

**From:** [Creighton, Matthew T.](#)  
**To:** [Czepiga, Page \(EEA\)](#); [Kim, Tori \(EEA\)](#)  
**Subject:** Bourne 10 Year  
**Date:** Monday, June 29, 2020 3:13:58 PM  
**Attachments:** [EOEEA Letter Advisory Opinion MEPA Review.pdf](#)

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Just wanted to forward the original MEPA letter. We've made a few changes once we filed the NOI with Conservation. Not sure if you need it or if it helps?

Best,

Matt

**Matthew Creighton, PWS, MVP | Senior Associate / Coastal Scientist  
Manager of Ecological Services – West Yarmouth, MA**

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**BSC Group**

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January 2, 2019

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Secretary of Energy and Environmental Affairs  
Executive Office of Energy & Environmental Affairs (EEA)  
Attn: MEPA Office  
100 Cambridge Street, Suite 900  
Boston, MA 02114

[www.bscgroup.com](http://www.bscgroup.com)

RE: Town of Bourne Ten Year Comprehensive Dredge Report

Dear MEPA Reviewer,

The Town of Bourne Department of Natural Resources is filing this “Ten Year Comprehensive Dredging and Beach Nourishment Plan” to maintenance dredge approximately 71,383 cubic yards (cy) of sediment from thirteen (13) previously permitted dredged sites including the following: Little Buttermilk Bay, Buttermilk Bay, Gibbs Narrows, Cohasset Narrows, Phinney’s Harbor, Little Bay, Pocasset River, Pocasset Harbor, Barlow’s Landing, Red Brook Harbor, Hen Cove, and Hospital Cove. Beach nourishment areas consist of seven (7) previously permitted sites including the following: Electric Avenue Beach, Grey Gables Beach, Monument Beach, Shore Road (Dewatering sites), Bassett Island Disposal Site, Hen Cove Beach, and Barlow’s Landing Beach. Additionally, the three (3) following locations are proposed as new (previously unpermitted) beach nourishment sites: Sagamore Beach, Monks Cove/ Monks Park Beach, and Squeteague Harbor Beach. All of the above-mentioned sites are within the Town of Bourne.

Ten Year Comprehensive Dredging and Beach Nourishment Plan History

The Town of Bourne has conducted maintenance dredging of their waterways under various Waterways Permits (Chapter 91), Water Quality Certifications (401-WQ), Orders of Conditions (OOC), and United States Army Corps of Engineers 404 Permits (USACOE-404). All dredge sites have been previously permitted and include only maintenance dredging. Although the Town of Bourne dredging and sand management is “manageable”, the Town of Bourne Natural Resources Department desires to have a long-term master plan for dredging, dredging management, and beach nourishment.

The Town of Bourne Conservation Commission is currently working with the Department of Natural Resources to revise their current dredge/ beach nourishment plan and upgrade it to a Comprehensive Dredge Permit. The objective of the ten year comprehensive permit is to provide flexibility for the Town to manage the dredging/ nourishment activities.

There are thirteen (13) areas to be maintenance dredged, however not all sites have an immediate need for dredging. In preparation for the proposed project, BSC hydro-surveyed all sites not under a current dredging permit, as requested by DEP Water Quality Certification Program. This survey was to determine the current need for dredging in the areas not recently dredged and to conduct sediment sampling for any areas not under a

Engineers  
Environmental Scientists  
GIS Consultants  
Landscape Architects  
Planners  
Surveyors

current permit, when volumes exceed 100 cy. The volumes listed in Table III below for Little Bay, Pocasset River, Pocasset Harbor, Barlow’s Landing, and Hen Cove are the approved dredge volumes and were not re-surveyed/sampled as part of this permit process. Therefore, the associated dredge volumes for these locations are based on prior permits, and no borings were collected. Hen Cove and Barlow’s Landing have been recently dredged, with Pocasset River planned for spring 2019. All other volumes listed in Table I below are based on current dredge needs and have expired dredge permits. Any areas with expired dredge permits have been resampled, as needed and noted on the site plans. Note: A sediment sample was not collected from Red Brook Harbor due to naturally relocated sediment out of the channel. Boring numbers for sample sites are also listed in Table I, where needed.

**TABLE I - PROPOSED DREDGING VOLUMES:**

<b>Location</b>	<b>Dredge (C.Y.)</b>	<b>1’ Overdredge (C.Y.)</b>	<b>Total (C.Y.)</b>	<b>Boring #s</b>
Buttermilk Bay	42	89	131	N/A
Grey Gables	4,860	4,531	9,391	GG 1- GG 9
Phinneys Harbor	5,782	460	6,242	PH1-PH6
Little Bay	10,351	7,718	18,069	N/A
Pocasset River	4,695	4,425	9,120	N/A
Pocasset Harbor	800	1,800	2,600	N/A
Barlow’s Landing	2,229	1,359	3,588	N/A
Hen’s Cove (Channel)	3,228	5,512	8,740	N/A
Hen’s Cove (Anchorage)	5,384	3,326	8,710	N/A
Hospital Cove	4,195	597	4,792	HC3-HC5

All dredged material will be transported to approved dewatering basins. Once dewatered, the Town of Bourne proposes to continue use of the approved beach nourishment sites listed in Table IV below. Some of these sites (Barlow’s Landing Beach, Hens Cove Beach, and Monument Beach) have been nourished within the last few years and would require a re-survey to determine the appropriate volume of material that could be placed prior to dredging. As such, these three sites have listed the original approved volume based on the original beach profiles for each site. If excess sediment is available for beach nourishment, then private association beaches may purchase it for use to lower the dredge costs for the Town, or the Town may gift/sell it to the Town of Sandwich for beach nourishment purposes. Any sediment not suitable for nourishment will be trucked to the Town of Bourne landfill to be used as daily cover.

All sites will be dredged using the Barnstable County hydraulic cutter-head dredge with the exception of the Pocasset River, which may use mechanical or hydraulic dredging depending on the dewatering basin used. Hydraulic dredging is preferred over mechanical dredging when feasible as it can be conducted using the County Dredge at a significant cost savings to the Town. However, hydraulic dredging uses water to create a slurry with the sediment to be

dewatered, which creates a need for a larger dewatering basin. As such, the Town is requesting an option to mechanical dredge the Pocasset River to prevent potential impacts from silt entering the Pocasset River ACEC. Currently the only place requesting an option for mechanical dredging is the Pocasset River, if the material can't be pumped to Monument Beach for dewatering.

**TABLE IV – BEACH NOURISHMENT SITES**

<b>Location</b>	<b>Nourishment (C.Y.)</b>
Electric Ave. Beach	400 ±
Gray Gables Beach	2,500 ±
Monument Beach	16,100 ±
Barlow's Landing Beach	650 ±
Hen Cove Beach 1	7,900 ±
Hen Cove Beach 2	4,525 ±
Bassett's Island Disposal Site	14,100 ±
Squeteague Harbor	386 ±
Sagamore Beaches	7,145±
Mud Cove/Monks Park	9,753 ±

As mentioned above, all proposed sites to be maintenance dredged have been permitted in the past, and some still have current dredging permits. All beach nourishment sites with the exception of Sagamore Beach, Monks Cove Beach, and Squeteague Harbor Beach have been previously permitted as well. Table II below details the relevant historical permits related to dredge and nourishment areas within the Town of Bourne.

**TABLE II – PREVIOUS TOWN OF BOURNE DREDGING / NOURISHMENT PERMITS**

**Red Brook Harbor:**

<b><i>Permitting Agency</i></b>	<b><i>Permit No.</i></b>	<b><i>Date</i></b>	<b><i>Volume</i></b>
Army Corps of Engineers	MA-POCA-77-099	3/04/1977	
Conservation Commission	OOC SE7-1230	Issued: 7/19/1998	
Army Corps of Engineers	CENAE-CO-R-1998000338	Issued: 3/19/1998	26,400 yd <sup>3</sup>
DEQE: Division of Waterways	Chapter 91 Permit 100	Issued: 7/13/1982 Expired: 7/13/1987	14,100 yd <sup>3</sup>
DEQE: Division of Water Pollution Control	81W-0140	Issued: 7/05/1982	14,100 yd <sup>3</sup>
Army Corps of Engineers	MA-POCA-82-278	Issued: 8/30/1982 Expired: 12/31/1985	14,100 yd <sup>3</sup>

		(unless extended)	
DEQE	87W-001D	1/29/1987	20 yd <sup>3</sup>
Conservation Commission	OOE SE7-524	Issued: 2/04/1987	n/a
Conservation Commission	OOE SE7-530	Issued: 3/04/1987	n/a
Department of Environmental Protection	Chapter 91 Permit 189	Issued: 1/24/1990 Expired: 1/24/1995	“permission given by DEP to dredge by crane and possible blasting approx. 20 yd <sup>3</sup> of rocks
Division of Fisheries and Wildlife - NHESP	NHESP File: 98-3503	Issued: 5/28/1998	n/a
DEP	Chapter 91 Permit 367	Issued: 11/25/1998 Expired: 11/25/2008	26,400 yd <sup>3</sup>
DEP Water Quality Certification	WQC# 130538	Issued: 11/23/1998 Expired: 11/28/2001	
Environmental Notification Form	EOEA# 11555	Issued: 3/31/2008	
Division of Fish and Wildlife - NHESP	None	Designated 2006 as Significant and Priority Habitat	

**Buttermilk Bay/ Little Buttermilk Bay/ Gibbs Narrows:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Conservation Commission	OOE SE7-1350	Issued: 12/21/2001 Expired: 12/21/2010	n/a
Division of Fish and Wildlife - NHESP	NHESP File: 00-6567	Issued: 3/12/2001	n/a
DEP Water Quality Certification	Transmittal No.: W015747	Issued: 4/12/2001	15,800 yd <sup>3</sup>
DEP	Chapter 91 Permit No: 8881	Issued: 6/28/2001 Expired: 6/28/2004	15,800 yd <sup>3</sup>
Army Corps of Engineers	Permit No: CENAE-R-200002287 Application No: 199901470	Effective: 1/11/2000-1/11/2005	14,339 yd <sup>3</sup>
Environmental Notification Form	Project No. 12296R	Issued: 1/22/2001	n/a

**Grey Gables:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Conservation Commission	OOE SE7-1411	Issued: 4/19/2002 Expired: 4/19/2012	5,700 yd <sup>3</sup>

DEP: Superseding OOC	SE7-1411	Issued: 5/16/2003	5,700 yd <sup>3</sup>
DEP: Water Quality Certification	Transmittal No. 51004906	Issued: 3/14/2003	5,700 yd <sup>3</sup>
Army Corps of Engineers	Permit No: 200101894	Issued: 4/10/2003 Expired: 1/11/2006	5,700 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 9725	Issued: 6/06/2003	5,700 yd <sup>3</sup>
Division of Fish and Wildlife - NHESP	None	MESA now required 2006 NHESP Map designate GG as ES habitat	n/a
Environmental Notification Form	EOEA No. 12687	Issued: 1/23/2003	

**Phinney Harbor/ Monument Beach:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Conservation Commission	OOO SE7-1614	Issued: 5/19/2006 Expired: 5/19/2016	n/a
Army Corps of Engineers	NAE-2006-1480	Issued: 2/15/2007	2,500 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 11944	Issued: 10/24/2007 Expired: 10/29/2017	2,500 yd <sup>3</sup> From Phinney's Harbor boat ramp and Toby's Island bridge
DEP Water Quality Certification	Transmittal No. W078807	Issued: 10/15/2007	2,500 yd <sup>3</sup>
Division of Fish and Wildlife - NHESP	Tracking No. 06-19354	Issued: 4/28/2006	n/a
Division of Fish and Wildlife - NHESP	Tracking No. 06-19354	Issued: 4/06/2009	n/a
Environmental Notification Form	Project No. 13765	Issued: 5/10/2006	Boat ramp navigation channel maintenance dredge: 1,500 yd <sup>3</sup> Toby's Island maintenance dredge: 480 yd <sup>3</sup> and Toby's Island Improvement dredge: 520 yd <sup>3</sup>
Conservation	OOO SE7-1732	Issued: 7/14/2009	9,551 yd <sup>3</sup>

January 2, 2019  
Page 6

Commission			
DEP	Chapter 91 Permit No.13014	Issued: 4/12/2011	9,470 yd <sup>3</sup>
Army Corps of Engineers	NAE-2009-01694	Issued: 10/19/2011 Expired: 10/19/2016	9,950 yd <sup>3</sup>
Army Corps of Engineers: Permit Extension	NAE-2009-01694	Issued: 10/19/2011 Extended to/ Expires: 10/19/2021	9,950 yd <sup>3</sup>
DEP Water Quality Certification	Transmittal No. X228970	Issued: 12/13/2010	10,230 yd <sup>3</sup> of which 2,915 yd <sup>3</sup> is improv. dredging

**Hen's Cove/ Hospital Cove:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
DEP Water Quality Certification	Transmittal No. 130538	11/23/1998	26,400 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 367	1998	Not completed due to dredge damage from rocks encountered in channel
Division of Fish and Wildlife - NHESP	09-27599	Issued: 2/02/2010	n/a
Conservation Commission	OOC SE7-1748	Issued: 3/09/2010	16,799 yd <sup>3</sup>
DEP Water Quality Certification	Transmittal No. X230346	Issued: 8/26/2010	20,776 yd <sup>3</sup> 19,855 yd <sup>3</sup> for maintenance 921 yd <sup>3</sup> for improvement
Army Corps of Engineers	NAE-2010-321	Issued: 10/20/2010	20,776 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 12876	Issued: 11/09/2010	Maintenance dredging is okay for 10 years after permit is issued.
DMF	EEA#: 14521	n/a	n/a

**Barlow's Landing, Pocasset River/ Little Bay:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Division of Fish and Wildlife - NHESP	15-34728	September 17, 2015	n/a
Conservation Commission	SE7-1931	Issued: 3/17/2016	40,880 yd <sup>3</sup>
DEP Water Quality	Transmittal No.	Issued: 7/28/2016	Maintenance


January 2, 2019  
 Page 7

Certification	X267815		Dredge: 26,829 yd <sup>3</sup> Improvement Dredging: 6,860 yd <sup>3</sup>
Army Corps of Engineers	NAE-2016-184	Issued:8/15/2016	40,880 yd <sup>3</sup>
DPW	Contract #2475	6/21/65	52,000 yd <sup>3</sup> Little Bay Maintenance dredge
SE7-747	SE7-747	2/12/81	4,275 yd <sup>3</sup> Pocasset Harbor Dredge
DPW	Contract #653	1983	14,200 yd <sup>3</sup> Pocasset River maintenance dredge
DPW	n/a	1/14/81	4,275 yd <sup>3</sup> Maintenance Dredge
DEP W. Q. Cert. Permit documented history of permits acquired for these areas before 1960's			

Please do not hesitate to contact our office with any inquiries you may have pursuant to this application for a Town of Bourne Ten Year Comprehensive Dredging Permit.

Very truly yours,

BSC GROUP, INC.



Matthew Creighton, PWS, MVP  
 Senior Associate Coastal Scientist

CC: Town of Bourne Department of Natural Resources, 24 Perry Avenue, Room 102,  
 Buzzards Bay, MA 02532, Attn: Timothy Mullen, Director of Natural Resources –  
 Shore and Harbor Committee

**From:** [Creighton, Matthew T.](#)  
**To:** [Czepiga, Page \(EEA\)](#); [Kim, Tori \(EEA\)](#)  
**Subject:** Bourne 10 Year  
**Date:** Monday, June 29, 2020 1:06:45 PM  
**Attachments:** [10 Year Dredge OoC.PDF](#),  
[NHESPBourne\\_19-38503.pdf](#),  
[Town of Bourne\\_10-yr Comp Permit to ConCom 5-9-19.pdf](#),  
[Chap91 & 401WQC Project Description.doc](#)

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Hi Tori and Page,

It was great to grab a minute and talk through the Town of Bourne 10 year project.

BSC is requesting a MEPA jurisdictional determination on behalf of the Town of Bourne for their 10 year comprehensive dredge project. This determination is to document that this is a maintenance dredge project. Because this project is a maintenance with no expansion of dredge footprint, we would like to confirm it meets the MEPA exemption for maintenance.

Please find the attached project description along with the Conservation Order of Conditions, No Take letter for NHESP, and response from DMF.

As always, please feel free to contact me with any questions or if you need any additional information.

Be Well,

Matt

**Matthew Creighton, PWS, MVP | Senior Associate / Coastal Scientist  
Manager of Ecological Services – West Yarmouth, MA**

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**BSC Group**

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main | 508-778-8919  
cell | 401-480-9179

## **PROJECT DESCRIPTION**

### **1.0 INTRODUCTION:**

The Town of Bourne has conducted maintenance dredging of their waterways under various Waterways Permits (Chapter 91), Water Quality Certification (401-WQC), Orders of Conditions (OOC), and United States Army Corps of Engineers 404 Permits (USACOE-404) over the last two plus decades. The Town of Bourne is requesting this 10-year comprehensive dredge permit to simplify the permitting process and to establish a long-term management plan for dredging, dredging management, and beach nourishment throughout the Town's waterways and beaches. The 10-year comprehensive permit also allows the Town flexibility to respond to immediate needs for dredging or nourishment following storms in order to maintain public safety, tidal flushing, and navigation.

The Bourne Conservation Agent is collaborating with Engineering Department as well as the Harbormaster throughout this process, to manage and oversee the dredge program for the Town. The objective of the ten-year comprehensive permit is to provide flexibility for the Town to manage the dredging/nourishment activities. While not all areas listed require immediate dredging, the Town is including each to respond to needs as they arise over the next ten years.

This project represents maintenance dredging and encompasses work previously permitted under local, state, and federal authorizations, permits, and licenses. Most of the sediment dredged has been identified as compatible sand material that will be used as beach nourishment, throughout the Town of Bourne (where needed). Private association beaches, which have current beach nourishment permits in place may be able to purchase the clean sand material from the Town to reduce costs for the Town. The Town will consider these proposals when excess material is dredged, which can't be directly placed on an adjacent Town Beach. Any dredge material not sieving out at 90% or greater sand will be dewatered and disposed of at the Town of Bourne Landfill. This material will be used for daily cover, as previously permitted. In the case where both clean sand and silts will be dredged from a dredge site, the clean sand will be dredged first and removed from the dewatering pit. Then the silty material will be dredged and allowed to dewater in place, before being trucked to the Town Landfill. This phasing will ensure that the sandy beach nourishment material is removed and that the siltier material is completely removed from the beach before restoring.

### **2.0 SITE DESCRIPTION:**

The Town of Bourne Board of Selectmen is filing this Ten-Year Comprehensive Dredging and Beach Nourishment Permit to maintenance dredge approximately 71,383 cubic yards (cy) of sediment from 13 previously permitted and dredged sites, to include:

- Phase I
- Little Buttermilk Bay
  - Gibbs Narrows
  - Buttermilk Bay
  - Cohasset Narrows
  - Grey Gables

*Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts*

Phase II

- Phinney's Harbor
- Little Bay
- Pocasset River

Phase III

- Pocasset Harbor
- Barlow's Landing
- Red Brook Harbor
- Hen Cove
- Hospital Cove

In addition to the above captioned dredge sites. The project includes beach nourishment and dewatering sites located at:

Phase I

- Electric Avenue Beach
- Grey Gables Beach
- 

Phase II

- Monument Beach
- Shore Road – Dewatering Site(s)

Phase III

- Bassett Island Dredge Disposal Site
- Hen Cove Beaches
- Barlow's Landing

The wetland resource areas and areas of conservation jurisdiction at the sites that are protected under the Wetlands Protection Act and the Town of Bourne's Wetland Protection Bylaw include:

- Land Under the Ocean
- Land Containing Shellfish
- Eelgrass Beds (SAS)
- Salt Marsh
- Coastal Beach
- Coastal Dune
- Coastal Bank
- Land Subject to Coastal Storm Flowage
- Natural Heritage and Endangered Species Mapped Habitat

### **3.0 PERMITTING**

This application for a Combined Permit for Waterways & Water Quality Certification is being submitted in accordance with the Massachusetts Wetlands Protection Act and the Town of Bourne Wetlands Protection By-law. BSC and the Town of Bourne have performed extensive research, bathymetric surveys, topographic surveys, boring (sampling) collections, laboratory analysis, probing, discussions with regulatory authorities, etc. in order to design this proposed

*Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts*

project. Listed in Table I below are the required permits for this project; Table II below are the historic permits for the various dredge sites:

**Table I – REQUIRED PERMITS**

<b>REGULATORY AUTHORITY</b>	<b>PERMIT</b>	<b>STATUS</b>
Bourne Conservation Commission	Order of Conditions: SE 07-2052	Notice of Intent application approved
Massachusetts Natural Heritage & Endangered Species Program MESA Application	Determination of No Adverse Impact	Coordination with Massachusetts Natural Heritage & Endangered Species Program
MA Department of Environmental Protection	Combined Chapter 91/ 401 Water Quality Certification Permit	Combined Chapter 91 and 401 Water Quality Certificate to be submitted following the issuance of an Order of Conditions
US Army Corps of Engineers	Individual Permit	US Army Corps of Engineers application to be submitted upon issuance of MEPA Certificate
Massachusetts Coastal Zone Management	Federal Consistency Review	Required to obtain USACOE Individual Permit
Historic Reviews	Mass Historic Commission, Board of Underwater Archeological Resources, Tribes	Required to obtain USACOE Individual Permit

**TABLE II – PREVIOUS TOWN OF BOURNE DREDGING / NOURISHMENT PERMITS**

**Red Brook Harbor:**

<b>Permitting Agency</b>	<b>Permit No.</b>	<b>Date</b>	<b>Volume</b>
Army Corps of Engineers	MA-POCA-77-099	3/04/1977	
Conservation Commission	OOC SE7-1230	Issued: 7/19/1998	
Army Corps of Engineers	CENAE-CO-R-1998000338	Issued: 3/19/1998	26,400 yd <sup>3</sup>
DEQE: Division of Waterways	Chapter 91 Permit 100	Issued: 7/13/1982 Expired: 7/13/1987	14,100 yd <sup>3</sup>
DEQE: Division of Water Pollution Control	81W-0140	Issued: 7/05/1982	14,100 yd <sup>3</sup>
Army Corps of Engineers	MA-POCA-82-278	Issued: 8/30/1982 Expired: 12/31/1985 (unless extended)	14,100 yd <sup>3</sup>
DEQE	87W-001D	1/29/1987	20 yd <sup>3</sup>
Conservation Commission	OOC SE7-524	Issued: 2/04/1987	n/a
Conservation	OOC SE7-530	Issued: 3/04/1987	n/a

**Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts**

Commission			
Department of Environmental Protection	Chapter 91 Permit 189	Issued:1/24/1990 Expired:1/24/1995	“permission given by DEP to dredge by crane and possible blasting approx. 20 yd <sup>3</sup> of rocks
Division of Fisheries and Wildlife - NHESP	NHESP File: 98-3503	Issued: 5/28/1998	n/a
DEP	Chapter 91 Permit 367	Issued: 11/25/1998 Expired: 11/25/2008	26,400 yd <sup>3</sup>
DEP Water Quality Certification	WQC# 130538	Issued: 11/23/1998 Expired: 11/28/2001	
Environmental Notification Form	EOEA# 11555	Issued: 3/31/2008	
Division of Fish and Wildlife - NHESP	None	Designated 2006 as Significant and Priority Habitat	

**Buttermilk Bay/ Little Buttermilk Bay/ Gibbs Narrows:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Conservation Commission	OOC SE7-1350	Issued: 12/21/2001 Expired: 12/21/2010	n/a
Division of Fish and Wildlife - NHESP	NHESP File: 00-6567	Issued:3/12/2001	n/a
DEP Water Quality Certification	Transmittal No.: W015747	Issued: 4/12/2001	15,800 yd <sup>3</sup>
DEP	Chapter 91 Permit No: 8881	Issued: 6/28/2001 Expired: 6/28/2004	15,800 yd <sup>3</sup>
Army Corps of Engineers	Permit No: CENAE-R-200002287 Application No: 199901470	Effective: 1/11/2000-1/11/2005	14,339 yd <sup>3</sup>
Environmental Notification Form	Project No. 12296R	Issued: 1/22/2001	n/a

**Grey Gables:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Conservation Commission	OOC SE7-1411	Issued: 4/19/2002 Expired: 4/19/2012	5,700 yd <sup>3</sup>
DEP: Superseding OOC	SE7-1411	Issued: 5/16/2003	5,700 yd <sup>3</sup>
DEP: Water Quality Certification	Transmittal No. 51004906	Issued:3/14/2003	5,700 yd <sup>3</sup>
Army Corps of Engineers	Permit No: 200101894	Issued: 4/10/2003 Expired: 1/11/2006	5,700 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 9725	Issued: 6/06/2003	5,700 yd <sup>3</sup>
Division of Fish and	None	MESA now required	n/a

*Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts*

Wildlife - NHESP		2006 NHESP Map designate GG as ES habitat	
Environmental Notification Form	EOEA No. 12687	Issued: 1/23/2003	

**Phinney Harbor/ Monument Beach:**

<i>Permitting Agency</i>	<i>Permit No.</i>	<i>Date Issued</i>	<i>Volume</i>
Conservation Commission	OOC SE7-1614	Issued: 5/19/2006 Expired: 5/19/2016	n/a
Army Corps of Engineers	NAE-2006-1480	Issued: 2/15/2007	2,500 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 11944	Issued: 10/24/2007 Expired: 10/29/2017	2,500 yd <sup>3</sup> From Phinney's Harbor boat ramp and Toby's Island bridge
DEP Water Quality Certification	Transmittal No. W078807	Issued: 10/15/2007	2,500 yd <sup>3</sup>
Division of Fish and Wildlife - NHESP	Tracking No. 06-19354	Issued: 4/28/2006	n/a
Division of Fish and Wildlife - NHESP	Tracking No. 06-19354	Issued: 4/06/2009	n/a
Environmental Notification Form	Project No. 13765	Issued: 5/10/2006	Boat ramp navigation channel maintenance dredge: 1,500 yd <sup>3</sup> Toby's Island maintenance dredge: 480 yd <sup>3</sup> and Toby's Island Improvement dredge: 520 yd <sup>3</sup>
Conservation Commission	OOC SE7-1732	Issued: 7/14/2009	9,551 yd <sup>3</sup>
DEP	Chapter 91 Permit No.13014	Issued: 4/12/2011	9,470 yd <sup>3</sup>
Army Corps of Engineers	NAE-2009-01694	Issued: 10/19/2011 Expired: 10/19/2016	9,950 yd <sup>3</sup>
Army Corps of Engineers: Permit Extension	NAE-2009-01694	Issued: 10/19/2011 Extended to/ Expires: 10/19/2021	9,950 yd <sup>3</sup>
DEP Water Quality Certification	Transmittal No. X228970	Issued: 12/13/2010	10,230 yd <sup>3</sup> of which 2,915 yd <sup>3</sup> is improv. dredging

**Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts**

**Hen's Cove/ Hospital Cove:**

<b>Permitting Agency</b>	<b>Permit No.</b>	<b>Date Issued</b>	<b>Volume</b>
DEP Water Quality Certification	Transmittal No. 130538	11/23/1998	26,400 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 367	1998	Not completed due to dredge damage from rocks encountered in channel
Division of Fish and Wildlife - NHESP	09-27599	Issued: 2/02/2010	n/a
Conservation Commission	OOO SE7-1748	Issued: 3/09/2010	16,799 yd <sup>3</sup>
DEP Water Quality Certification	Transmittal No. X230346	Issued: 8/26/2010	20,776 yd <sup>3</sup> 19,855 yd <sup>3</sup> for maintenance 921 yd <sup>3</sup> for improvement
Army Corps of Engineers	NAE-2010-321	Issued: 10/20/2010	20,776 yd <sup>3</sup>
DEP	Chapter 91 Permit No. 12876	Issued: 11/09/2010	Maintenance dredging is okay for 10 years after permit is issued.
DMF	EEA#: 14521	n/a	n/a

**Barlow's Landing, Pocasset River/ Little Bay:**

<b>Permitting Agency</b>	<b>Permit No.</b>	<b>Date Issued</b>	<b>Volume</b>
Division of Fish and Wildlife - NHESP	15-34728	September 17, 2015	n/a
Conservation Commission	SE7-1931	Issued: 3/17/2016	40,880 yd <sup>3</sup>
DEP Water Quality Certification	Transmittal No. X267815	Issued: 7/28/2016	Maintenance Dredge: 26,829 yd <sup>3</sup> Improvement Dredging: 6,860 yd <sup>3</sup>
Army Corps of Engineers	NAE-2016-184	Issued: 8/15/2016	40,880 yd <sup>3</sup>
DPW	Contract #2475	6/21/65	52,000 yd <sup>3</sup> Little Bay Maintenance dredge
SE7-747	SE7-747	2/12/81	4,275 yd <sup>3</sup> Pocasset Harbor Dredge
DPW	Contract #653	1983	14,200 yd <sup>3</sup> Pocasset River maintenance dredge

*Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts*

DPW	n/a	1/14/81	4,275 yd <sup>3</sup> Maintenance Dredge
DEP W. Q. Cert. Permit documented history of permits acquired for these areas before 1960's			

In preparation for the proposed project, BSC hydro-surveyed all sites not under a current dredging permit, as requested by DEP Water Quality Certification Program. This survey was to determine the current need for dredging in the areas not recently dredged and to conduct sediment sampling for any areas not under a current permit, when volumes exceed 100 cy. The volumes listed in Table III below for Little Bay, Pocasset River, Pocasset Harbor, Barlow's Landing, and Hen Cove are the approved dredge volumes and were not re-surveyed/sampled as part of this permit process. Therefore, the associated dredge volumes for these locations are based on prior permits, and no borings were collected. Hen Cove and Barlow's Landing have been recently dredged, with Pocasset River planned for spring 2019. All other volumes listed in Table III below are based on current dredge needs and have expired dredge permits. Any areas with expired dredge permits have been resampled, as needed and noted on the site plans. Note: Sediment sample was not collected from Red Brook Harbor due to naturally relocated sediment out of the channel. Boring numbers for sample sites are also listed in Table III, where needed.

**TABLE III - PROPOSED DREDGING VOLUMES:**

<b>Location</b>	<b>Dredge (C.Y.)</b>	<b>1' Overdredge (C.Y.)</b>	<b>Total (C.Y.)</b>	<b>Boring #s</b>
Buttermilk Bay	42	89	131	N/A
Grey Gables	4,860	4,531	9,391	GG 1- GG 9
Phinneys Harbor	5,782	460	6,242	PH1-PH6
Little Bay	10,351	7,718	18,069	N/A
Pocasset River	4,695	4,425	9,120	N/A
Pocasset Harbor	800	1,800	2,600	N/A
Barlow's Landing	2,229	1,359	3,588	N/A
Hen's Cove (Channel)	3,228	5,512	8,740	N/A
Hen's Cove (Anchorage)	5,384	3,326	8,710	N/A
Hospital Cove	4,195	597	4,792	HC3-HC5

All dredged material will be transported to approved dewatering basins. Once dewatered, the Town of Bourne proposes to continue use of the previously approved beach nourishment sites listed in Table IV below. Some of these sites (Barlow's Landing Beach, Hens Cove Beach, and Monument Beach) have been nourished within the last few years and would require a re-survey to determine the appropriate volume of material that could be placed prior to dredging. As such, these three sites have listed the original approved volume based on the original beach profiles for each site. If excess sediment is available for beach nourishment, then private association beaches may purchase it for use to lower the dredge costs for the Town, or the Town may gift/sell it to the Town of Sandwich for beach nourishment purposes. Any sediment not suitable for nourishment will be trucked to the Town landfill to be used as daily cover.

All sites will be dredged using the Barnstable County hydraulic cutter-head dredge with the exception of the Pocasset River, which may use mechanical or hydraulic dredging depending on the dewatering basin used. Hydraulic dredging is preferred over mechanical dredging when

feasible as it can be conducted using the County Dredge at a significant cost savings to the Town. However, hydraulic dredging uses water to create a slurry with the sediment to be dewatered, which creates a need for a larger dewatering basin. As such, the Town is requesting an option to mechanical dredge the Pocasset River to prevent potential impacts from silt entering the Pocasset River ACEC. Currently the only place listed for mechanical dredging is the Pocasset River, if the material can't be pumped to Monument Beach for dewatering.

**TABLE IV – BEACH NOURISHMENT SITES**

<b>Location</b>	<b>Nourishment (C.Y.)</b>
Electric Ave. Beach	400 ±
Gray Gables Beach	2,500 ±
Monument Beach	16,100 ±
Barlow's Landing Beach	650 ±
Hen Cove Beach 1	7,900 ±
Hen Cove Beach 2	4,525 ±
Bassett's Island Disposal Site	14,100 ±

In order to protect existing Priority and Estimated Habitats as well as marine fisheries resources the project will adhere to all Time of Year (TOY) restrictions as recommended by the Natural Heritage and Endangered Species Program (NHESP), and the Division of Marine Fisheries (DMF). Additionally, no dredging will occur within intertidal areas. Special care will be taken when dredging occurs near resources (eg. Shellfish, eelgrass, saltmarsh) to avert impacts to these resources. Prior to the start of any dredging, the dredge area will be surveyed for proximal shellfish, eelgrass, and salt marsh. No dredging or nourishment activity will take place with 25' of salt marsh or within 100' of eelgrass. The Town of Bourne Department of Natural Resources personnel and a MA DMF shellfish biologist will work together to ensure existing shellfish populations are sufficiently protected.

#### **4.0 WETLAND RESOURCE AREAS**

Dredging and beach nourishment associated with this project will result in the temporary disturbance to wetland resource areas, as defined in the Massachusetts Wetlands Protection Act and its Regulations at 310 CMR 10.00. The following wetland resource areas and buffer zones impacted by the proposed project are:

##### **Land Under the Ocean (310 CMR 10.25)**

Proposed activities will result in the disturbance to land under the ocean. Best available measures have been incorporated into the maintenance dredging operations. The proposed dredging and beach nourishment will adhere to all time of year restrictions to avoid impacts to marine productivity. This will protect the spawning periods for species such as Herring, Alewives, Flounder, White Perch, American Eel, and Tautog. Dredging will create the largest disturbance for Land Under the Ocean. However, the disturbance will be minimized by using best available techniques such as the Barnstable County Dredge. The County Dredge is a hydraulic cutterhead dredge, which uses mechanical agitation and suction to dredge material and pump to a receiving beach or dewatering area through a 14-inch discharge pipe. This method of dredging minimizes disturbances to the aquatic environment because once the material is located with the suction device there is no means of escape into the surrounding waters, and it is transported quickly to the disposal site in a closed system. During dredging, any shellfish displaced that remain after the

Town of Bourne's commercial and recreational harvest of shellfish will be removed from the spoils and returned to the waterway under the direction of the Bourne Shellfish Warden.

There are no long-term anticipated impacts to Land Under the Ocean.

**Coastal Beach (310 CMR 10.29)**

Impacts to Coastal Beach are anticipated to be minor. The only work proposed along the Coastal Beach is the construction of dewatering basins for dredge spoils and associated beach nourishment as a beneficial re-use along the bathing beaches. Impacts to the coastal beaches are anticipated to be indirect, and minor. A small bulldozer or rubber-tired frontend loader will cut dewatering basins into the beach. The dewatering basin will allow suspended sands to precipitate out, which will be reused as beach nourishment, and silts will be removed and used as daily cover at the Bourne Landfill.

**Land Containing Shellfish (310 CMR 10.34)**

Land Containing Shellfish has been identified using the Town of Bourne's shellfish maps. Types of shellfish found in the proposed dredge areas include Soft Shell Clams (*Mya arenaria*), Quahogs (*Mercenaria mercenaria*), Oysters (*Crassostrea virginica*), and Razor clam (*Ensis directus*). All of the impacts to shellfish will be associated with dredging. The areas in and around the work zones can be opened to shellfishing, as applicable, to reduce the population which could be impacted. Any impacts within the project area will have a limited effect to shellfish due to the schedule of proposed activities; shellfish are deeper in the soil during winter months and work will be complete prior to spat dispersal. During dredging the Bourne Shellfish Warden will be onsite to monitor the removal and relocation of any shellfish from the dewatering basin or located on the spoil disposal sites. All beach nourishment will be above the MHW line and will not affect the shellfish populations located below MHW.

**Salt Marsh (310 CMR 10.32)**

Several areas throughout the project site contain salt marsh running along the shoreline. In all areas with salt marsh present at the time of dredging, a minimum buffer of 25 feet will be provided to prevent impacts to salt marsh from dredging activities. This will protect the salt marsh during and after the dredging process is complete. It is noted that during construction of the Shore Road Bridge and the 1961 dredging of the Pocasset Marina, the fill of Salt Marsh at the Shore Road dewatering site was (is) deemed as filled tidelands under DPW Permit #4427 (March 13, 1961).

**Rare and Endangered Species (310 CMR 10.37)**

Portions of the project sites are designated as Estimated Habitat for Rare Wildlife by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) according to the 2018 *Massachusetts Natural Heritage GIS Viewer*. BSC has submitted a MESA Application to NHESP and a copy of the Notice of Intent for their review and comment on the entire project. Time Of Year (TOY) restrictions have been imposed in several work areas. All TOY restrictions will be adhered too as described in the MESA permit.

**5.0 MITIGATION MEASURES**

Mitigation measures are to be implemented in order to minimize disturbances to natural and wetland resources areas as a result of dredging activities. Such measures include the timing restrictions, minimization of activities, and using the best available technologies. This project

*Combined Chapter 91 and Water Quality Certification  
10-Year Comprehensive Dredge Permit  
Bourne, Massachusetts*

will also be conditioned by the DEP through a Chapter 91 Permit and Water Quality Certification, US Army Corps of Engineers through an Individual Permit, Coastal Zone Management through a Federal Consistency Review, and the Division of Marine Fisheries.

The hydraulic dredging method will be used at all sites except for in the Pocasset River. Mechanical dredging will be used at this site if dewatering can't be accomplished at Monument Beach, in order to minimize suspended sediment transport upstream towards an Area of Critical Environmental Concern during incoming tides.



**Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands**

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
SE7-2052  
MassDEP File #

eDEP Transaction #  
Bourne  
City/Town

**A. General Information**

**Please note:**  
this form has been modified with added space to accommodate the Registry of Deeds Requirements

**Important:**  
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. From: Bourne Conservation Commission  
Conservation Commission

2. This issuance is for (check one):  
a.  Order of Conditions b.  Amended Order of Conditions

3. To: Applicant:  
Town of Bourne c/oTown of Bourne Dept. of Natural Resource Director  
a. First Name b. Last Name

c. Organization  
24 Perry Ave  
d. Mailing Address  
Buzzards Bay MA 02532  
e. City/Town f. State g. Zip Code

4. Property Owner (if different from applicant):  
a. First Name b. Last Name

c. Organization  
d. Mailing Address  
e. City/Town f. State g. Zip Code

5. Project Location:  
Various Dredge Locations Bourne  
a. Street Address b. City/Town

See attached information  
c. Assessors Map/Plat Number d. Parcel/Lot Number

Latitude and Longitude, if known: See attached information See attached information  
d. Latitude e. Longitude



**Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands**

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
SE7-2052  
MassDEP File #

eDEP Transaction #  
Bourne  
City/Town

**A. General Information (cont.)**

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):  
Barnstable
- |           |  |
|-----------|--|
| a. County | b. Certificate Number (if registered land) |
| 01405     | 0043                                       |
| c. Book   | d. Page                                    |
7. Dates: May 23, 2019
- |                                |                               |                     |
|--------------------------------|-------------------------------|---------------------|
| a. Date Notice of Intent Filed | b. Date Public Hearing Closed | c. Date of Issuance |
|--------------------------------|-------------------------------|---------------------|
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):  
Town of Bourne Ten Year Comprehensive Dredging & Disposal Permit to accompany NOI
- |                        |  |                          |
|------------------------|--|--------------------------|
| a. Plan Title          | b. Prepared By                               | c. Signed and Stamped by |
| BSC Group, Inc.        | 11/9/18                                      | Craig A. Field           |
| d. Final Revision Date | e. Scale                                     |                          |
|                        | Various: Scale shown @ bottom right on plans |                          |
- |                                      |         |
|--------------------------------------|---------|
| f. Additional Plan or Document Title | g. Date |
|--------------------------------------|---------|

**B. Findings**

1. Findings pursuant to the Massachusetts Wetlands Protection Act:
- Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:
- |  |  |   |
|--|--|---|
| a. <input type="checkbox"/> Public Water Supply  | b. <input checked="" type="checkbox"/> Land Containing Shellfish | c. <input checked="" type="checkbox"/> Prevention of Pollution        |
| d. <input type="checkbox"/> Private Water Supply | e. <input checked="" type="checkbox"/> Fisheries                 | f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| g. <input type="checkbox"/> Groundwater Supply   | h. <input checked="" type="checkbox"/> Storm Damage Prevention   | i. <input checked="" type="checkbox"/> Flood Control                  |
2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

**Approved subject to:**

- a.  the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:

SE7-2052

MassDEP File #

eDEP Transaction #

Bourne

City/Town

**B. Findings (cont.)**

Denied because:

- b.  the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c.  the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3.  Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) \_\_\_\_\_ a. linear feet

**Inland Resource Area Impacts:** Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	_____ a. linear feet	_____ b. linear feet	_____ c. linear feet	_____ d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	_____ a. square feet _____ e. c/y dredged	_____ b. square feet _____ f. c/y dredged	_____ c. square feet	_____ d. square feet
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
Cubic Feet Flood Storage	_____ e. cubic feet	_____ f. cubic feet	_____ g. cubic feet	_____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet	_____ b. square feet		
Cubic Feet Flood Storage	_____ c. cubic feet	_____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
SE7-2052  
MassDEP File #

eDEP Transaction #  
Bourne  
City/Town

**B. Findings (cont.)**

**Coastal Resource Area Impacts:** Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input checked="" type="checkbox"/> Land Under the Ocean	<u>1,521,136</u> a. square feet	<u>1,521,136</u> b. square feet		
	<u>71,383</u> c. c/y dredged	<u>71,383</u> d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input checked="" type="checkbox"/> Coastal Beaches	<u>419,243</u> a. square feet	<u>419,243</u> b. square feet	<u>49,359 cu yd</u> c. nourishment	<u>49,359 cu yd</u> d. nourishment
14. <input type="checkbox"/> Coastal Dunes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. nourishment	<u>                    </u> d. nourishment
15. <input type="checkbox"/> Coastal Banks	<u>                    </u> a. linear feet	<u>                    </u> b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
17. <input type="checkbox"/> Salt Marshes	<u>                    </u> a. square feet	<u>                    </u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	<u>                    </u> a. square feet	<u>                    </u> b. square feet		
19. <input checked="" type="checkbox"/> Land Containing Shellfish	<u>1,521,136</u> a. square feet	<u>1521,136</u> b. square feet	<u>                    </u> c. square feet	<u>                    </u> d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u>                    </u> a. c/y dredged	<u>                    </u> b. c/y dredged		
21. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	<u>1,940,379</u> a. square feet	<u>1,940,379</u> b. square feet		
22. <input type="checkbox"/> Riverfront Area	<u>                    </u> a. total sq. feet	<u>                    </u> b. total sq. feet		
Sq ft within 100 ft	<u>                    </u> c. square feet	<u>                    </u> d. square feet	<u>                    </u> e. square feet	<u>                    </u> f. square feet
Sq ft between 100-200 ft	<u>                    </u> g. square feet	<u>                    </u> h. square feet	<u>                    </u> i. square feet	<u>                    </u> j. square feet



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:

SE7-2052

MassDEP File #

eDEP Transaction #

Bourne

City/Town

**B. Findings (cont.)**

\* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23.  Restoration/Enhancement \*:

a. square feet of BVW

b. square feet of salt marsh

24.  Stream Crossing(s):

a. number of new stream crossings

b. number of replacement stream crossings

**C. General Conditions Under Massachusetts Wetlands Protection Act**

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. The work is a maintenance dredging project as provided for in the Act; or
  - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
  - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on 07/05/2024 unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:

SE7-2052

MassDEP File #

eDEP Transaction #

Bourne

City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act**

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,  

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]  
"File Number"            SE7-2052 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
SE7-2052  
MassDEP File #

eDEP Transaction #  
Bourne  
City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1)  is subject to the Massachusetts Stormwater Standards
  - (2)  is NOT subject to the Massachusetts Stormwater Standards

**If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:**

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
  - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
  - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

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Provided by MassDEP:  
SE7-2052  
MassDEP File #

eDEP Transaction #  
Bourne  
City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
- v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:
- i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and
- ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



**Massachusetts Department of Environmental Protection**  
**Bureau of Resource Protection - Wetlands**  
**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
 And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
 SE7-2052  
 MassDEP File #

eDEP Transaction #  
 Bourne  
 City/Town

**C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)**

- g) The responsible party shall:
  - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

**See attached text**

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- 20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

**WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
SE7-2052

MassDEP File #

eDEP Transaction #

Bourne

City/Town

**D. Findings Under Municipal Wetlands Bylaw or Ordinance**

1. Is a municipal wetlands bylaw or ordinance applicable?  Yes  No
2. The Bourne Conservation Commission hereby finds (check one that applies):  
Conservation Commission
- a.  that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw

2. Citation

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- b.  that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

Bourne Wetlands Protection Bylaw

1. Municipal Ordinance or Bylaw

Article 3.7

2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

**See attached text**

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**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
 And The Bourne Wetland Protection Bylaw Article 3.7

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 SE7-2052  
 MassDEP File #

eDEP Transaction #  
 Bourne  
 City/Town

**E. Signatures**

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

7/9/2019  
 1. Date of Issuance  
 6  
 2. Number of Signers

Signatures:

*R. D. Gray*  
*Thomas L. Leger*

*Christina*  
*[Signature]*  
*[Signature]*

by hand delivery on

7/9/2019

Date

by certified mail, return receipt requested, on

Date

**F. Appeals**

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands  
**WPA Form 5 – Order of Conditions**  
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
 And The Bourne Wetland Protection Bylaw Article 3.7

Provided by MassDEP:  
 SE7-2052  
 MassDEP File #  
 \_\_\_\_\_  
 eDEP Transaction #  
 Bourne  
 City/Town

**G. Recording Information**

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Bourne Conservation Commission  
 Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Bourne Conservation Commission  
 Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Bourne waterways  
 Project Location

SE7-2052  
 MassDEP File Number

Has been recorded at the Registry of Deeds of:

Barnstable  
 County

Book

Page

for: Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

This Order of Conditions is being issued based upon strict accordance with the information submitted in the Notice of Intent filed on May 23, 2019 and the Plan of Record (revised) dated 05/22/2019 and stamped by Craig A. Field. Additional materials reviewed included:

- Locus map created by BSC Group and dated March 29, 2019;
- MASSDEP SERO NOI File Number correspondence dated January 30, 2019;
- April 19, 2019 Letter from Division of Fisheries and Wildlife;
- May 9, 2019 Letter from Division of Marine Fisheries

In addition to the GENERAL CONDITIONS referenced in the Order of Conditions, the Commission has found it necessary to impose the following Special Conditions pursuant to M.G.L. Ch. 131, s.40 and the Town of Bourne Natural Resources Protection Bylaw Article 3.7.

THE SPECIAL CONDITIONS AND BYLAW CONDITIONS CHECKED BELOW APPLY TO YOUR PROPOSAL. NOTE THAT THE ABOVE LISTED GENERAL CONDITIONS ARE AUTOMATICALLY PART OF THIS ORDER OF CONDITIONS.

**SPECIAL CONDITIONS Pursuant to M.G.L. C. 131, s. 40.**

\*\*\* (Pre-Construction) \*\*\*

1. This Order of Conditions shall apply to any successor in interest or successor in control of the property.
2. NO WORK SHALL BEGIN until General Condition #9 has been complied with. The Commission must be in receipt of the Registry information certificate BEFORE work begins. An Enforcement Order will be issued if work is prematurely begun without compliance with this condition.
3. ALL CONSTRUCTION MUST COMPLY WITH THE ABOVE-REFERENCED PLANS AND THE CONDITIONS OF THIS ORDER. ANY CHANGES INTENDED TO BE MADE IN THE PLANS OR IN THE WORK, SHALL REQUIRE THE APPLICANT TO FILE A NEW NOTICE OF INTENT, OR TO INQUIRE OF THE COMMISSION IN WRITING WHETHER THE CHANGE IS SUBSTANTIAL ENOUGH TO REQUIRE A NEW FILING. NO CHANGE IN PLAN OR WORK, UNDER THIS FILING IS PERMISSIBLE WITHOUT A NEW NOTICE OF INTENT, OR PERMISSION FROM THE COMMISSION. FAILURE TO COMPLY WITH THIS CONDITION WILL RESULT IN THE ORDER OF CONDITIONS (PERMIT) BEING REVOKED.
4. The Plan of Record shall be in full compliance with Appendix G of 780 CMR Massachusetts State Building Code and the requirements the Federal Emergency Management Agency (FEMA). Specific design requirements for construction in flood zones (A, A1-A30, AE, AC, AH, V1-V30, and VE) shall be determined by the Town of Bourne Building Inspector. The final foundation design APPROVED by the Building Inspector shall automatically become a part of the Plan of Record. Noncompliance with any of the requirements of Appendix G of 780 CMR or those of the Building Inspector shall constitute a violation of the Order of Conditions and will be grounds for Enforcement Action and/or the non-issuance of the Certificate of Compliance. Upon requesting a Certificate of Compliance the applicant must present PROOF that his/her project has been designed according to the Plan of Record and to the satisfaction of the Building Inspector.
5. Prior to the installation of the subsurface sewage disposal system, you are advised of the necessity to comply with, or receive a variance from, the local Board of Health Regulations & Bylaws and obtain a valid health permit. The Order of Conditions re-emphasizes this requirement and prohibits any construction prior to obtaining a Board of Health permit. A leaching facility must be 150' from any wetland resource area (including the top of the coastal bank) unless a variance or other approval has been granted by the Board of Health.

- 6. Since the building was or is to be constructed after August 10, 1978, and is or will be within 100' of the top of an eroding coastal bank, (310 CMR, 10.30), this Order and the Certificate of Compliance incorporate 310 CMR 10.30(5) which states: "no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions."
- 7. The applicant as a condition of this Order, grants to the Commission members, and agents of the Commission the right to enter, inspect, and sample the premises to evaluate compliance with the conditions and performance standards stated in this Order, the Act, and 310 CMR 10.00 and the Town of Bourne Wetlands Protection Bylaw Article 3.7, and may require the submittal of any data deemed necessary by the Commission for that evaluation.
- 8. An on-site pre-construction inspection meeting must be held between the Bourne Conservation Commission and/or agent, the contractor responsible for implementing the project, and if applicable, the outside consultant/representative responsible for permitting. The Bourne Conservation Commission must be contacted in writing at least two weeks prior to the scheduled meeting. All erosion controls must be installed at the location of the project prior to the pre-construction meeting, unless otherwise agreed upon by the applicant and the Bourne Conservation Commission.
- 9. The landowner and/or his contractor will notify the Commission in writing 5 days prior to the start of work. The letter shall state the name, address, telephone number (business & home phone) of the project supervisor who will be responsible for insuring on-site compliance with this Order. All sedimentation/erosion control devices shall be installed BEFORE the start of work.
- 10. This document shall be included in all construction contracts and subcontracts dealing with the work proposed and shall supersede other contract requirements.
- 11. No underground petroleum product storage tanks are allowed within 100' of any wetland or within any velocity (V) floodzone as indicated on the most recent FEMA floodzone maps.

\*\*\* (Construction) \*\*\*

- 12. The project engineer and contractors (and all subcontractors) must be informed of the conditions of this Order. A copy of this Order of Conditions must be available at all times at the construction site for reference. The Applicant is held responsible for compliance with this Order of Conditions.
- 13. Whatever erosion control measures are indicated on the plan, they shall consist of at least a double row of staked hay-bales and these must be maintained throughout the construction period. It is the applicant's responsibility to take additional appropriate measures to control sedimentation/erosion into the wetland areas.
- 14. The Applicant must employ and maintain suitable erosion control measures such as staked hay bales, siltation curtains, bark mulch, jute netting, etc. as shown on the Plan of Record and/or addressed in the Notice of Intent. This siltation control shall be maintained until all disturbed areas are successfully revegetated. Additional erosion controls shall be kept on-site in order to respond to unforeseen circumstances.
- 15. The applicant, owner, successors or assignees shall be responsible for maintaining any on-site drainage structures and out falls, assuring the lasting integrity of vegetative cover on the site and site activities so as to prevent erosion, siltation, sedimentation, chemical contamination or other detrimental impact to the on-site wetland resource area(s) and/or off-site wetland resource area(s). The maintenance activities specified in this Order shall not expire with the issuance of

the Certificate of Compliance and shall continue in perpetuity. It is the responsibility of the property owner of record to see that maintenance conditions are complied with as required by this Order.

- 16. Gutters, downspouts and drywell must be installed to collect all roof runoff.
- 17. All drainage must be directed into a leaching type catch basin before being discharged towards or into any wetland or surface water body. All catch basins must incorporate measures to insure the removal of pollutants such as oil and gas and must provide for adequate sediment retention. The basins and oil absorbent material shall be regularly cleaned and maintained.
- 18. Any refuse material generated through the project construction will be removed to an approved landfill, and in no case will these materials be allowed to be buried or disposed of on site or on abutting property. **REMOVAL MUST BE DONE WEEKLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. REFUSE MUST NOT BE ALLOWED TO ENTER ANY WETLAND AREAS.**
- 19. Used petroleum products from the operation or maintenance of construction equipment and construction debris shall be collected weekly and disposed of off-site at an approved landfill. No on-site disposal is permitted.
- 20. Only rubber tired or tracked vehicles utilizing swamp mats/planks will be permitted to traverse the following resource areas: beaches, dunes, and saltmarshes.
- 21. Use of heavy equipment shall be confined to inside the limit of work as shown on the Plan of Record. All work shall be accomplished from the UPLAND side of the limit of work line.
- 22. The use of heavy equipment upon the saltmarsh, dunes or coastal beach is PROHIBITED. All work within these resource areas must be done by hand or with suitable equipment approved by the Commission
- 23. The proposed stairs shall be elevated \_\_\_ feet above the existing grade. All pilings should be supported by SONO tube footings. Excavated materials shall be removed from the coastal bank.
- 24. Driveway must be constructed out of pervious material in perpetuity.
- 25. A landscaping plan including the size, quantity, species and location of plantings including square footage of lawn, mulch, etc. must be submitted and approved by the Conservation Agent and/or the Commission prior to receiving the occupancy permit.
- 26. All vegetation must be predominantly native and non-invasive. All plants must be allowed to grow to maturity before pruning. All plantings will be monitored for a minimum of two growing seasons and any plants that do not survive must be replaced.

\*\*\* (Post Construction) \*\*\*

- 27. Upon completion of your project you must apply for a Certificate of Compliance. This Order will not be considered complied with until the Certificate of Compliance has been requested, granted and RECORDED at the Registry of Deeds in Barnstable. To insure timely issuance of the Certificate of Compliance you must request the Certificate within 30 days of the completion of your project.
- 28. Prior to the issuance of a Certificate of Compliance, the project engineer or consultant shall certify that the project has been completed in compliance with this Order and the original Plan

of Record. Any variations from the approved plan should be clearly noted and reasons given to justify the noncompliance. (see Bylaw condition/requirement also)

29. An as-built plan, signed and stamped by a registered professional engineer or land surveyor in the Commonwealth of Massachusetts shall be submitted to the Commission at the same time as a written request for a Certificate of Compliance and shall specify how the completed plan differs from that shown on the plans referred to in the Order of Conditions. The as-built plan shall include, but not be limited to the following:

All pipe/culvert inverts for inflow and outfalls, pipe slope, size and composition; location of other drainage structures; limits of fill or alteration; location of any structure and pavement within 100' of any wetland resource area (including the top of the coastal bank); the edge of each wetland resource area; the grade contours within 100' of the wetland resource areas

### **SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7**

1. The total lawn area for this lot shall not exceed \_\_\_ s.f. Lawn fertilizer is a known source of nitrogen loading, which causes pollution of coastal waters. Phosphates are known causes of freshwater eutrophication.
2. All new habitable buildings, and accessories thereto, shall be setback at least fifty (50) feet from any wetland resource area as per Article 3.7 Town of Bourne Wetlands Protection By-Laws unless the Commission has specifically approved a lesser setback distance.
3. A Minimum distance of \_\_\_ feet of natural vegetation (buffer zone) must be maintained between any resource area and altered area.
4. No clear-cutting of standing trees, brush, or surface vegetation is allowed outside of the approved limit of work as shown on the approved Plan of Record. Any additional vista pruning or vegetation removal not identified on the Plan of Record will require additional coordination and/or filing with the Conservation Commission.
5. All excavation will immediately halt if any historical or archeological artifacts are uncovered and the Applicant will report this information immediately to the Commission, the Town of Bourne Historical Commission and the Massachusetts Historical Commission. Failure to report this information will be grounds to revoke this permit.
6. During construction for this project, an on-site foreman, directing engineer or designated construction manager and the excavating contractor shall have a copy of this Order at the site, shall familiarize him or herself with the conditions of this permit, and shall adhere to said conditions.
7. To insure timely issuance of the Certificate of Compliance, requests should be made within 30 days of the completion of the project.
8. In order to determine whether or not the Order of Conditions (OOC) has been properly complied with, the Commission requires that you provide a copy of the foundation As-built. This is necessary to determine if you have complied with your original Plan of Record and Notice of Intent prior to the Commission issuing the Certificate of Compliance.
9. The installation of a garbage grinder is strictly PROHIBITED under this Order of Conditions and it is recommended that the applicant have the Septic System serviced (checked & pumped if necessary) every two years. This condition shall continue in perpetuity.
10. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Section

10 and/or Section 404 Permit from the United States Army Corps of Engineers for the proposed project.

- 11. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Water Quality Certificate from the DEP Division of Water Pollution Control relative to 401
- 12. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a License from the DEP Division of Wetlands and Waterways relative to Chapter 91, The Public Waterfront Act & its regulations at 310 CMR 9.00.

\*\*\* (Docks, Piers, Floats, Dredging, etc.) \*\*\*

- 13. Post dredging soundings shall be made by the project engineer and submitted to the Con-Com for review.
- 14. The structure shall be continuously maintained in a manner that will insure safe use and shall be subject to inspection by the Harbormaster at anytime.
- 15. The public shall not be hindered from free access over or under the proposed structure for the purposes of fishing or fowling between the tide lines.
- 16. The structure shall be subject to annual review and approval by the Harbormaster in accordance with M.G.L. Chapter 91, Section 10A and/or current Town of Bourne Waterways Regulations.
- 17. No ramps, floats or other parts of the proposed structure are to be stored upon the saltmarsh, coastal dune, coastal bank or any other wetland resource area except the floodzone. All floats and other seasonal structures must be removed from the waterways from October 15 to April 1st and stored in a suitable UPLAND AREA.
- 18. Any changes in the configuration of the proposed structure would require an additional filing with the Commission and/or approval of the Harbormaster.
- 19. Any shellfish that must be relocated as a result of the proposed construction will be done at the applicant's expense and under the direction of the Department of Natural Resources (Shellfish Warden)
- 20. Should the proposed float(s) and/or other parts of the proposed structure break loose it will be the responsibility of the applicant to recover same and repair any damage to property of other parties that occurred due to the loose structure.
- 21. If it should be determined at a later date that this structure is an interference to navigation, the applicant will be required to down size the structure accordingly under the direction of the Harbormaster.
- 22. Piles must be driven, not jetted into the substrate.
- 23. Only non-leaching CCA treated lumber/piles or galvanized steel piles will be permitted for use on structures that will be placed into the water. No creosote is allowed.
- 24. Deck spacing must be spaced at 3/4 - 1" apart to allow for light penetration to the vegetation below the decking.
- 25. If ice damage or extreme weather conditions cause piling(s) to be damaged, an RDA must be filed to restore the stability, safety and function of the structure. The Conservation Commission may use discretion for cases that may disturb the wetland resource areas to a point that may require the filing of a Notice of Intent.

## ADDITIONAL SPECIAL CONDITIONS

### Conditions required by Natural Heritage and Endangered Species Program

ASC-1) For Buttermilk Bay, Little Buttermilk Bay, Cohasset Narrows, Gibbs Narrows, Phinney's Harbor, Little Bay, Barlow's Landing, & Pocasset Harbor, dredging operations must occur May 1 – October 31. This will avoid direct impacts to Diamond-backed Terrapin while overwintering with the sediment of basis, channels and estuaries.

- a. If the sediment analysis at these sites has demonstrated that the proposed dredging will be comprised of sandy material with little or no silty material (90% or greater sand with less than 10% fines), then the sediment analysis must be submitted to the Division along with the proposed dredge location and total dredge amount (cubic yards). The Division will review the information and provide a written response regarding whether the dredging can proceed during the time of year restriction (November 1 – April 30).

ASC-2) Monks Cove Beach/Mud Beach:

- a. Prior to any placement of beach nourishment/beneficial reuse of sand, the Applicant must submit a proposed plan of access with photographs depicting the access route and nourishment location to the Division for review and written approval. After receipt, the Division will determine if a plant survey is required. Please note, if all access and sand deposition is limited to the southernmost site at Monks Cove, the Division may not require a plant survey prior to access and deposition.

ASC-3) Shore Road Dewatering and Nourishment:

- a. During the period June 15 – October 15, all placement and removal of material at the Shore Road is prohibited in order to protect Diamond-backed Terrapin habitat.

ASC-4) Sagamore Beach Nourishment (Standish Road and Sagamore Road):

- a. Beach nourishment is prohibited during the period of April 1- August 31, to protect nesting coastal birds.
- b. All beneficial reuse of sand shall be placed at a slope no steeper than 10:1 (horizontal: vertical) as depicted on the TOWN OF BOURNE TEN YEAR COMPREHENSIVE DREDGING AND DISPOSAL PERMIT TO ACCOMPANY A NOTICE OF INTENT Sheet 27 of 27 (dated 11/9/18 last revision 3/29/2019) prepared by BSC Group, Inc.
- c. Vegetation shall not be planted and sand fencing shall not be erected in areas of beach nourishment, unless otherwise approved in writing by the Division.
- d. The applicant has the responsibility of protecting breeding Piping Plovers and state-listed species of terns that may be attracted to beach nourishment areas, as well as their eggs and unfledged chicks. The applicant must implement a Division-approved monitoring and protection plan for Sagamore Beach nourishment sites for a minimum of three consecutive years following any nourishment activity.
- i. Each year, beginning April 1, a qualified shorebird monitor, approved by the Division, shall determine whether territorial, courting, or nesting Piping Plovers or state-listed species of terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat, breeding adults, nests, and chicks from disturbance or human-caused mortality. These fenced areas shall be managed in accordance with the Massachusetts Division of Fisheries and Wildlife document of April 1993 titled Guidelines For Managing Recreational Use Of Beaches To Protect Piping Plovers, Terns, And Their Habitats In Massachusetts.
- ii. Monitoring shall occur at least 2 times per week until at least July 1. However, if Piping Plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed. A report shall be submitted to the Division each year that summarizes the results of the state-listed species monitoring and site protection activities.

ASC-5) Upon filing for renewal, extension, or amendment of the Orders of Conditions, the applicant shall contact the Division for written response regarding impacts to Resource Area habitat of state-listed wildlife.

### **Conditions based upon Recommendations from Division of Marine Fisheries**

ASC-6) Pre-dredge eelgrass surveys shall be performed during the growing season (June-September) to determine the presence and location of eelgrass. Since eelgrass beds can be ephemeral (occurring in some locations for short periods of time), changes to eelgrass that have occurred since previous dredging events should be identified prior to all dredging activities. MassDEP mapping of eelgrass should not be the only source of information used to identify eelgrass.

ASC-7) Dredging should be prohibited within 100' of all eelgrass beds to protect these important special aquatic sites. For any regions where dredging will occur within 100 feet of eelgrass (e.g., Gray Gables), MA DMF recommends pre- and post-dredge monitoring and, if eelgrass loss is detected post-dredge, mitigation will be warranted. A minimum replacement ratio of 4:1 will likely be needed to replicate the functional value of the lost eelgrass. Due to the challenges associated with restoring eelgrass, we highly recommend avoiding impact to eelgrass.

ASC-8) Any identified eelgrass bed edges should be demarcated with a buoy line to ensure the 100' buffer.

ASC-9) Adequate containment measures such as silt curtains should be required when dredging near eelgrass beds to minimize the impacts of fine grain sediments on this valuable resource area. Studies indicate that as little as 2 to 4 cm of sand burial can result in 70 to 90% mortality of eelgrass [13,14].

ASC-10) Anchoring the barge in the eelgrass beds while not in use could damage sensitive resource areas and is prohibited.

ASC-11) The top of the dredge slope must maintain a buffer of at least 25' from the MLW line to prevent slumping of the intertidal flats. The top of the dredge slope must also maintain a buffer from any bordering salt marsh of at least 25 feet to reduce the risk of slumping and erosion impacts to this resource.

ASC-12) No intertidal dredging shall take place. Intertidal flats provide productive marine habitats for numerous marine species and should be afforded additional consideration.

ASC-13) Shellfish surveys shall be performed at least six months prior to dredging to determine species presence and the densities of shellfish within the dredge areas. The type and extent of the shellfish survey shall be determined by the Town of Bourne's DNR Director and the MA DMF area biologist. The survey shall be conducted by the Town of Bourne's DNR personnel and a MA DMF biologist.

ASC-14) The Town of Bourne's DNR Director shall notify, in writing, of their findings to the MA DMF Habitat Program, shellfish classification biologist, and Aquaculture Coordinator.

ASC-15) If the quantity of shellfish is deemed sufficient to relay (in a closed shellfish area), the town should obtain a relay permit. In addition, if the area is classified as approved or conditionally approved, a propagation permit may need to be obtained/amended to move the shellfish from the dredge track.

ASC-16) Local aquaculture operators shall be notified well in advance prior to dredging to avoid impacts to these operations. Ample time should be given to permit holders if an amendment to their propagation permit is needed.

ASC-17) Beach fill material should be of equal grain size and appropriate slope to avoid premature loss from the beach and impacts to near-shore bottom habitat consistent with Mass DEP's Beach Nourishment Guide [15]. When placing fill on the beach, every effort should be taken not to significantly change the slope of the beach.

ASC-18) Beach fill material shall maintain a minimum 25' buffer from bordering salt marsh. If salt marsh has been impacted or lost, this loss may require mitigation at the state or federal levels of the permitting process.

ASC-19) Nourishment material shall be placed above the MHW line to the greatest extent possible. Placing this material high on the beach facilitates a more gradual distribution of sediment, allowing mobile organisms to avoid the area of impact and burrowing organisms to respond to a smaller sediment load [16]. For shorelines bordering nearshore eelgrass beds, depositing nourishment material above MHW will help to minimize potential eelgrass burial and mortality [13,14].

ASC-20) The dewatering areas shall be contained so spill and/or runoff does not impact nearby salt marsh or shellfish habitat.

ASC-21) This Order automatically includes the Time of Year restrictions included as Attachment 2 of the May 9, 2019 Division of Marine Fisheries letter.

General condition Number(s), Special Condition Number(s), Bylaw Conditions Number(s) above shall continue in perpetuity beyond the limitations of this Order and with the sale of the property to others.

The Applicant is reminded of his/her right to Appeal this Order or any part herein. This Appeal must be a dual appeal to both DEP within 10 days and to Superior Court pursuant to M.G.L c. 249 s. 4 within 60 calendar days of the issuance of this Order of Conditions.



MASSWILDLIFE

# DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

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April 19, 2019

Bourne Conservation Commission  
24 Perry Avenue, Room 201  
Buzzards Bay MA 02532

Town of Bourne Selectman  
c/o Timothy Mullen  
24 Perry Avenue  
Buzzards Bay MA 02532

RE:      Applicant:                      Town of Bourne Selectmen c/o Timothy Mullen  
         Project Location:                Various - 13 Maintenance Dredge Sites and 12 Beach Nourishment Sites  
         Project Description:            10 Year Comprehensive Dredge and Beach Nourishment Plan  
         DEP Wetlands File No.:        007-2052  
         **NHESP File No.:**                **19-38503**

Dear Commissioners & Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received an updated Project Description and site plans (dated November 9, 2018, revised 2/6/19) for review in conjunction with the Notice of Intent (received January 2019) for the Town of Bourne 10-Year Comprehensive Dredge Permit submitted in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37, 10.58(4)(b)). The Division also received the MESA Review Checklist and supporting documentation for review pursuant to the MA Endangered Species Act Regulations (321 CMR 10.18).

The Division has determined that the Project, as currently proposed, is located within the mapped *Priority* and *Estimated Habitat* as indicated in the *Massachusetts Natural Heritage Atlas* (14<sup>th</sup> Edition) for the state-listed species presented in the following table. These species and their habitats are protected pursuant to the WPA and the MESA. Fact sheets for state-listed species can be found at [www.mass.gov/nhesp](http://www.mass.gov/nhesp).

Scientific Name	Common Name	Taxonomic Group	State Status
<i>Charadrius melodus</i>	Piping Plover	Bird	Threatened*
<i>Sternula antillarum</i>	Least Tern	Bird	Special Concern
<i>Sterna hirundo</i>	Common Tern	Bird	Special Concern
<i>Sterna dougallii</i>	Roseate Tern	Bird	Endangered*
<i>Malaclemys terrapin</i>	Diamond-backed Terrapin	Reptile	Threatened
<i>Liatrix scariosa var. novae-angliae</i>	New England Blazing Star	Plant	Special Concern

MASSWILDLIFE

\*The Piping Plover and Roseate Tern are federally protected as “Threatened” and “Endangered”, respectively, pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11).

The Town of Bourne is consolidating various permits for maintenance dredging and beach nourishment sites into a 10-year comprehensive dredge permit to simplify permitting and establish a long-term management plan for these activities. The 10-year comprehensive permit includes the following sites:

<b>Maintenance Dredge Sites:</b>		<b>Beach Nourishment Sites:</b>	
Little Buttermilk Bay	Pocasset River	Sagamore Beach	Bassett Island Disposal Site
Gibbs Narrows	Pocasset Harbor	Electric Avenue Beach	Hen Cove: Patuisset
Buttermilk Bay	Barlow’s Landing	Grey Gables Beach	Hen Cove: Circuit Ave
Cohasset Narrows	Red Brook Harbor	Monument Beach	Hen Cove: Bell Buoy Ave
Grey Gables	Hen Cove	Mud Cove/Monks Park	Barlow’s Landing
Phinney’s Harbor	Hospital Cove	Shore Road	Squeteague Harbor Beach
Little Bay			

The purpose of the Division’s review of the proposed project under the WPA regulations is to determine whether the project will have any adverse effects on the Resource Areas Habitats of state-listed species. The purpose of the Division’s review under the MESA regulations is to determine whether a Take of state-listed species will result from the proposed project.

**WETLANDS PROTECTION ACT (WPA) & MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)**

Based on the information provided and the information contained in our database, it is the opinion of the Division that this project, as currently proposed, **must be conditioned in order to avoid adverse effects** to the Resource Area Habitats of state-listed wildlife species (310 CMR 10.37) and **must be conditioned in order to avoid a prohibited Take** of state-listed species (321 CMR 10.18(2)(a)). The following conditions must be met to protect state-listed species and their habitats:

**Maintenance Dredge Sites:**

Timing Restrictions:

- 1) For Buttermilk Bay, Little Buttermilk Bay, Cohasset Narrows, Gibbs Narrows, Phinney’s Harbor, Little Bay, Barlow’s Landing, & Pocasset Harbor, dredging operations must occur May 1 – October 31. This will avoid direct impacts to Diamond-backed Terrapin while overwintering with the sediment of basis, channels and estuaries.
  - a. If the sediment analysis at these sites has demonstrated that the proposed dredging will be comprised of sandy material with little or no silty material (90% or greater sand with less than 10% fines), then the sediment analysis must be submitted to the Division along with the proposed dredge location and total dredge amount (cubic yards). The Division will review the information and provide a written response regarding whether the dredging can proceed during the time of year restriction (November 1 – April 30).

**Beach Nourishment Activities:**

- 2) Monks Cove Beach/Mud Beach:
  - a. Prior to any placement of beach nourishment/beneficial reuse of sand, the Applicant must submit a proposed plan of access with photographs depicting the access route and nourishment location to the Division for review and written

approval. After receipt, the Division will determine if a plant survey is required. Please note, if all access and sand deposition is limited to the southernmost site at Monks Cove, the Division may not require a plant survey prior to access and deposition.

- 3) Shore Road Dewatering and Nourishment:
  - a. During the period June 15 – October 15, all placement and removal of material at the Shore Road is prohibited in order to protect Diamond-backed Terrapin habitat.
  
- 4) Sagamore Beach Nourishment (Standish Road and Sagamore Road):
  - a. Beach nourishment is prohibited during the period of **April 1- August 31**, to protect nesting coastal birds.
  - b. All beneficial reuse of sand shall be placed at a slope no steeper than 10:1 (horizontal: vertical) as depicted on the “TOWN OF BOURNE TEN YEAR COMPREHENSIVE DREDGING AND DISPOSAL PERMIT TO ACCOMPANY A NOTICE OF INTENT” Sheet 27 of 27 (dated 11/9/18 last revision 3/29/2019) prepared by BSC Group, Inc.
  - c. Vegetation shall not be planted and sand fencing shall not be erected in areas of beach nourishment, unless otherwise approved in writing by the Division.
  - d. The applicant has the responsibility of protecting breeding Piping Plovers and state-listed species of terns that may be attracted to beach nourishment areas, as well as their eggs and unfledged chicks. The applicant must implement a Division-approved monitoring and protection plan for Sagamore Beach nourishment sites for a minimum of three consecutive years following any nourishment activity.
    - i. Each year, beginning April 1, a qualified shorebird monitor, approved by the Division, shall determine whether territorial, courting, or nesting Piping Plovers or state-listed species of terns are present at beach nourishment areas and if so, shall erect and maintain warning signs and symbolic fencing to protect nesting habitat, breeding adults, nests, and chicks from disturbance or human-caused mortality. These fenced areas shall be managed in accordance with the Massachusetts Division of Fisheries and Wildlife document of April 1993 titled *Guidelines For Managing Recreational Use Of Beaches To Protect Piping Plovers, Terns, And Their Habitats In Massachusetts*.
    - ii. Monitoring shall occur at least 2 times per week until at least July 1. However, if Piping Plovers or terns are found to be using the site, then monitoring frequency shall be increased to at least 3 times per week, and shall continue until all nesting and brood-rearing activity has been completed. A report shall be submitted to the Division each year that summarizes the results of the state-listed species monitoring and site protection activities.

**Amendments/Notice:**

- 5) Upon filing for renewal, extension, or amendment of the Orders of Conditions, the applicant shall contact the Division for written response regarding impacts to Resource Area habitat of state-listed wildlife.

**Authorization Duration:**

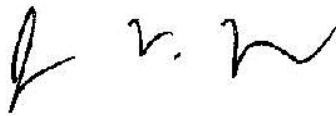
- 6) This determination is valid for five (5) years. Subject to Division review and approval, the applicant has an option to renew this determination for an additional five (5) years.

Provided these conditions are included in any approving Orders of Conditions issued by the Conservation Commission, and the applicant complies with all the above noted conditions, the project will not result in an adverse impact to the resource area habitats of state-listed wildlife species pursuant to the WPA and will not result in a prohibited Take pursuant to the MESA. A copy of the final Order of Conditions shall be sent to the Division simultaneously with the applicant as stated in the Procedures section of the WPA (310 CMR 10.05(6)(e)).

We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans requires additional review - *and may require an additional filing* - with the Division pursuant to the MESA.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Amy Hoenig, Endangered Species Review Biologist, at (508) 389-6364.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. V. Regosin', written in a cursive style.

Jonathan V. Regosin, Ph.D.  
Deputy Director

cc: Matthew Creighton, BSC Group  
MA DEP Southeast Region



**David E. Pierce, Ph.D.**  
*Director*

# *Commonwealth of Massachusetts*

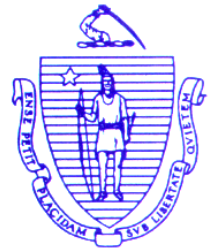
## **Division of Marine Fisheries**

251 Causeway Street, Suite 400

Boston, Massachusetts 02114

(617)626-1520

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**Charles D. Baker**  
*Governor*

**Karyn E. Polito**  
*Lieutenant Governor*

**Matthew A. Beaton**  
*Secretary*

**Ronald Amidon**  
*Commissioner*

**Mary-Lee King**  
*Deputy Commissioner*

May 9, 2019

Bourne Conservation Commission  
Town Hall  
24 Perry Avenue  
Buzzards Bay, MA 02532

Dear Commissioners:

The Division of Marine Fisheries (MA DMF) has reviewed the Notice of Intent (NOI) by the Town of Bourne for their proposed “phased” 10-year comprehensive dredge permit combining all the town’s dredging, beach nourishment, dewatering, and disposal sites into one permit within the Town of Bourne. The combined dredged volume of 71,383 cubic yards will be taken from a combined area of 1,521,136 square feet (NOI, p 4 of 9). Approximately 49,359 cubic yards of suitable sediment will be used to fill approximately 419,243 square feet of coastal beaches within the town (NOI, p 4 of 9). A breakdown of the individual sites is provided in Attachment 1. Any material not suitable for beach fill will be disposed of at the Bourne landfill. Existing marine fisheries resources and potential project impacts to these resources are outlined in the following paragraphs.

The areas being proposed for dredging and disposal have optimal habitat for shellfish, winter flounder, submerged aquatic vegetation (e.g. eelgrass or widgeon grass), and horseshoe crabs. Impacts to these resources should be avoided.

Many of the dredge sites lie within and/or adjacent to mapped shellfish habitat for soft shell clam (*Mya arenaria*), quahog (*Mercenaria mercenaria*), bay scallop (*Argopecten irradians*), American oyster (*Crassostrea virginica*), blue mussel (*Mytilus edulis*), razor clam (*Ensis directus*), and surf clam (*Spisula solidissima*). Subtidal waters within the project site have habitat characteristics suitable for these species. Land containing shellfish is deemed significant to the interest of the Wetlands Protection Act (310 CMR 10.34) and the protection of marine fisheries.

MA DMF has identified the dredge areas as winter flounder (*Pseudopleuronectes americanus*) spawning habitat. Winter flounder enter the area and spawn from January through May, laying clumps of eggs directly on the substrate. These demersal eggs hatch approximately fifteen to twenty days later. The Atlantic States Marine Fisheries Commission has designated winter flounder spawning habitat as “Habitat Areas of Particular Concern” (HAPC). A recent stock assessment has determined that Southern New England/Mid Atlantic winter flounder populations are at only 23% of the recommended recovery level [1]. Because of the winter flounder stock status, every effort should be made to protect winter flounder and their spawning habitat.

Salt marsh vegetation is present along some of the shorelines. Salt marsh provides a variety of ecosystem services, including habitat and energy sources for many fish and invertebrate species [2,3,4].

Eelgrass (*Zostera marina*) is found throughout Bourne coastal waters. Declining water quality due to human activity is responsible for large losses of this important habitat throughout the state [5]. The state lacks fully comprehensive eelgrass maps, and the beds are ephemeral (occurring in some locations for short periods of time). Eelgrass beds provide one of the most productive marine habitats for numerous marine species [6,7]. They are designated “special aquatic sites” under the Federal Clean Water Act 404(b) (1) guidelines. Every effort should be made to protect eelgrass beds.

Herring (Monument) River, Cape Cod Canal, Pocasset River, Buttermilk Bay, and Red Brook Harbor (Red Brook outlet) serve as diadromous fish passage, migration and spawning habitat for alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), and American eel (*Anguilla rostrata*). Red Brook Harbor also supports tomcod (*Microgadus tomcod*) resources. MA DMF has placed a ban on the harvest of river herring due to drastic declines in their populations. Division biologists emphasize the need for risk averse management to protect these species.

Spawning beaches for horseshoe crabs (*Limulus polyphemus*) occur throughout Bourne. Horseshoe crabs deposit their eggs in the upper intertidal regions of sandy beaches from late spring to early summer during spring high tides [8]. Adult crabs congregate in deep waters such as channel areas during the day while waiting to move onto the beaches at night to spawn. The eggs hatch approximately two to four weeks later. Since the nest sites do not have markings to allow for identification, they are particularly vulnerable to human activity. Nesting habitat is sensitive to several abiotic factors (e.g., sand particle size, dissolved oxygen concentration, temperature, moisture) [9,10]. Recent stock assessments show a decline in horseshoe crab abundance in the New England region [11], highlighting the need to protect spawning assemblages.

In order to protect spawning and juvenile development for winter flounder, horseshoe crabs, shellfish, and anadromous species, MA DMF recommends time-of-year restrictions (TOYs) that define periods of the year when marine resources are most vulnerable to dredging and fill activities [12]. The winter flounder TOYs are between **January 15 – May 31**, diadromous TOYs are between **February 15 - June 30**, horseshoe crab TOYs for dredging are between **May 1 – June 30**, horseshoe crab TOYs for filling are between **May 1 – July 31**, and the shellfish TOYs are between **May 1 – September 30** [12].

MA DMF offers the following comments for your consideration:

**General recommendations:**

- All plans should identify the MHW and MLW contours.
- A set of maps should identify natural resources including salt marsh, eelgrass (including multiple years of DEP mapping, including the most recent 2015-2017), and shellfish suitability areas. These maps should include the extent of dewatering, dredging, or filling activities. Please provide this information in a Google Earth or ArcGIS format.
- The proponent should complete the table provided in Attachment 1 and confirm the values currently listed.
- All monitoring plans (e.g., shellfish, eelgrass, and salt marsh) should be provided and where and when they will be used should be indicated.

### **Recommendations for Dredging Activities:**

- Our recommended TOYs for the dredge and fill sites in Bourne are provided in Attachment 2. Sites not listed in Attachment 2 do not have TOY recommendations.
- Pre-dredge eelgrass surveys should be performed during the growing season (June-September) to determine the presence and location of eelgrass. Since eelgrass beds can be ephemeral (occurring in some locations for short periods of time), changes to eelgrass that have occurred since previous dredging events should be identified prior to all dredging activities. MassDEP mapping of eelgrass should not be the only source of information used to identify eelgrass.
- Dredging should be prohibited within 100' of all eelgrass beds to protect these important special aquatic sites.
- For any regions where dredging will occur within 100 feet of eelgrass (e.g., Gray Gables), MA DMF recommends pre- and post-dredge monitoring and, if eelgrass loss is detected post-dredge, mitigation will be warranted. A minimum replacement ratio of 4:1 will likely be needed to replicate the functional value of the lost eelgrass. Due to the challenges associated with restoring eelgrass, we highly recommend avoiding impact to eelgrass.
- MA DMF recommends that any identified eelgrass bed edges should be demarcated with a buoy line to ensure the 100' buffer.
- Adequate containment measures such as silt curtains should be required when dredging near eelgrass beds to minimize the impacts of fine grain sediments on this valuable resource area. Studies indicate that as little as 2 to 4 cm of sand burial can result in 70 to 90% mortality of eelgrass [13,14].
- Anchoring the barge in the eelgrass beds while not in use could damage sensitive resource areas and should be prohibited.
- MA DMF recommends the top of the dredge slope maintain a buffer of at least 25' from the MLW line to prevent slumping of the intertidal flats.
- MA DMF recommends the top of the dredge slope maintain a buffer from any bordering salt marsh of at least 25 feet to reduce the risk of slumping and erosion impacts to this resource.
- Not all plans depicted the MHW and MLW lines. MA DMF recommends no intertidal dredging take place. Intertidal flats provide productive marine habitats for numerous marine species and should be afforded additional consideration.
- Habitat loss associated with intertidal dredging may require mitigation.

### **Recommendations for Dredging Activities As It Relates to Shellfish:**

- Shellfish surveys shall be performed at least six months prior to dredging to determine species presence and the densities of shellfish within the dredge areas.
- The type and extent of the shellfish survey shall be determined by the Town of Bourne's DNR Director and the MA DMF area biologist.
- The survey shall be conducted by the Town of Bourne's DNR personnel and a MA DMF biologist.
- The Town of Bourne's DNR Director shall notify, in writing, of their findings to the MA DMF Habitat Program, shellfish classification biologist, and Aquaculture Coordinator.
- If the quantity of shellfish is deemed sufficient to relay (in a closed shellfish area), the town should obtain a relay permit. In addition, if the area is classified as approved or conditionally approved, a propagation permit may need to be obtained/amended to move the shellfish from the dredge track.
- Local aquaculture operators shall be notified well in advance prior to dredging to avoid impacts to these operations.

- Ample time should be given to permit holders if an amendment to their propagation permit is needed.

### **Recommendations for Disposal Activities:**

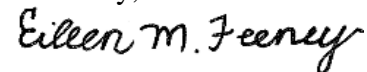
- Our recommended TOYs for the dredge and fill sites in Bourne are provided in Attachment 2. Sites not listed in Attachment 2 do not have TOY recommendations.
- Beach fill material should be of equal grain size and appropriate slope to avoid premature loss from the beach and impacts to near-shore bottom habitat consistent with Mass DEP's Beach Nourishment Guide [15]. When placing fill on the beach, every effort should be taken not to significantly change the slope of the beach.
- Construction equipment should not be allowed to transit on the intertidal areas during beach fill projects.
- Beach fill material should maintain a minimum 25' buffer from bordering salt marsh.
- If salt marsh has been impacted or lost, this loss may require mitigation at the state or federal levels of the permitting process.
- MA DMF supports the listed BMP of placing nourishment material above the MHW line to the greatest extent possible. Placing this material high on the beach facilitates a more gradual distribution of sediment, allowing mobile organisms to avoid the area of impact and burrowing organisms to respond to a smaller sediment load [16]. For shorelines bordering nearshore eelgrass beds, depositing nourishment material above MHW will help to minimize potential eelgrass burial and mortality [13,14].
- In the narrative under Section 4.0 Wetland Resource Areas, it states, "shellfish will be removed from the spoils and returned to the waterway." We would like more specifics regarding how this will be done. It might be more appropriate to reseed these areas, but this needs further consideration based on the individual site.

### **Recommendations for the Dewatering Basins:**

- The dewatering areas shall be contained so spill and/or runoff does not impact nearby salt marsh or shellfish habitat.

Questions regarding this review may be directed to Eileen Feeney in our New Bedford office at (508) 742-9721.

Sincerely,



Eileen M. Feeney  
Fisheries Habitat Specialist

cc: Matthew Creighton, BSC Group, Inc.  
Chris Southwood, Shellfish Constable  
Barbara Newman, ACOE  
Robert Boeri, CZM  
David Wong, Derek Standish, DEP  
John Mendes, DMF  
Greg Sawyer, DMF  
Tom Shields, DMF  
Ryan Nuttall, DMF

EF/m

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### Attachment 1 – Dredging Areas and Dewatering Areas

Plan Sheet	Phase	Embayment	maint. dredge	impr't dredge	dredge depth	cy to dredge depth	Overdredge depth	Overdredge cy	Total cy dredged	area of impact (sf)
3 of 27	I	Gibbs Narrows - 50' channel			-3	32	-4	43	75	1153
3 of 27	I	Gibbs Narrows - 50' channel			-3	10	-4	46	56	1426
4 of 27	I	Buttermilk Bay - 50' channel			-3		-4			
5 of 27	I	Cohasset Narrows - 50' channel			-3		-4			
6 of 27	I	Buttermilk Bay - 80' channel			-6		-7			
6 of 27	I	Buttermilk Bay - 50' channel			-3		-4			
9 of 27	I	Grey Gables			-6	4860	-7	4231	9391	121775
11 of 27	II	Phinney's HBR/Toby's Island			-8	5782	-9	460	6242	95990
11 of 27	II	Phinney's HBR/Toby's Island			-4		-5			
13 of 27	II	Little Bay - 100 channel	yes		-6	8526	-7	6583	15109	218504
13 of 27	II	Little Bay - 100 channel		yes	-7	1825	-8	1135	2960	31918
14 of 27	II	Pocasset River			-6	4695	-7	4425	9120	262408
20 of 27	III	Barlow's Landing - 60' channel	yes		-6	800	-7	1800	2600	63500
20 of 27	III	Barlow's Landing		yes	-3	2229	-4	1359	3588 (before 2017 dredging)	38404
22/23 of 27	III	Hen Cove - Inner area			-5					
22/23 of 27	III	Hen Cove - Outer area			-7				17450 (before 2016)	13.7 acres
25 of 27	III	Red Brook HBR/Bassett Island	excavated to form dike			5500			14100	
26 of 27	III	Hospital Cove			-8	203	-9	261	464	3841
26 of 27	III	Hospital Cove			-8	3992	-9	336	4328	85445

## Dewatering Areas

<b>Phase</b>	<b>Plan Sheet</b>	<b>Dewatering Basin</b>	<b>cy</b>	<b>sf of impact</b>
I	9 of 27	Dewatering basin	1800	7702
II	11 of 27	proposed dewatering basin		
II	14 of 27	parking lot		
II	14 of 27	Shore Road		
III	20 of 27	Barlow's Landing before 2017 dredging		
III	20 of 27	Barlow's Landing Dewatering	650	12769

**Attachment 2 – Town of Bourne TOY Table**

<b>Project Site</b>	<b>Dredge/Fill</b>	<b>Winter Flounder 1/15-5/31</b>	<b>Diadromous Alewife 4/1-6/15 Blueback 4/1-6/30 Eel 3/15-6/30</b>	<b>Horseshoe Crab Dredge 5/1-6/30 Fill 5/1-7/31</b>	<b>Shellfish TOY 5/1-9/30</b>	<b>Combined TOY</b>
Little Buttermilk Bay	D	Yes	alewife,blueback herring,eel	No	No	1/15-6/30
Buttermilk Bay	D	Yes	alewife,blueback herring,eel	Yes	No	1/15-6/30
Gibbs Narrows	D	Yes	No	No	No	1/15-5/31
Cohasset Narrows	D	Yes	alewife	Yes	No	1/15-7/31
Grey Gables	D	Yes	No	No	No	1/15-5/31
Phinney's Harbor	D	Yes	No	Yes	Yes	1/15-9/30
Little Bay	D	Yes	No	Yes	Yes	1/15-9/30
Pocasset River	D	Yes	eel	Yes	Yes	1/15-9/30
Barlow's Landing	D	Yes	No	Yes	Yes	1/15-9/30
Pocasset Harbor	D	Yes	No	No	Yes	1/15-9/30
Hen Cove	D	Yes	No	Yes	Yes	1/15-9/30
Hospital Cove	D	Yes	No	Yes	Yes	1/15-9/30
Gray Gables Beach	F	No	No	Yes	No	5/1-7/31
Monument Beach	F	No	No	Yes	Yes	5/1-9/30
Bassett's Island Disposal Site	F	No	No	Yes	No	5/1-7/31