MG for calendar year 2014. As a result, the Landfill is not subject to the controls, monitoring and other reporting requirements under the Subpart. Pursuant to 40 CFR 60.757(b)(1), the Landfill is subject to the requirement to recalculate and report the uncontrolled NMOC emissions annually. The resulting NMOC emissions from 2014 to 2019 are below the 50 MG NMOC emissions threshold under Subpart WWW, which has been lowered to 34 MG under Subpart XXX. Under Subpart XXX, specifically 40 CFR 60.767(b)(1)(ii), allows the landfill to elect submitting the NMOC emission report once every 5 years if the reported emission is less than 34 MG for five consecutive years. The Applicant has notified the United States Environmental Protection Agency ("US EPA") and MassDEP in a letter dated April 19, 2019 regarding their intention to elect submitting the NMOC emission report once every 5 years (Record No. 35). The landfill is also subject to the air operating permit program of MassDEP under 310 CMR 7.00 - Appendix C.

In addition, the Applicant presented an evaluation of any potential emission increase for six primary pollutants established in the National Ambient Air Quality Standards

("NAAQS"): carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (particulate 10 micrometers or less (PM10) and particulate matter 2.5 micrometers or less (PM2.5)), and sulfur dioxide. The Applicant utilized air dispersion modeling to evaluate impact on sensitive receptors identified in the Air Quality Modeling Protocol as approved by MassDEP. The modeling analysis was based on landfill gas quantities at 50% methane content. The result showed a peak landfill gas emission of 1300 scfm, which is based on the current acceptance of mostly ash residue from SEMASS and a small quantity of MSW. The evaluation calculated the maximum air emission impact associated with the proposed modifications, taking into consideration the return to accepting up all biodegradable MSW. The resulting emissions were added to the ambient background levels as established by the Massachusetts Ambient Air Monitoring Network. As a result, the calculation showed emissions from the proposed modification under the maximum landfill gas generation scenario are below the NAAQS emissions standards for each criteria pollutant.

MassDEP's review of US EPA's listing of Current Non-Attainment Counties for All Criteria Pollutants indicates that there are no issues of non-attainment in Barnstable County (Record No. 51).

MassDEP's Finding:

MassDEP has determined that the Site **meets** the requirements of 310 CMR 16.40(4)(f) Potential Air Quality Impacts and that operation of the proposed Phase 9 vertical expansion and the proposed Phase 7 and 8 horizontal expansion will meet required state and federal air quality standards or criteria and will not otherwise constitute a danger to the public health, safety or the environment. Therefore, the Site **meets** this criterion.

7. **Criterion at 310 CMR 16.40(4)(g): Potential for the Creation of Nuisances:** *No site shall be determined to be suitable or be assigned as a solid waste management facility where the establishment or operation of the facility would result in nuisance conditions which would constitute a danger to the public health, safety or the environment taking into consideration the following factors:*
   1. *noise;*
   2. *litter;*
   3. *vermin such as rodents and insects;*
   4. *odors;*
   5. *bird hazards to air traffic; and*
   6. *other nuisance problems.*

1. Noise: The Applicant stated that the Facility is well buffered by distance, traffic noise along Route 28 and vegetation, mitigating potential impacts. The Applicant stated that noise emissions are inherent with the operation of any landfill (e.g., operation of trucks and heavy equipment). (Record No. 1). MassDEP records discloses no recent noise complaints from the existing Facility operation. The Applicant submitted a Sound Level Survey (Record No. 14), dated September 7, 2001, that was prepared by Cavanaugh Tocci Associates, Inc. prior to the development of the handling facility.

2. Litter: The Applicant stated that to control windblown litter associated with the Facility operations within the Landfill and the handling facility area, the Applicant will continue to use operational controls as follows:

- Portable litter fence, location of which to be determined daily based on the wind's direction;
- Permanent litter fencing installed along the northern, eastern, and western property lines. The permanent litter fencing will be extended along the eastern and western property boundary to the southern limits of Phase 7 and Phase 8;
- Application of cover material frequently on the active face of windy days;
- Active face on interior slopes to be maintained and waste disposal on outer slopes to be avoided on windy days;
- Litter collection crews to be deployed regularly and as needed, with additional routine litter inspection on areas along MacArthur Boulevard and abutting properties;
- Temporary fence to be installed, as needed basis;
- Vehicles entering facility or leaving the facility shall be covered; and,
- Indoor loading and unloading for loads with the potential of generating wind-blown litter. (Record No. 1)

3. Vermin: The Applicant proposes to mitigate potential vermin using the following measures:

- Contracting with a vector control management firm;
- Proper compaction techniques and placing cover material at the end of daily operations;
- Mixing some waste loads with soil materials; and,
- Limiting storage and quick removal of putrescible materials. (Record No. 1)

4. Odors: The Applicant stated that a potential source of odor is at the operating face of the Landfill and within the handling and transfer operations. The Applicant stated proper compaction and covering methods (daily and intermediate cover) helps minimize odors at the operating face of the Landfill. The Applicant stated that the landfill operators are instructed to take immediate action on any odor nuisance as it arises including the placement of daily cover and the placement of dry lime. The Applicant stated that expansion and proper maintenance of the existing, active landfill gas collection and flare system will serve as another mitigation measure. (Record No. 1)

5. Bird Hazards: The Applicant stated that the operation of the proposed modifications will not result in a bird hazard to aircraft. The Site abuts the Joint Base Cape Cod, which includes Otis Air National Guard Base and Camp Edwards with the closest runway area located approximately 4.5 miles from the proposed Facility modifications. The Applicant also stated that there has been no recorded incident involving bird hazards (Record No. 1).

6. Other Nuisance Problems: The Applicant stated that the landfilling and handling operations could potentially generate dust during dry periods of the year. The Applicant stated the following control measures to mitigate dust are employed:

- Soil wetting: Facility access roads are wetted using a water truck and performed several times during an operating day in the summer months;

- Application of calcium chloride, a soil wetting agent, may be an alternative measure when deemed necessary;
- Placement of vegetative cover: Inactive landfill areas may be seeded to encourage the growth of vegetation and reduce barren soils;
- Secure Material Delivery: All trucks delivering MSW, ash, stone, soil, or any other material to the site must have their loads covered; and
- Pavement sweeping: The Facility operates a sweeper regularly to remove accumulated dirt from paved areas of the site (Record No. 1).

MassDEP's Finding:

MassDEP has determined that if the Applicant operates the Landfill in compliance with MassDEP permits and regulations, the Site complies with the requirements of 310 CMR 16.40(4)(g) Potential for the Creation Nuisances, and therefore, the Site, including Phase 7, Phase 8, and Phase 9, **meets** this criterion.

Pursuant to 310 CMR 16.40(1)(c)1, MassDEP evaluated the Application with the assumption that the proposed facility would be designed and constructed to meet all relevant state and federal statutory, regulatory and policy requirements. Accordingly, complete proposed facility operational and design details, inclusive of Best Management Practices to minimize potential nuisance conditions, will be required in the Authorization to Construct permit application submitted to MassDEP, should the Bourne Board of Health grant a site assignment for the proposed facility.

MassDEP notes that the Facility has adequate setbacks. The Facility is abutted to the north by Monument Beach Sportsman's Club, to the south by undeveloped business zoned properties, to the east primarily by undeveloped land on the Joint Base Cape Cod, and to the west, beyond MacArthur Boulevard, are commercial properties including the Bayview Campground, Brookside Golf Association, Atlantic Subaru, and several office buildings.

Pursuant to 310 CMR 7.00 Air Pollution Control Section 7.10: *U Noise*, MassDEP regulates all sounds emanating from a solid waste facility operation. Should the Bourne Board of Health have any noise-related concerns, MassDEP recommends that the Bourne Board of Health consider requiring the Applicant to perform periodic sound surveys as a condition of any Site Assignment approval and require a pre-submittal of the sound survey protocol for review and approval by the Bourne Board of Health and MassDEP. Similarly, should the Bourne Board of Health have any odor-related concerns, MassDEP recommends that the Bourne Board of Health consider requiring the Applicant to perform periodic odor surveys as a condition of any Site Assignment approval and require a pre-submittal of the odor survey protocol for review and approval by the Bourne Board of Health and MassDEP.

8. **Criterion at 310 CMR 16.40(4)(h): Size of Facility:** *No site shall be determined to be suitable or be assigned as a solid waste management facility if the size of the proposed site is insufficient to properly operate and maintain the proposed facility. The minimum distance between the waste handling area or deposition area and the property boundary*

for the facility shall be 100 feet, provided that a shorter distance may be suitable for that portion of the waste handling or deposition area which borders a separate solid waste management facility.

The Applicant stated the size of the Site is of adequate size to provide sufficient space for the proposed operations and that there is adequate separation distance to meet the setbacks required by the Site Assignment Regulations. (Record No. 1)

The Applicant submitted a Land Use Plan (Record No. 54) depicting that the proposed limit of the Phase 9 waste deposition area is within the limits approved in the current site assignment and will be further setback from the property line and sensitive receptors as the active area will be closer to the center of the Landfill property. The proposed Phase 9 vertical landfill expansion footprint is approximately 28.08 acres (Record No. 59) and lies entirely within the existing landfill areas located on the 74-acre site-assigned parcel of land. For the 25-acre parcel that is currently site assigned for solid waste handling, the Applicant is proposing to modify the existing site assignment to allow landfilling on approximately 17.34 acres (Record No. 55) of the 25-acre parcel. The Land Use Plan (Record No. 54) shows that the proposed Phase 7 and Phase 8 waste deposition area will not be within 100 feet of the southern, eastern, or western property line of the 25-acre parcel. The northern boundary of the 25-acre parcel is adjacent to the existing landfill. MassDEP notes that since Phase 7 and Phase 8 will be an expansion of the existing landfill, there is no requirement for a 100-foot setback from the northern property line. The existing Bourne Landfill has a footprint of approximately 56.86 acres (Record No. 59). Therefore, the proposed modified Site Assignment for the 99-acre Facility consists of approximately 74.2 acres of waste deposition area.

MassDEP's Finding regarding Phase 9 (74-acre parcel):

MassDEP has determined that the proposed Phase 9 vertical expansion complies with the requirements of 310 CMR 16.40(4)(h) Size of Facility, and therefore, the Site **meets** this criterion.

MassDEP's Finding regarding Phase 7 and Phase 8 (25-acre parcel):

MassDEP has determined that although specific design information for the waste deposition area or any proposed leachate containment structures has not been included in the Application, sufficient information has been submitted to determine that the site can be designed to meet this requirement. Should the Bourne Board of Health grant site assignment, the Applicant will be required to submit an Authorization to Construct application to MassDEP. Prior to MassDEP approval, the application for Phase 7 and Phase 8 will need to definitively show, at a larger scale, that the waste deposition area perimeter for Phase 7 and Phase 8 is a minimum of 100 feet from the property boundary and that any proposed leachate containment structures are located a minimum of 100 feet from the property boundary.

MassDEP has determined that the proposed Phase 7 and Phase 8 horizontal expansion complies with the requirements of 310 CMR 16.40(4)(h) Size of Facility, and therefore, the Site **meets** this criterion.

9. **Criterion at 310 CMR 16.40(4)(i): Areas Previously Used for Solid Waste Disposal:** *Where an area adjacent to the site of a proposed facility has been previously used for solid waste disposal the following factors shall be considered by the Department in determining whether a site is suitable and by the board of health in determining whether to assign a site:*

   1. the nature and extent to which the prior solid waste activities on the adjacent site currently adversely impact or threaten to adversely impact the proposed site;

   2. the nature and extent to which the proposed site may impact the site previously used for solid waste disposal; and

   3. the nature and extent to which the combined impacts of the proposed site and the previously used adjacent site adversely impact on the public health, safety and the environment; taking into consideration:

      a. whether the proposed site is an expansion of or constitutes beneficial integration of the solid waste activities with the adjacent site;

      b. whether the proposed facility is related to the closure and/or remedial activities at the adjacent site; and

      c. the extent to which the design and operation of the proposed facility will mitigate existing or potential impacts from the adjacent site.

The Applicant stated that the modification of the existing site assignment is to allow landfilling to occur within Phase 9, which is within the area that is currently site assigned for landfilling and within Phase 7 and Phase 8 located on the 25-acre parcel that is currently site assigned for solid waste handling.

The Applicant submitted a document titled "Interim Risk Evaluation and Cumulative Impact Assessment ("CIA") of the Proposed Phased Landfill Development of the Town of Bourne Integrated Solid Waste Management Facility" dated May 2003 (Record No. 12) and presented an updated landfill gas emissions impact analysis on sensitive receptors, dated July 20, 2021, prepared by Sanborn Head Associates, Inc. (Record No. 34). The current waste acceptance at the Facility constitutes approximately 86 percent of its annual tonnage of 219,000 in the form of municipal combustor ash ("MCA") from SEMASS waste-to-energy facility. At the time of this Application submittal the Applicant's 10-year contract to accept MCA from SEMASS was to terminate at the end of 2021. The Applicant stated they intended to extend the contract, which is to continue accepting up to 189,000 tons per year (tpy) of MCA and 30,000 tpy of biodegradable MSW from Bourne and Falmouth. In the April 24, 2020 of Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Notice of Project Change, the Certificate stated that if the 10-year contract is not extended, the Applicant will return to accepting up to 219,000 tpy of biodegradable MSW. The 2003 CIA, as amended, examines potential health risk to potentially sensitive individuals living, working, or visiting in the vicinity of the ISWM Facility, which includes the areas for the proposed modifications, and taking into considerations the return to accepting up all biodegradable MSW. In addition to landfill gas composed of mostly methane and carbon dioxide as well as trace levels of a variety of volatile organic compounds and reduced sulfur compounds such as hydrogen sulfide (H_2S), the CIA includes evaluation of criteria pollutants of National Ambient Air Quality Standards ("NAAQS"). The 2003 CIA identified the key pollutant as H_2S. In 2009,

Cambridge Environmental conducted an expanded evaluation of H_2S (Record No. 35), which resulted in the determination that there were no unacceptable health risks due to fugitive emissions of landfill gas from the ISWM facility.

The 2003 and 2009 evaluation has identified receptor locations within the vicinity of the landfill, mainly located along the state Route 28, which focused on a line of commercial receptors along the eastern side of Route 28 and a line of residential receptors located approximately 1,350 feet from the western edge of the landfill. The updated evaluation identified a few residences, the nearest being a caretaker's apartment at the Bay View Campgrounds, greater than 1,000 feet from the landfill. The evaluation showed that the estimated concentrations are below the MassDEP's threshold for ambient air limit, hence no risks of adverse health effects to nearby residents. Additional assessment for short term exposure of H_2S at the campground is conducted and showed that the highest modeled 24-hour average of H_2S concentrations for worst case scenario is 1.05 microgram per cubic meter ($\mu g/m^3$), which is below the Minimum Risk Level of 98 $\mu g/m^3$ established by the Agency of Toxic Substances and Disease Registry of the United States Department of Health and Human Services.

In addition, the Applicant presented an evaluation of any potential emission increase for six primary pollutants established in the NAAQS: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (particulate 10 micrometers or less (PM10) and particulate matter 2.5 micrometers or less (PM2.5)), and sulfur dioxide. The Applicant utilized air dispersion modeling to evaluate impact on sensitive receptors identified in the Air Quality Modeling Protocol as approved by MassDEP. The modeling analysis was based on landfill gas quantities at 50% methane content. The result showed a peak landfill gas emission of 1300 scfm, which is based on the current acceptance of mostly ash residue from SEMASS and a small quantity of MSW. The evaluation calculated the maximum air emission impact associated with the proposed modifications, taking into consideration the return to accepting up all biodegradable MSW. The resulting emissions were added to the ambient background levels as established by the Massachusetts Ambient Air Monitoring Network. As a result, the calculation showed emissions from the proposed modification under the maximum landfill gas generation scenario are below the NAAQS emissions standards for each criteria pollutant.

MassDEP approved the permit application for a BWP SW 23 Comprehensive Site Assessment ("CSA") to the Town of Bourne – Department of Integrated Solid Waste Management on June 5, 2017 (Record No. 49). Based upon a review of the CSA permit application MassDEP made the following "Finding" in the June 5, 2017 permit decision: Contamination beyond the point of compliance is limited to groundwater. Groundwater contamination is present at or beyond the point of compliance above GW-1 concentrations and background levels. A condition of "no significant risk" for groundwater exposure pathway has not been achieved. Groundwater has not been cleaned up to a level that results in "no significant risk".

Based on information provided during the assessment process, municipally supplied public water is available and there are currently no potable private wells located within the

confines of the groundwater plume or downgradient of the plume. However, the current groundwater exposure pathway has been eliminated through institutional controls. The previous capping of the unlined Landfill and ongoing landfill reclamation of unlined phase 1D has resulted in decreased concentrations of contaminants within the aquifer. However, based on the environmental monitoring data there still is a potential future health risk of groundwater being used as a potable water supply downgradient of the Bourne Landfill. MassDEP recommends that private wells not be installed immediately adjacent to and/or downgradient of any unlined landfills. MassDEP recommended the Town continue to implement institutional controls as a form of risk management.

The Applicant stated that the Town of Bourne has put in place institutional controls (i.e., board of health regulation) to prevent future installation of private and public wells from being located downgradient of the landfill and that drinking water from the Bourne Water District distribution system is available in all areas hydraulically downgradient of the landfill. The Town of Bourne is prohibiting installation of any private or public wells located hydraulically downgradient of the Facility based upon particle tracking maps created by the United States Geological Survey ("USGS").

MassDEP reviewed the BWP SW 25 Corrective Action Design ("CAD") for Phase 4, Stage 2 and Phase 5 landfill areas for the Applicant, which was approved on February 18, 2021 (Record No. 52). MassDEP has approved the proposed the final closure construction of the Phase 4, Stage 2 and Phase 5 landfill areas as identified in Figure 5 - Initial Construction Phase Plan (Record No. 21), which have been used for recent solid waste disposal. The Applicant has indicated that the final capping of the southern slope and top plateau of the Phase 4, Stage 2 Landfill area and the top plateau of the Phase 5 is postponed for closure until the proposed Phase 9 overfill is completed. The Applicant indicated that the completion of the Phase 9 overfill will require sequentially removing stages of the existing final caps of the Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1 landfills.

The Applicant addressed potential impact from the proposed Phase 9 vertical expansion and the proposed build out of Phases 7 and 8 in greater detail during MEPA review process of the Single Supplemental Environmental Impact Report ("SSEIR") (Record No. 46). MassDEP has reviewed the SSEIR Certificate dated December 30, 2020, which stated that potential impact from the landfill to the environment has been monitored for several decades by a groundwater and soil gas monitoring program. The monitoring program has consisted of quarterly sampling that began in the 1990s. The Applicant is required to include the placement of additional groundwater and gas monitoring wells along the facility perimeter that coincides with the Phases 7 and 8 build out. The SSEIR Certificate also stated that the Applicant provided information on the existing monitoring wells and leachate and landfill gas collection systems and that the systems will be expanded and maintained for the proposed expansions within Phase 7-9.

MassDEP's Finding:

MassDEP reviewed the proposed Phase 9 vertical expansion and the Phase 7 and Phase 8 horizontal expansion onto the 25-acre parcel currently site assigned for solid waste handling with respect to the considerations listed at 310 CMR 16.40(4)(i) Areas

Previously Used for Solid Waste Disposal. Based on the review of analysis presented in the Application, CSA, SSEIR and the CAD, MassDEP has determined that the combined impacts of the existing Landfill and the proposed modifications will **not** adversely impact on the public health, safety and the environment.

MassDEP recognizes that the proposed Phase 9 vertical expansion will disturb areas previously used for waste disposal (Phase 2, Phase 2A/3A, Phase 3 and Phase 4, Stage 1). Pursuant to 310 CMR 16.40(1)(c)1, MassDEP evaluated the Application with the assumption that the proposed facility would be designed and constructed to meet all relevant state and federal statutory, regulatory and policy requirements should the Bourne Board of Health grant a site assignment for the proposed facility. MassDEP will require the Applicant to provide additional information and design analysis during the Authorization to Construct permit application for Phase 9 vertical expansion that addresses the disturbance of landfill areas cited herein.

Therefore, MassDEP has determined that the Site including the Phase 7 and Phase 8 horizontal expansion and the Phase 9 vertical expansion, **meets** this criterion, 310 CMR 16.40(4)(i).

10. **Criterion at 310 CMR 16.40(4)(j): Existing Facilities:** *In evaluating proposed sites for new solid waste management facilities the Department and the board of health shall give preferential consideration to sites located in municipalities in which no existing landfill or solid waste combustion facilities are located. This preference shall be applied only to new facilities which will not be for the exclusive use of the municipality in which the site is located. The Department and the board of health shall weigh such preference against the following considerations when the proposed site is located in a community with an existing disposal facility:*
    1. *the extent to which the municipality's or region's solid waste needs will be met by the proposed facility; and*
    2. *the extent to which the proposed facility incorporates recycling, composting or waste diversion activities.*

The Applicant stated that the proposed expansion of landfill operations into Phase 7, Phase 8 and Phase 9 does not constitute a new facility. The Applicant has identified four landfills in Bourne based on the list provided by the MassDEP on its website. Out of the four identified landfills in Bourne, the Applicant identified the inactive landfills as follows: Bourne Dump (SL0036.0020) - Mac Arthur Boulevard; Nightingale Stump Landfill (SD0036.001) - 260 MacArthur Boulevard, and Otis Air Force Base Landfill (SL 0036.0004) - Connery Road. The Applicant stated that the only active landfill is Bourne Landfill (SL 0036.004) - 201 Mac Arthur Boulevard, which is the subject location of the application. The Applicant stated that the application seeks to modify the existing 74-acre landfilling site assignment for the operation of Phase 9, and on the 25-acre parcel to allow landfilling on the existing site assignment for solid waste handling facility. The Applicant stated that the Town of Bourne Integrated Solid Waste Management Facility currently provides services to several municipalities on Cape Cod and the South Shore for management of Construction & Demolition (C&D) and recyclables. The Applicant stated

that the vast majority of the waste that is disposed in the Landfill (87%) is ash from SEMASS waste to energy facility which provides disposal services for many communities on Cape Cod, southeastern Massachusetts and beyond. (Record No. 1)

MassDEP's Finding:
MassDEP has determined that the proposed landfill expansion is not a new solid waste management facility and according to 310 CMR 16.40(4)(j), the proposed Landfill expansion should **not** be given preferential consideration.

11. **Criterion at 310 CMR 16.40(4)(k): Consideration of Other Sources of Contamination or Pollution:** *Pursuant to 310 CMR 16.40(4)(k), MassDEP shall consider whether the projected impacts of the proposed facility pose a threat to public health, safety or the environment, taking into consideration the impacts of existing sources of pollution or contamination as defined by the Department, and whether the proposed facility will mitigate or reduce those sources of pollution or contamination.*

The Applicant submitted a report titled "Interim Risk Evaluation and Cumulative Impact Assessment of the Proposed Phased Landfill Development of the Town of Bourne Integrated Solid Waste Management Facility" (CIA) which is included in the Application as Record No. 12. The Applicant stated that the CIA examined the potential impact of the future full build out of the facility, including Phases 7, 8 and 9, in conjunction with other local potential sources of contamination or pollution. The Applicant further stated that the conclusion of the CIA is that there will be no significant impacts to receptors in the vicinity of the site and that employing Best Management Practices will mitigate any potential impacts from the facility. (Record No. 1)

MassDEP reviewed the final Comprehensive Site Assessment (CSA) approval, dated June 5, 2017, for the Town of Bourne – Department of Integrated Solid Waste Management (Record No. 49). The CSA evaluated the impacts of the Landfill and the former Department of Public Works facility on the environment by characterizing the nature and extent of the contamination and assessing the associated risk to public safety, health, welfare and the environment. As part of the CSA, MassDEP evaluated the nature and extent of contamination within the facility boundaries and the area hydraulically downgradient of the Landfill and identified the primary sources of contaminants detected in groundwater samples as:

- the unlined landfill (Phase 1A, 1B and 1C);
- the former septage lagoons; and
- the Department of Public Work (DPW) facility.

For the purposes of this criterion, the sources identified above shall be considered the "existing sources of contamination or pollution." Leachate from the unlined landfill has degraded water quality downgradient of the Landfill. Unlined landfill areas Phase 1A, 1B and 1C have been capped and capping of the unlined landfills will continue to reduce leachate generation and improve groundwater quality downgradient. Unlined landfill area Phase 1D has been completely removed. The former wastewater lagoons were located at

the northeastern of the corner of the property, which dumping of septage ceased in 1991 and the lagoons have been decommissioned by removing the accumulated sludge and underlying soils. All underground storage tanks (USTs), which were part of the DPW facility, have been removed from the site and five floor drains in the DPW garage were connected to an underground tight tank with oil water separator. The CSA concluded that contamination beyond the point of compliance is limited to groundwater and that groundwater has not been cleaned up to a level that results in "no significant risk". (Record No. 49)

MassDEP has determined that the risks associated with groundwater contamination have been mitigated through capping of the unlined landfill, continued collection and treatment of landfill gas, closure of the septage lagoons, closure and removal of USTs and floor drains, and by the institutional controls put in place by the Town of Bourne. Fifty-one groundwater monitoring wells have been installed on-site and off-site to monitor the entire Facility and determine the vertical and horizontal extent of the impacts of contamination detected in groundwater samples. The Town of Bourne has put in place institutional controls to prevent future installation of private and public wells from being located downgradient of the landfill. Water for human consumption is available in all areas hydraulically downgradient of the landfill from the Bourne Water District distribution system. Additionally, the Town of Bourne has amended its well regulations by prohibiting installation of any private or public well which is hydraulically downgradient of the Facility based upon particle tracking maps created by the USGS. The effectiveness of the implemented corrective actions is determined by on-going environmental monitoring including groundwater, subsurface soil-gas, and landfill gas. The Applicant stated that the monitoring record shows monitored groundwater quality has improved.

It should be noted that based on the information provided in the Application and MassDEP's expertise and knowledge, MassDEP has concluded that the groundwater protection system proposed in the Application for Phase 7, Phase 8, and Phase 9 complies with current regulatory requirements for such systems and will contain features and elements designed to prevent the discharge of leachate into groundwater. MassDEP also notes that the requirement for a double composite liner system with leak detection in 310 CMR 19.110 is stricter than the federal requirement for solid waste landfills and essentially equivalent to the federal requirements for a hazardous waste landfill. MassDEP also notes that construction of Phase 7, Phase 8, and Phase 9 must be approved through the MassDEP solid waste permitting process, which will involve an in-depth evaluation by MassDEP to ensure compliance with MassDEP regulations and guidance documents.

MassDEP's Finding:

MassDEP has determined that the projected impacts of the Phase 7, Phase 8, and Phase 9 do not pose a threat to public health, safety or the environment, taking into consideration the impacts of existing sources of pollution or contamination, and therefore, the Site **meets** this criterion.

12. **Criterion at 310 CMR 16.40(4)(l): Regional Participation:** *The Department and the board of health shall give preferential consideration to sites located in municipalities not*

already participating in a regional disposal facility. The Department and the board of health shall weigh such preference against the following considerations when the proposed site is located in a community participating in a regional disposal facility:

1) *the extent to which the proposed facility meets the municipality's and the region's solid waste management needs; and*
2) *the extent to which the proposed facility incorporates recycling, composting, or waste diversion activities.*

The Applicant stated that the proposed facility contributes to the Town of Bourne and the region's ability to provide an economic and efficient means for the private and public sectors to dispose and recycle solid waste. The Applicant stated that the proposed Phase 7, Phase 8 and Phase 9 landfill expansions are intended for disposal of residual materials resulting from recycling operations, municipal solid waste collection and ash resulting from combustion of MSW and is not for the disposal of C&D. (Record No. 1)

MassDEP's Finding:

The Town of Bourne hosts the Bourne Integrated Solid Waste Management Facility landfill, which is a regional disposal facility. Accordingly, MassDEP is **not** giving preferential consideration to the proposed project. MassDEP acknowledges that the proposed facility will provide for handling and disposal of waste from a regional perspective and will incorporate recycling efforts.

C. GENERAL SITE SUITABILITY CRITERIA
CRITERIA FOR A COMBUSTION FACILITY OR LANDFILL
(310 CMR 16.40(5))

1. **Criterion at 310 CMR 16.40(5): Promotion of Integrated Solid Waste Management**: *In determining whether a site is suitable for a combustion facility or a landfill, MassDEP shall consider the potential yearly and lifetime capacity created by the proposed site use in relation to the reasonably anticipated disposal capacity requirements and reduction/diversion goals of the Commonwealth and the geographic area which the site will serve. MassDEP shall also consider the extent to which the proposed use of the site: will provide or afford feasible means to maximize diversion or processing of the anticipated waste stream; will contribute to a statewide integrated solid waste management system; and will directly incorporate recycling and composting techniques or will otherwise be integrated into recycling and composting activities for the geographic area that the site will serve. MassDEP shall also review the proposed site to determine if it is also suitable for a recycling or composting facility either in conjunction with or instead of the proposed facility. Site assignment applications which incorporate significant recycling or composting uses shall receive preferred consideration.*

   The Applicant stated that the proposed Phase 9 vertical expansion would increase the maximum height of the landfill from elevation 185-ft MSL to elevation 225-ft MSL and the proposed Phase 7 and Phase 8 horizontal expansion will provide approximately of 17.34 acres of new landfill cells. (Records No. 1 & 31) The Applicant stated that Phase 7, Phase 8, and Phase 9 would provide approximately 5,175,000 cubic yards of disposal capacity and would extend the life of the landfill until approximately year 2040.

   The Applicant stated that the facility will provide much needed local municipal waste combustor ash disposal capacity at a time when another in-state landfill that accepts combustor ash is scheduled to close by the end of 2021.

   The Applicant stated that the site has an existing recycling and composting facility. (Record No. 1)

   MassDEP's Finding:

   MassDEP has determined that the expanded Landfill will be a regional landfill, not for the exclusive use of the Town of Bourne and will address disposal capacity requirements and reduction/diversion goals in the region and in the Commonwealth. MassDEP has determined that the Facility already includes recycling and composting activities. Therefore, MassDEP has determined that the Site **should** be given preferential consideration on this basis.

III. DETERMINATION

The Massachusetts Department of Environmental Protection, Solid Waste Management Section has determined that the Application adequately satisfies and complies with the site suitability criteria established in 310 CMR 16.40(3) Facility Specific Site Suitability Criteria and (4) General Site Suitability Criteria.

Pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 150A, and 150A1/2 as amended, and 310 CMR 16.00, "*Site Assignment Regulations for Solid Waste Facilities*", and with due consideration to the above, the MassDEP has determined the site, as referenced in the Application, to be suitable for the for the purpose of establishing an expanded municipal solid waste disposal facility.

Be advised that should the Bourne Board of Health grant Site Assignment, additional permits are required from MassDEP prior to facility construction and operation.

IV. RECORD

The Record for Site Suitability Report #036-001-C for modification of the site assignment for the Town of Bourne Integrated Solid Waste Management Facility located at 201 MacArthur Boulevard, Bourne, Massachusetts, consists of the following:

1. **SITEC Environmental** – "Site Suitability Report for a Major Modification", Solid Waste Application BWP SW 38 (the "Application"), Application No. 21-SW38-0001-APP, dated March 29, 2021, submitted on behalf of Town of Bourne Department of Integrated Solid Waste Management, received by the MassDEP on March 29, 2021 ("hereinafter referred to as the "Application").

2. **SITEC Environmental** – Certificate of service of copies, pursuant to 310 CMR 16.08(3), submitted within the Application (Record No. 1).

3. **SITEC Environmental** – Application Form - BWP SW 38: Site Suitability for a Major Modification to an Existing Site Assignment, submitted within the Application (Record No. 1)

4. **Town of Bourne Board of Health** – Existing Site Assignments, submitted within the Application (Record No. 1) as Attachment 2.

5. **SITEC Environmental** – "Plans and Figures", initially dated March 29, 2021, submitted within the Application (Record No. 1) as Attachment 3 (hereinafter referred to as "initial Attachment 3"). The initial Attachment 3 is superseded by the revised Attachment 3 (Record No. 16).

6. **Town of Bourne Board of Health** – Correspondence to Town of Bourne ISWM Department regarding an alternative Technical Fee Payment, dated March 11, 2021, submitted with the Application (Record No. 1) as Attachment 4.

7. **Executive Office of Energy and Environmental Affairs ("EEA")** – Certificate of the Secretary of Energy and Environmental Affairs, dated December 30, 2020, submitted within the Application (Record No. 1) as Attachment 5.

8. **SITEC Environmental** – "Water Resources Correspondence", submitted within the Application (Record No. 1) as Attachment 6.

9. **United States Department of Agriculture** – Custom Soil Resources Report, dated May 2, 2016, submitted within the Application (Record No. 1) as Attachment 7.

10. **LEC Environmental Consultants, Inc.** – Site Specific Soil Survey Report, dated August 9, 2018, submitted within the Application (Record No. 1) as Attachment 8.

11. **TEPP LCC** – "Traffic Assessment Memorandum", dated July 16, 2020, submitted within the Application (Record No. 1) as Attachment 9.

12. **Cambridge Environmental Inc.** – "Interim Risk Evaluation and Cumulative Impact Assessment of the Proposed Phased Landfill Development of the Town of Bourne Integrated Solid Waste Management Facility", dated May 19, 2003, submitted within the Application (Record No. 1) as Attachment 10.

13. **Commonwealth of Massachusetts, Division of Fisheries and Wildlife** – Correspondence regarding the Bourne Landfill expansion, various dates, submitted within the Application (Record No. 1) as Attachment 11.

14. **Cavanaugh Tocci Associates, Inc.** – Sound Level Survey, dated September 7, 2001, submitted within the Application (Record No. 1) as Attachment 12.

15. **MassDEP** – April 20, 2021, Determination of Administrative Incompleteness and Request for Information.

16. **SITEC Environmental** – "Plans and Figures", revised April 20, 2021, submitted in response to MassDEP's Determination of Administrative Incompleteness and Request for Information (hereinafter referred to as "revised Attachment 3").

17. **SITEC Environmental** – **"**Locus Plan", submitted within revised Attachment 3 (Record No. 16) as Figure 1.

18. **SITEC Environmental** – "Property Line Plan", dated April 17, 2017, submitted within revised Attachment 3 (Record No. 16) as Figure 2.

19. **SITEC Environmental** – "Existing Conditions Site Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 3.

20. **SITEC Environmental** – "Schematic Site Buildout Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 4. This record is superseded by Record No. 56.

21. **SITEC Environmental** – "Initial Construction Phase Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 5.

22. **SITEC Environmental** – "Intermediate Construction Phase Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 6.

23. **SITEC Environmental** – "Conceptual Site Buildout Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 7.

24. **SITEC Environmental** – "Site Buildout Profiles", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 8.

25. **SITEC Environmental** – "Existing Environmental Monitoring Systems", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 9.

26. **SITEC Environmental** – "Groundwater Contour Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 10.

27. **SITEC Environmental** – "USACE Groundwater Flow and Contaminant Plume", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 11.

28. **SITEC Environmental** – "Water Resources Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 12. This record is superseded by Record No. 53.

29. **SITEC Environmental** – "Land Use Plan", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 13. This record is superseded by Record No. 54.

30. **SITEC Environmental** – "MassDEP Water Resources Map", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 14.

31. **SITEC Environmental** – "Proposed Site Assignment Modifications", revised April 20, 2021, submitted within revised Attachment 3 (Record No. 16) as Figure 15. This record is superseded by Record No. 57.

32. **MassDEP** – Determination of Administrative Completeness, dated May 12, 2021.

33. **MassDEP** – Request for Information, dated May 25, 2021.

34. **SITEC Environmental** – "Response to Request for Additional Information Volume 1", submitted August 4, 2021, in response to MassDEP's May 25, 2021, Request for Information.

35. **SITEC Environmental** – "Response to Request for Additional Information Volume 2 – Supporting Attachments", submitted August 4, 2021, in response to MassDEP's May 25, 2021 Request for Information.

36. **MassDEP** – August 16, 2021 email to Sitec Environmental regarding Environmental Justice.

37. **SITEC Environmental** – September 24, 2021, Proof of Public Notice, consisting of a copy of the Public Notice; proof of public notice as published in the MEPA

Monitor on June 9,2021; newspaper clippings; and "green card" proof of certified mailings to abutters.

38. **SITEC Environmental** – October 12, 2021, supplemental information to Proof of Public Notice, consisting of "green card" proof of certified mailings to the parties listed at 310 CMR 16.08(2).

39. **MassDEP** – October 13, 2021 outreach email to various parties sent as part of MassDEP's public involvement plan in accordance with EEA's Environmental Justice Policy.

40. **MassDEP** – October 13, 2021, "Factsheet" on the proposed Bourne Landfill expansion, prepared by MassDEP as part of MassDEP's public involvement plan in accordance with EEA's Environmental Justice Policy.

41. **Public Comments** – received during Public Comment Period that commenced on October 13, 2021 and ended on November 3, 2021. All public comments received by MassDEP during the Public Comment period were scanned and sent via e-mail to the Applicant.

42. **MassDEP** – November 10, 2021, Request for Additional Information, requesting a response to public comments.

43. **SITEC Environmental** – November 22, 2021, Response to Public Comments.

44. **Town of Bourne – Department of Integrated Solid Waste Management** – February 18, 2020, Expanded Notice of Project Change.

45. **Executive Office of Energy and Environmental Affairs ("EEA")** – Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Notice of Project Change, dated April 24, 2020.

46. **Town of Bourne – Department of Integrated Solid Waste Management** – November 13, 2020, Single Supplemental Environmental Impact Report, Part 1 & 2.

47. **Cape Cod Commission** – Development of Regional Impact Decision, dated September 23, 2021.

48. **MassDEP** – May 19, 2021, email correspondence regarding proposed drinking water sources.

49. **MassDEP** – June 5, 2017 – Final Permit Approval with Condition - Application for BWP SW 23 Comprehensive Site Assessment, Transmittal #104699.

50. **MassDEP** – March 28, 2013 – Air Quality Plan Approval – Transmittal No. X241484 – Application No. SE-12-011.

51. **US EPA** – Massachusetts Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants – https://www3.epa.gov/airquality/greenbook/anayo_ma.html - printout dated 12/3/21, 10:22 AM.

52. **MassDEP** – February 18, 2021 – Corrective Action Design – Phase 4, Stage 2 and Phase 5 – Application No. 20-SW25-0001-APP – Authorization No. SW25-0000006.

53. **SITEC Environmental** – "Water Resources Plan", revised June 1, 2021, submitted within Record 34 in Attachment 7.

54. **SITEC Environmental** – "Land Use Plan", revised June 1, 2021, submitted within Record 34 in Attachment 7.

55. **SITEC Environmental** – Supplemental Information submitted to MassDEP via email on December 9, 2021.

56. **SITEC Environmental** – "Schematic Site Buildout Plan", revised December 9, 2021, submitted within Record No. 55. This plan depicts revisions to the limit of "farmland of statewide importance" and the proposed limit of the modified site assignment for Phase 7 and Phase 8.

57. **SITEC Environmental** – "Proposed Site Assignment Modifications", revised December 9, 2021, submitted within Record No. 55. This plan depicts revisions to the limit of "farmland of statewide importance" and the proposed limit of the modified site assignment for Phase 7 and Phase 8.

58. **MassDEP** – April 9, 2020, Comments on the Expanded Notice of Project Change for the Bourne Integrated Solid Waste Management Facility.

59. **SITEC Environmental** – December 9, 2021, email to MassDEP confirming the footprint, in acres, of the Phase 9 vertical expansion.

60. **SITEC Environmental** – December 11, 2021, email to MassDEP regarding criteria at 310 CMR 16.40(3)(a)(7): Zone of Contribution or Recharge Area.

61. **SITEC Environmental** – December 11, 2021, Water Resources Districts and Zone II Map for Town of Bourne.

62. **Cambridge Environmental Inc.** – "Interim Risk Evaluation and Cumulative Impact Assessment of the Proposed Phased Landfill Development of the Town of

Bourne Integrated Solid Waste Management Facility", dated May 2003, received by MassDEP on May 20, 2003.

63. **CGK** – "Final Comprehensive Site Assessment Report – Integrated Solid Waste Management Facility, Bourne, Massachusetts." – dated December 1999.