

REPORT

Boston Alternative Energy Facility

Air Quality Deposition Monitoring Plan (Tracked)

Client: Alternative Use Boston Projects Ltd

Planning Inspectorate
Reference: EN010095

Document Reference: 9.51(2)

Pursuant to: APFP Regulation: N/A

Reference: PB6934-RHD-ZZ-XX-RP-Z-4075

Status: Final/2.0

Date: 15 May 2023



Technical Note

HaskoningDHV UK Ltd.
Industry & Buildings

To: National Infrastructure Planning
From: Alternative Use Boston Projects Limited
Date: ~~08 February 2022~~ 15 May 2023
Our reference: PB6934-ZZ-XX-NT-Z-4075
Reference: 9.51(42)
Planning Inspectorate EN010095
Reference:
Classification: Project related
Checked by: BDB Pitmans
Approved by: Paul Salmon

Subject: ~~Boston Alternative Energy Facility Examination: Deadline 6 Revised Air Quality Deposition Monitoring Plan~~ Boston Alternative Energy Facility Examination: Revised Air Quality Deposition Monitoring Plan, 15 May 2023

1 Introduction

1.1 Background

At the Issue Specific Hearing 2 (ISH2) into Environmental Matters on Wednesday 24 November 2021, Natural England provided the following as their Response to agenda item 3b (AS-001):

“ExA Question: “3b. [2.0.7 & 2.0.8]. Can NE outline measures which the Applicant could undertake to reduce risk of adverse effects from deposition on saltmarsh habitats?”

“Natural England advises that there is no standard best practice advice in relation to mitigation measures to reduce air quality impacts on saltmarsh habitats. It is dependent on the design and location of the source of the deposit. Therefore, we believe that the Applicant’s engineers are best placed to provide mitigation measures and/or project modifications to reduce air quality concerns.”

The Applicant provided an oral response to Examining Authority’s question at ISH2 where the following points were made (REP3-023):

- The assessment of the impacts of emissions from the Facility upon nitrogen deposition at saltmarsh habitats along The Haven was conducted on a worst-case basis, with the assumption that emissions of nitrogen oxides (NOx) and ammonia (NH₃) would be emitted at 100% of their permitted levels.
- In reality, as is demonstrated by the emissions monitoring results of all other EfW plants in the UK, typical emissions of NOx are at approximately 80% of the permitted level and NH₃ are at around 20% of the permitted level.
- Actual nitrogen deposition levels would, therefore, be lower than those assessed in the updated Environmental Statement Chapter 14 Air Quality (document reference 6.2.14, REP1-006), Table 14.35, page 68. The Environment Agency, in regulating the operation of the future facility through the Environmental Permit, would be most likely to set emission limits that ensure protection of the environment and this would almost certainly not be 100% of the allowable limits.

The Environment Agency observed at ISH2 that, in order to confirm the actual nitrogen deposition and ambient concentrations at the saltmarsh habitats, it could be possible to carry out monitoring at the saltmarsh locations. The Applicant agreed, observing that a period of baseline monitoring before operation of the facility would also be required, to provide a “before and after” picture.

Subsequently, in the Examining Authority’s Second Written Questions, the following Question was posed:

“Q2 2.0.4 Please would the Applicant provide further details regarding the number and locations for monitoring effects of deposition on the saltmarsh and designated sites. The Air Quality Deposition Monitoring Plan states that the aim is for one monitoring point within each area, but it is not clear from Figure 1, how many discrete areas of saltmarsh and designated sites there are and therefore how many monitoring points there will be.”

In addition, this document has been updated to address a comment raised by Natural England post-examination in its submission ‘Natural England’s updated advice on Air Quality’ dated 10th March 2023, as follows:

“Natural England advises that due to residual concerns in relation to succession/coarse grasses that additional ecological monitoring should be undertaken. We advise that the emission/ deposition monitoring strategy should also include baseline pre-construction ecological survey, during construction and operational ecological surveying is required which determines if impacts are as predicted and if greater ensure further mitigation measures will be implemented.”

This comment is addressed in **Section 5**.

1.2 This document

This revised Technical Note provides an update to the note submitted at Deadline 4 (document reference 9.51, REP4-016) by amending the plan showing the locations of the designated sites, to include indicative nitrogen deposition monitoring locations and some amended descriptive text. These monitoring locations can be seen in Figure 1 as appended to this document. It is expected that the final numbers and locations of deposition monitoring locations will be agreed with Natural England and the Environment Agency. The final Air Quality Deposition Monitoring Plan will form part of the Landscape and Ecological Mitigation Strategy secured by Requirement 6 of the draft DCO (document reference 2.1(2), REP3-003).

2 Outline Monitoring Plan

2.1 Saltmarsh and Designated Sites Areas and Monitoring Locations

There are a number of saltmarsh habitats and other locally-designated sites in the vicinity of the Application site, and these are shown on **Figure 1**. These are essentially linear in form, extending along both banks of The Haven. Contingent upon the results of a Health & Safety Risk Assessment, confirming safe access for personnel, it would be the aim to establish one representative monitoring point within each of the discrete areas of saltmarsh and other designated sites. Indicative locations for deposition monitoring pre-construction and during construction and operation of the facility are shown in **Figure 1**. A total of 9 locations have been identified by the Applicant for NO₂ and NH₃ monitoring and these will be confirmed with Natural England and the Environment Agency.

2.2 Monitoring methodology

It is proposed to deploy passive diffusion tubes for the purposes of monitoring ambient concentrations of compounds that contribute to nitrogen deposition, i.e., nitrogen dioxide (NO₂) and ammonia (NH₃). The diffusion tubes need no electricity and can be affixed to a normal wooden fencing post in the ground. They are left in place for a calendar month¹ in accordance with Defra guidance² and are then recovered and analysed in a UKAS-accredited laboratory. The measured ambient monthly average concentrations will then be accumulated into an annual average and the total nitrogen deposition will be calculated using established deposition velocities, applied to these annual average concentrations.

As the monitoring personnel will be making monthly visits to the sites, they will take photographs across each of the monitoring locations in order to record the conditions of the sites. These photographs will be made available to Natural England and the Environment Agency upon request.

2.3 Monitoring Programme

The operational monitoring would be conducted over a minimum of a calendar year, with the exact duration to be agreed. In addition, six months of monitoring would be required to be completed prior to commissioning and operation of the Facility, to provide a robust baseline against which to assess the potential impact of emissions from the Facility.

3 Reporting

Monthly short-form monitoring reports would be compiled by the Applicant and sent to an agreed list of recipients. These reports would also be made publicly available on the Facility website. At the end of the baseline period and the end of the first full year's operational monitoring, more detailed reports would be compiled and made publicly available, incorporating the deposition calculations and a summary of the emissions monitoring results from the Facility.

4 Plan Review and Updating

The final agreed Plan will be a live document and subject to regular review and updating by the Applicant, where necessary, in consultation with Natural England and the Environment Agency.

5 Ecological Monitoring

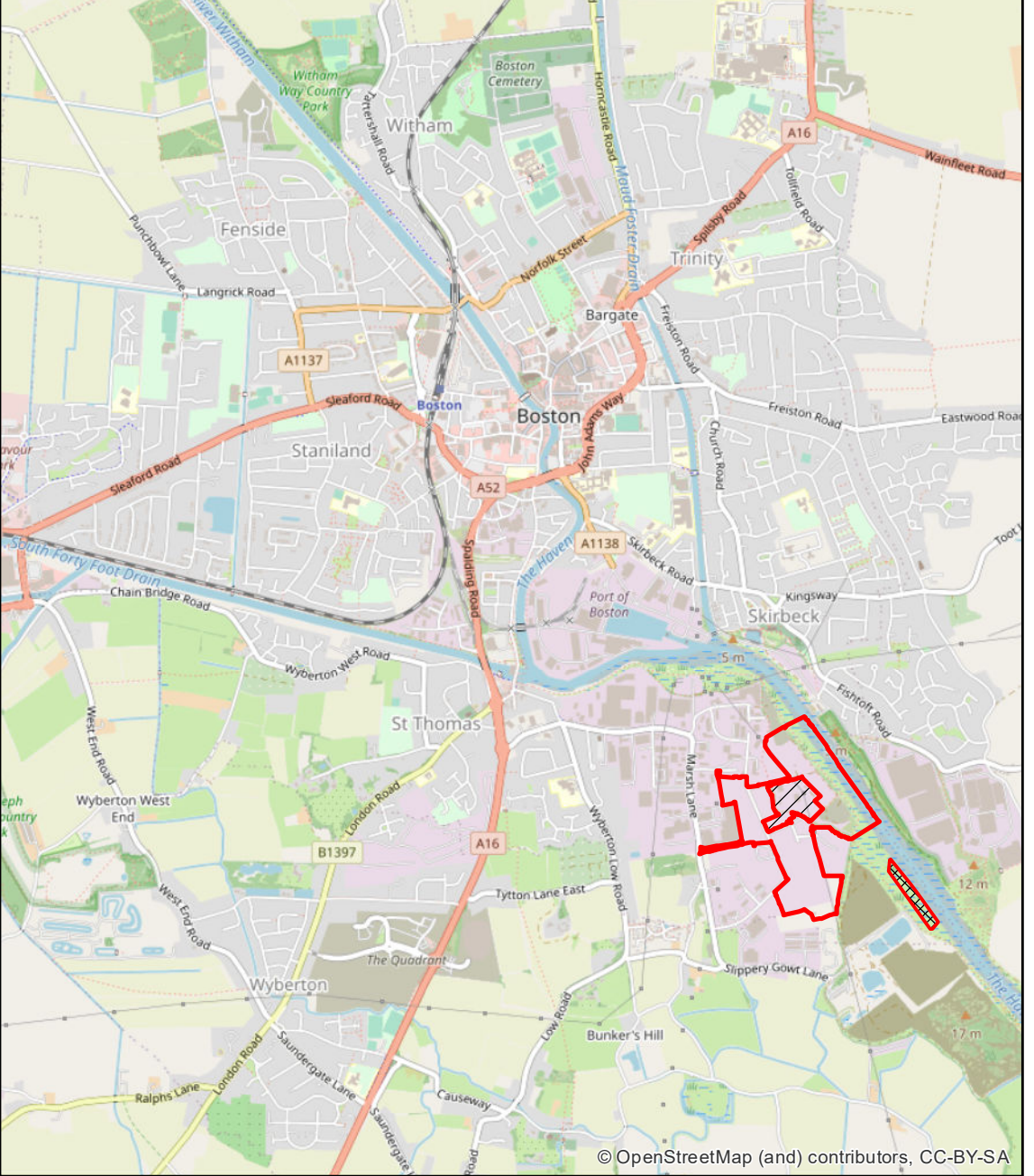
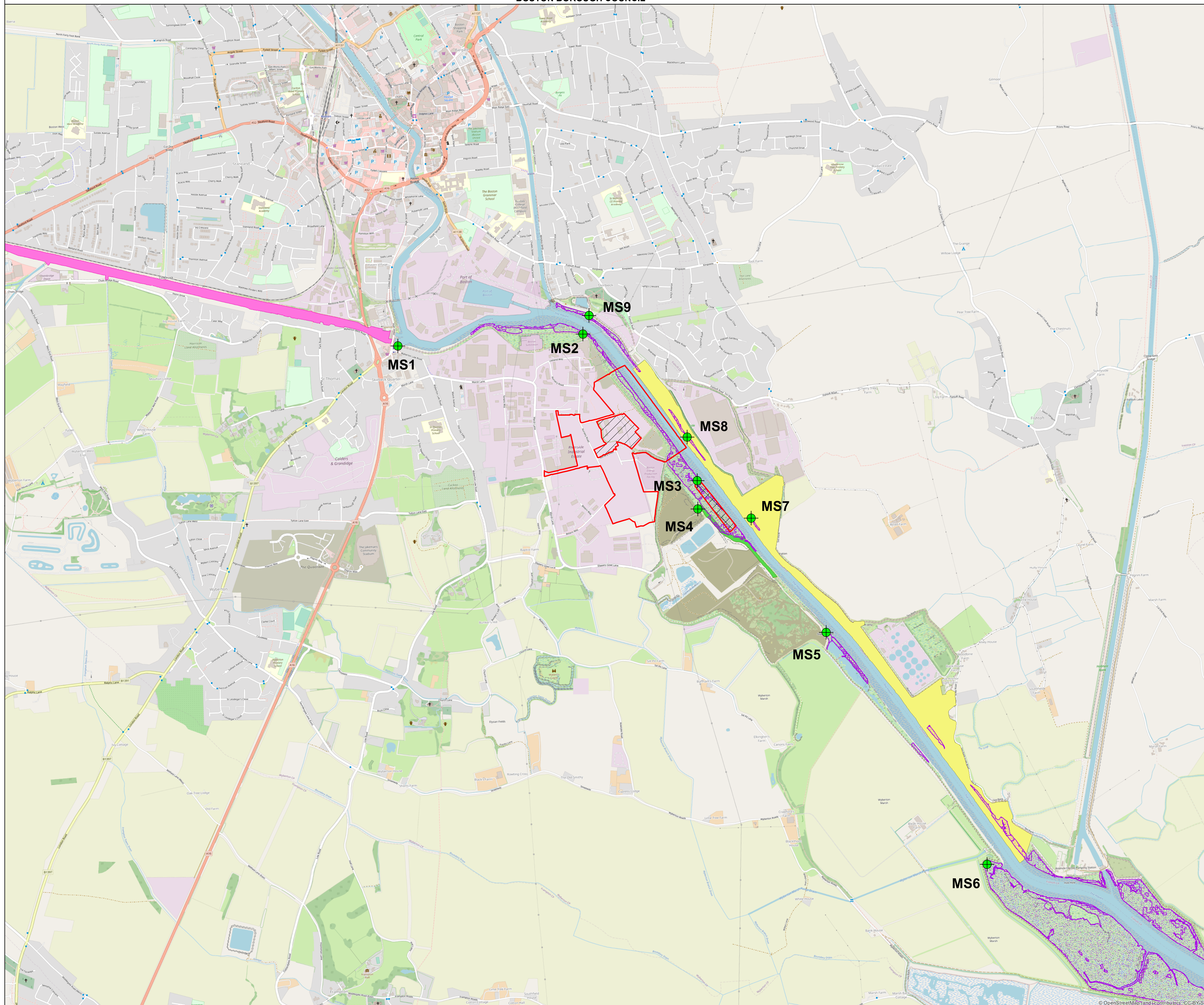
Ecological monitoring would be undertaken to establish any changes to the vegetation over time. This would be undertaken using quadrat monitoring within the saltmarsh areas and reference areas, together with general observations of the vegetation and health of the marsh in comparison to reference areas. The monitoring would be undertaken during pre-construction of the facility to establish a baseline, and then throughout operation, initially every three years (during summer) and depending on the results more or less frequently, with the agreement of Natural England. The final methodology would be agreed with Natural England. Should the sites show changes due to the changes in emission/deposition then further mitigation measures will be investigated and discussed with Natural England.

¹ Defra NO₂ Diffusion Tube Monitoring Calendar

² Defra Local Air Quality Management Technical Guidance (TG16), April 2021

FIGURE 1

**Designated Ecological Interest Sites
Around the Boston Facility**



Key

- Order limits
- Habitat Mitigation Area
- Land outside Order limits
- Areas of Saltmarsh
- Havenside
- Slippy Gowt Sea Bank
- South Forty Foot Drain
- Indicative Nitrogen Deposition monitoring location

Local Wildlife Sites

- Havenside
- Slippy Gowt Sea Bank
- South Forty Foot Drain

Royal HaskoningDHV
Enhancing Society Together

Rightwell House,
 Bretton,
 Peterborough, PE3 8DW
 Tel +44 (0)1733 334455
 Email info.peterborough@rhdhv.com
 Website www.royalhaskoningdhv.com

APPLICANT **ALTERNATIVE USE BOSTON PROJECTS LTD**

Disclaimer
 Do not scale from this drawing. Check all dimensions on site before fabrication or setting out. This document is copyright and may not be reproduced without permission of the owner.

REPRODUCED FROM ORDNANCE SURVEY MAPS
 WITH PERMISSION FROM
 THE CONTROLLER OF
 HER MAJESTY'S STATIONERY OFFICE.
 CROWN COPYRIGHT RESERVED.
 LICENCE NUMBER. 100017728

REV	DATE	DESCRIPTION	BY	CHK	APP
1	11/01/22	For submission			MCP AM PS
0	08/12/21	For submission			MCP AG PS

TITLE **BOSTON ALTERNATIVE ENERGY FACILITY DEVELOPMENT CONSENT ORDER Regulation 5(2)(o) - Designated Ecological Interest Sites Around the Boston Facility - Figure 1 BOSTON BOROUGH COUNCIL**

Application Number EN010095			
DRAWN MCP	CHECKED AG	APPROVED PS	
DATE 08/12/2021	SCALE @A1 1:10,000	REF PB6934	
DRAWING NUMBER PB6934-RHD-01-ZZ-DR-4033		STATUS S0	REVISION 1