REPORT

# Longue Hougue South EIA

## Non-Technical Summary

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Royal HaskoningDHV

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**HASKONINGDHV UK LTD.**

Stratus House
Emperor Way
Exeter
EX1 3QS
Industry & Buildings
VAT registration number: 792428892

+44 1392 447999 **T**
+44 1392 446148 **F**
info.exeter@uk.rhdhv.com **E**
royalHaskoning.com/documents **W**

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Author(s): Simon Thomas, Lorelei Smith, Peter Thornton

Drafted by: Laura Covington

Checked by: Peter Thornton

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Approved by: Gary Bower

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# 1 Introduction

## 1.1 Purpose of this Non-Technical Summary

1.1.1 This report is a non-technical summary of the findings of the Environmental Impact Assessment (EIA) for a new inert waste management facility at **Longue Hougue South**, Guernsey. What an EIA is and what it does is described in **Section 2**. It will be used to support a planning application, and this non-technical summary is provided as part of the EIA and is meant to be read as a stand-alone document.

1.1.2 Inert waste comes from construction, demolition and excavation activity. It is material that does not dissolve, burn or otherwise physically or chemically react or biodegrade when it comes into contact with other matter, therefore the potential to cause pollution is insignificant. Examples are bricks, tiles, concrete and glass.

## 1.2 Need for the Project

1.2.1 In recent years, the States of Guernsey has relied on coastal land reclamation at Longue Hougue for the disposal of inert waste. The site, which has been operational since 1995, is nearing the end of its life. It is estimated to have less than five years' capacity remaining, depending on demand.

1.2.2 Royal HaskoningDHV was commissioned to develop a long-term strategy for future inert waste management for Guernsey. Multiple options were assessed, and an extension to the current coastal land reclamation site, to the south of Longue Hougue, was identified as the preferred option for future containment of residual inert waste.

## 1.3 The Project and its Location

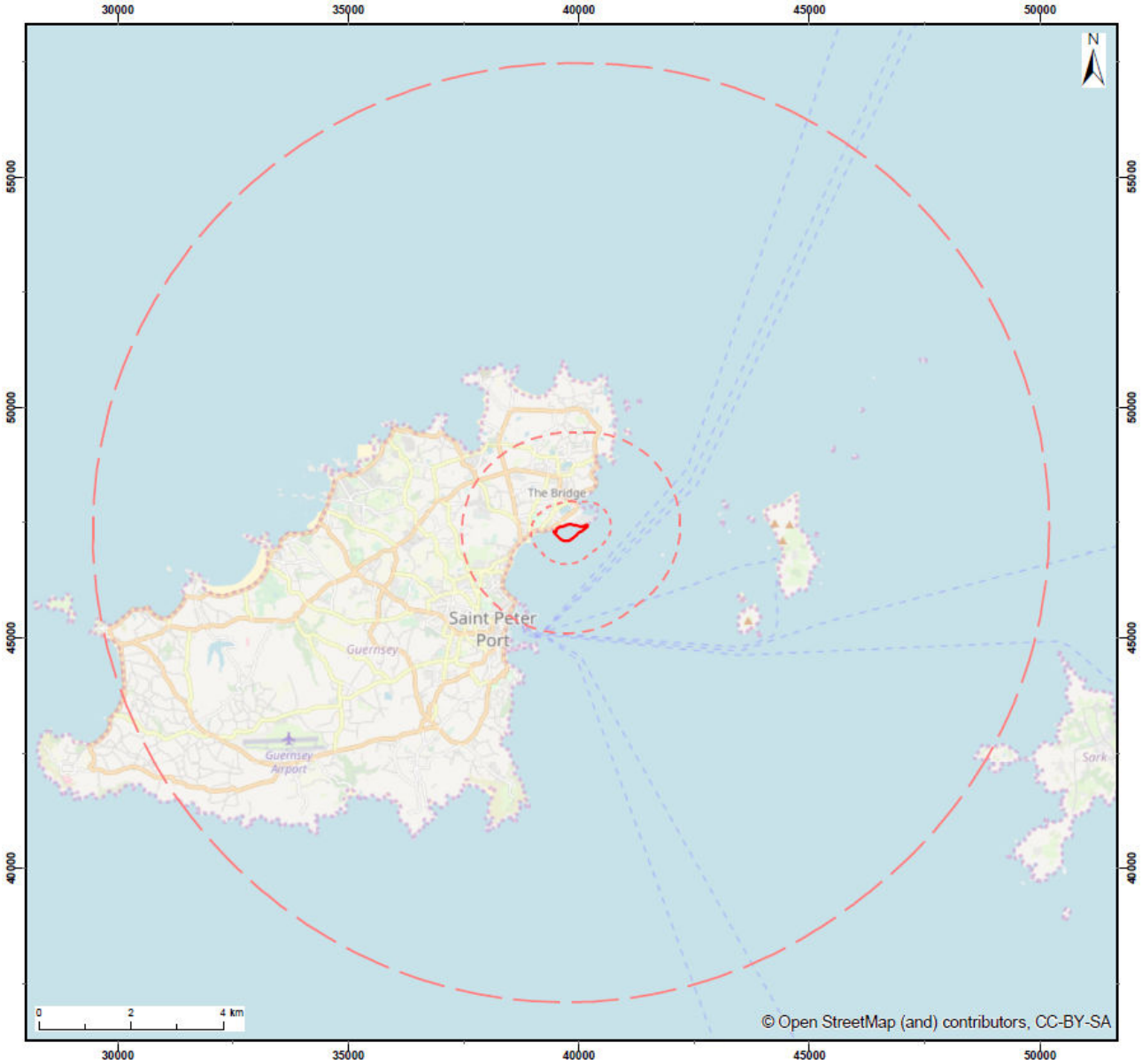
1.3.1 The project will claim an area of land from the sea between Spur Point and the current Longue Hougue facility. This will be done by building a breakwater structure that will gradually be filled with Guernsey's inert waste.

1.3.2 The location is provided in **Figure 1**, and the site surroundings shown in **Figure 2**.

1.3.3 **Figure 3** presents the characteristics of the site and surrounding area.

1.3.4 The site will be adjacent to the current residual inert waste facility, the Longue Hougue reclamation site (see **Figure 4**), to the south and south-west.

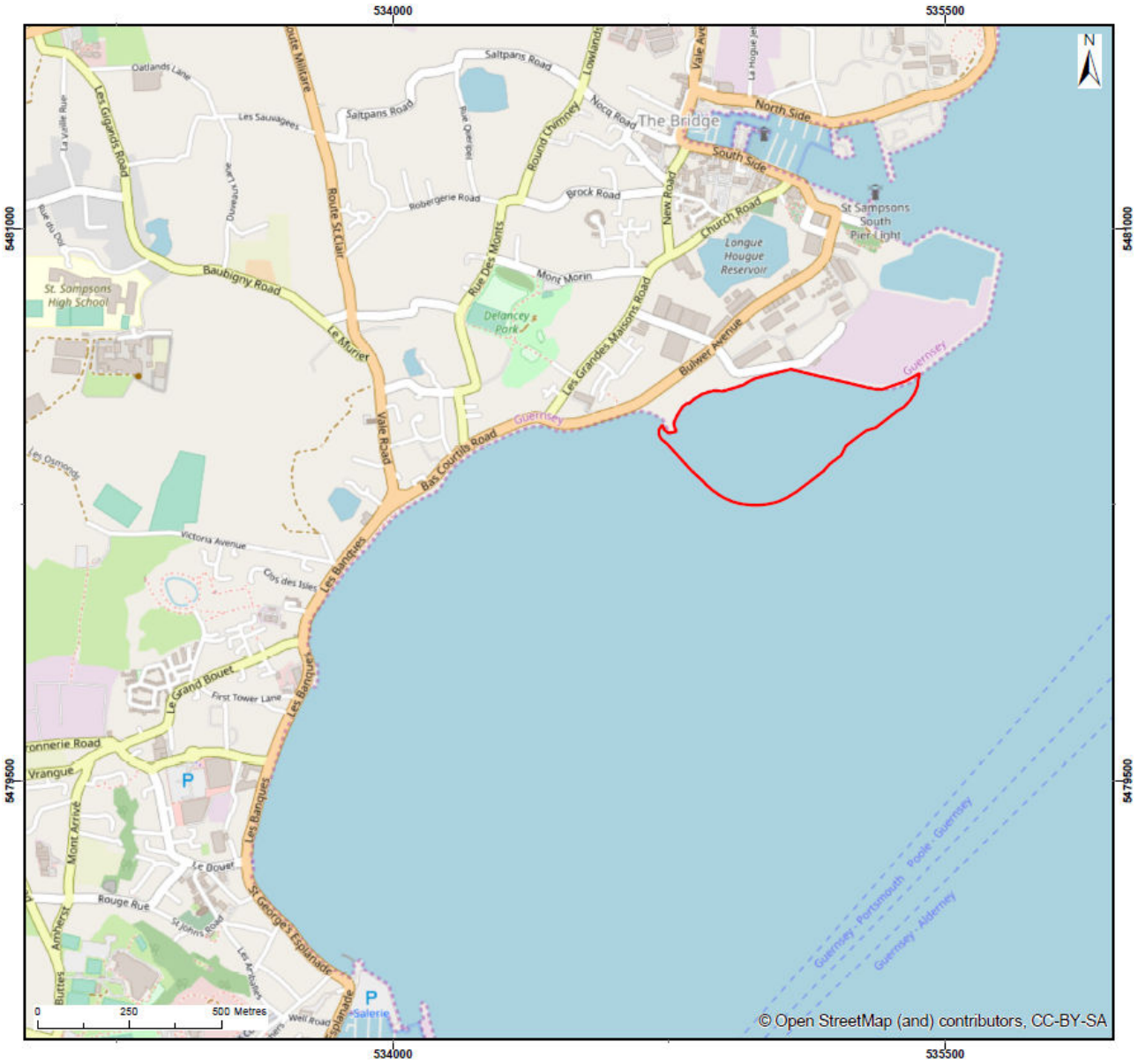
*Figure 1 Location of Longue Hougue South*




Note: Dotted lines indicate distances of 0.5km, 2km and 10km. These are called "buffer zones" and are used in the assessment process

1.3.5 The site includes a beach approximately 35m wide, and the headland of Spur Point. The southern part can be reached from the footpath to Spur Point via Bulwer Avenue. The site can also be accessed from a States-owned (but not public) access road in the industrial area of St Sampson. To the north and north-west of the site, there are residential properties in the small strip of land between Bulwer Avenue and the beach area which forms the site boundary.

*Figure 2 The Outline Extent of the Project*




Note: the red line represents the outer boundary of the project.

1.3.6 To build the breakwater, large rocks will be imported to Guernsey by ship. They will be brought to the site by barge, which will anchor on either the north side of the existing Longue Hougue site or offshore of Belle Greve Bay. The rocks will be transported from the barge to the site by dumper truck or small barge. The breakwater will be constructed by gradually piling the rocks on top of one another in a controlled way until there is a link from the Longue Hougue site to Spur Point. This will create a wall to the sea.

1.3.7 This phase is anticipated to take a maximum of 36 months. The layout of the site during construction and operation is shown in **Figure 4**.

*Figure 3 Current Site Characteristics*

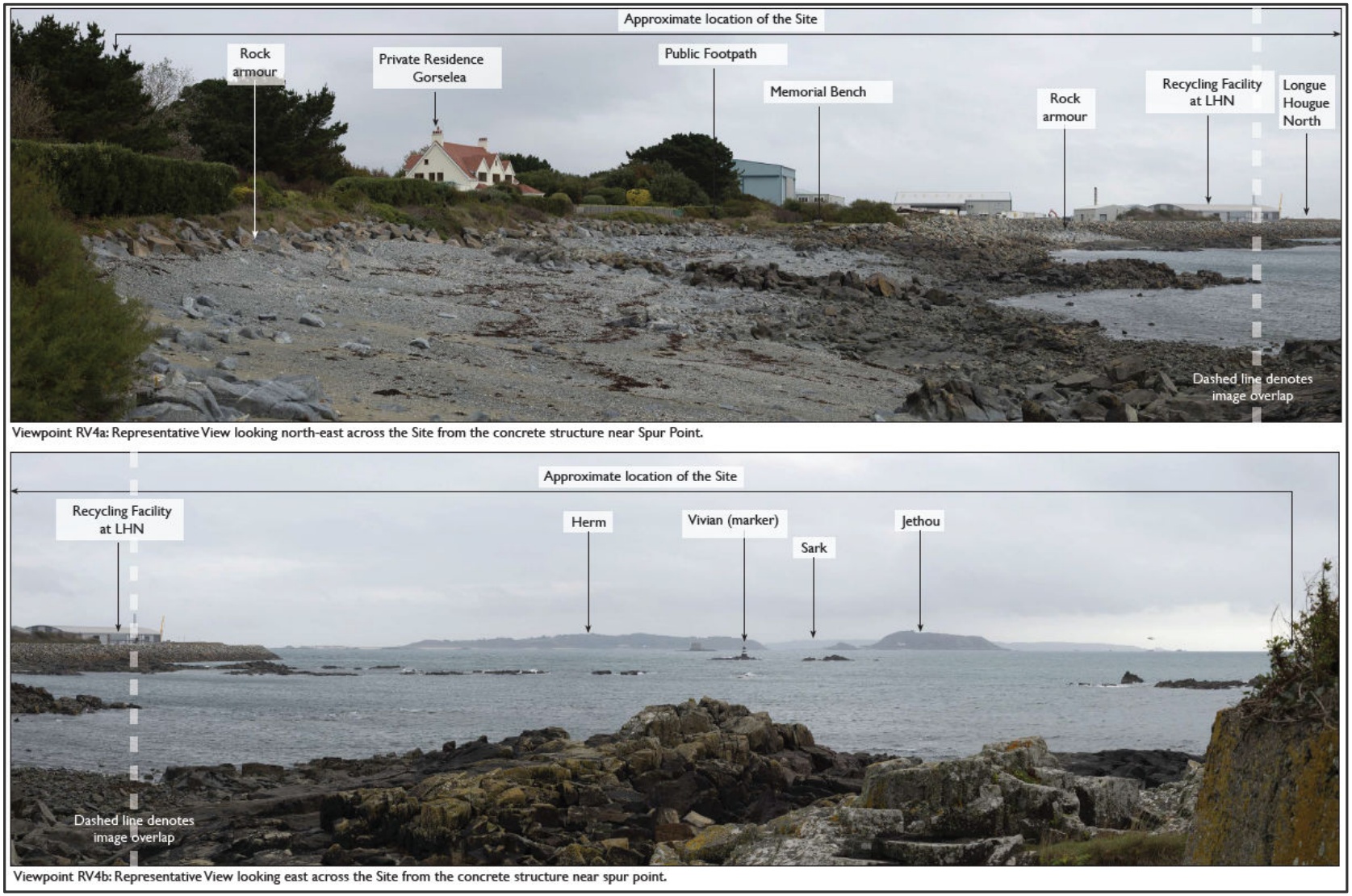
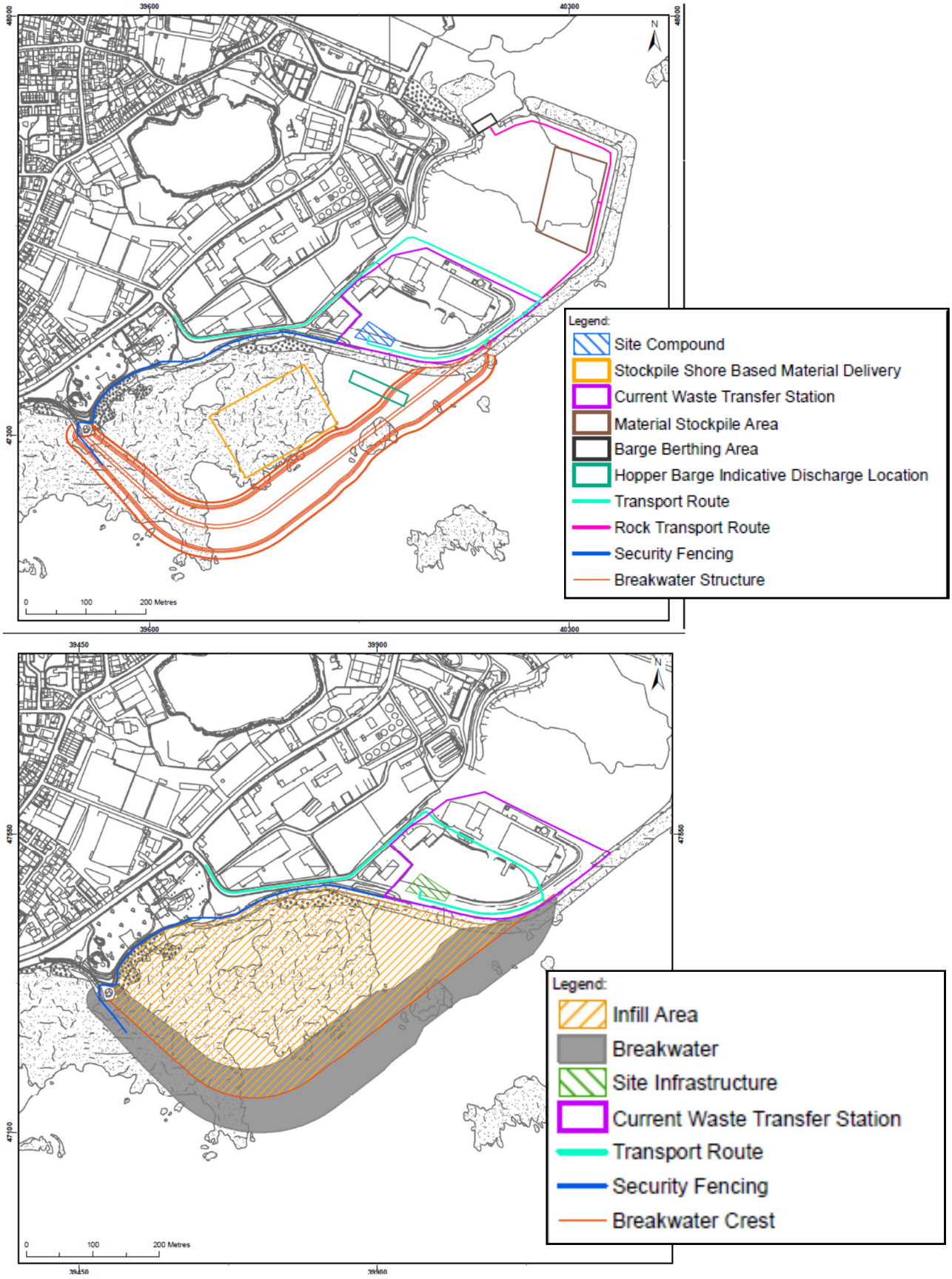


*Figure 4 Site Layout during Construction and Operation*



1.3.8 After the breakwater is constructed, the site will gradually be filled with Guernsey's inert waste. The capacity will be approximately 715,000 cubic metres, and how long it will take to fill will depend on the volume of inert waste generated each year. The prediction of 12 years is based upon the current amount produced, whilst improvements to recycling and re-using inert waste will help to extend the life of the facility.

1.3.9 It is expected that the site will be open in 2023/4.

1.3.10 The expected opening hours will be between 0800 to 1600 Monday to Friday. The site will not be open on weekends or Bank Holidays.

1.3.11 An alternative use will be found for the site once its function as an inert waste facility is complete. This has not yet been determined and will depend on the future requirements of the States of Guernsey. The EIA does not therefore consider the future use of the site, which will be subject to planning requirements and may require a separate EIA.

## 1.4 Alternatives

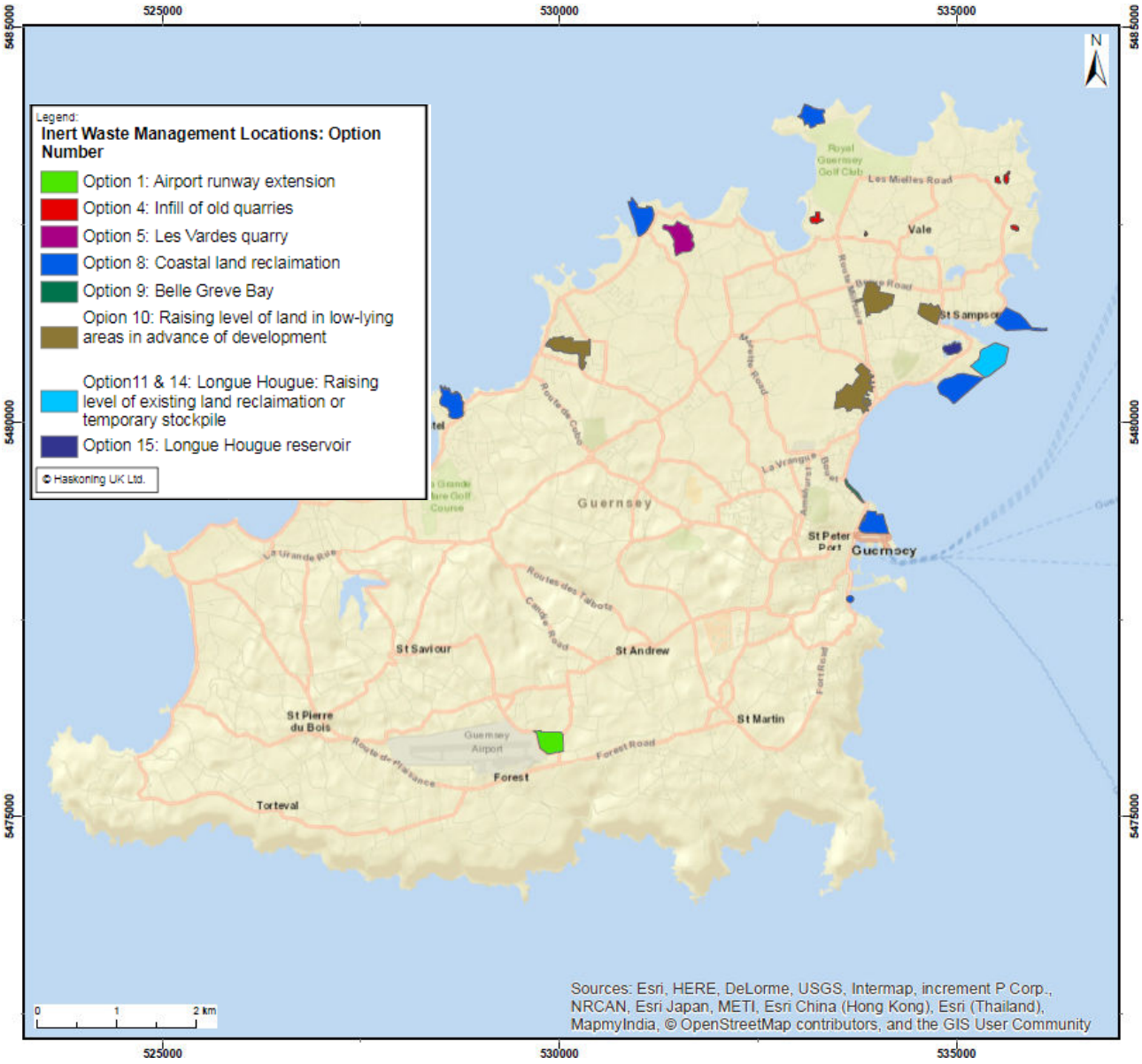
1.4.1 An assessment of alternative options and locations for inert waste management was carried out. This considered more than 50 potential options. From this 'long-list' of options, a number of potential options were screened out based upon practical and legal factors, to deliver an initial shortlist for more detailed consideration.

1.4.2 The shortlisted waste management options were evaluated for their environmental constraints, benefits and costs. The locations of potential disposal sites that were considered are shown on **Figure 5**. Alternative designs within the site were also assessed.

1.4.3 A high level impact assessment on the shortlist of options was carried out. It showed Longue Hougue South to have limited and manageable environmental impacts compared to other options. It also offers the largest capacity of the sites available in the necessary timeframe, and thus the cheapest cost per cubic metre of inert waste of any of the available options.

1.4.4 An added benefit will be increased coastal defence for properties behind Belle Greve Bay. Once full, it could provide added space for mixed or industrial use or other valuable uses required in the future. Land available for these uses is typically in very short supply in Guernsey.

*Figure 5 Shortlist of Inert Waste Management Options Considered*[1]




1.4.5 It should be noted that any future development at the site when it is completed may be subject to a separate EIA.

## 1.5 Legal Requirements

1.5.1 Guernsey has legislation and policy in place to ensure that an EIA is carried out in a consistent way to meet the needs of the island.

1.5.2 The Land Planning and Development (Environmental Impact Assessment) Ordinance, 2007 sets out the requirements for EIA for developments and policies relating to proposed developments. The type of development that the Longue

[1] *See Chapter 4 – references: Royal HaskoningDHV, 2017*

Hougue South project falls into means that an Environmental Statement (ES) is required to accompany the application for consent to build it. The ES is the documentary evidence of the entire EIA process.

1.5.3 The approach to the EIA and the production of the ES must follow other legislation and consider other relevant best practice and guidance including:

- Land Planning and Development (Guernsey) Law 2005;
- Land Planning and Development (General Provisions) Ordinance 2007;
- Strategic Land Use Plan 2011 and the Island Development Plan 2016; and
- Relevant UK and EU Directives for environmental quality standards (such as The Bathing Water Directive, Directive on Environmental Quality Standards, Conservation of Habitat and Species Regulations 2017, Marine and Coastal Access Act 2009 and The Air Quality Directive).

# 2 Environmental Impact Assessment

## 2.1 The EIA Process

2.1.1 An EIA is a process of evaluating the likely environmental impacts (positive and negative) of a project to identify what the consequences (i.e. the effects) of it will be.

2.1.2 This is done by collecting information before the project starts, to set a baseline. Studies and expert advice are then used to predict what the change (i.e. **impact**) will be because of the project. The significance of that change determines the environmental **effect**. This is carried out over a wide range of environmental studies to ensure the project is fully considered.

2.1.3 A process known as 'scoping' is used to identify what environmental studies are required in the EIA for a project. Relevant topics fall under the three general areas of physical environment, biological environment, and human environment.

2.1.4 An informal scoping report was prepared and consulted on in February 2019 to inform the assessment.

2.1.5 A report is produced at the end of the EIA process. This is called the Environmental Statement (ES). The full Environmental Statement for this project will be submitted to the Development & Planning Authority for the development of a local planning brief and subsequent consideration of planning approval.

2.1.6 This non-technical summary is a separate document to the ES and summarises the EIA process and conclusions.

## 2.2 Assessment

2.2.1 To accurately assess the potential impacts of the development, the environmental parameters that might be impacted are identified and a baseline established. This is usually undertaken using existing data from a wide variety of sources, with site specific survey information to fill any gaps.

2.2.2 Impacts of the project are then assessed against this baseline. Receptors are identified as those that may be influenced by any effect. The assessment will consider the size or magnitude of the impact, the sensitivity and value of who or what will be impacted, and for what duration. This identifies the significance of an impact on a variety of receptors.

2.2.3 Where the effect of any impact is identified as significantly adverse, mitigation measures must be provided to reduce this. The assessment is then repeated with mitigation in place to identify what the 'residual' impact would be.

2.2.4 The EIA must also consider other plans or projects where impacts could overlap and/or affect the same environmental receptors. This is called a cumulative impact assessment.

2.2.5 The following sections describe the baseline environment and key impacts identified for each topic.

## 2.3 Coastal and Marine Processes

2.3.1 The site sits within a rocky bay exposed to waves and very strong tidal currents. A 570 million year old geological feature called St Peter Port Gabbro rock is present within the bay (**Figure 6**).

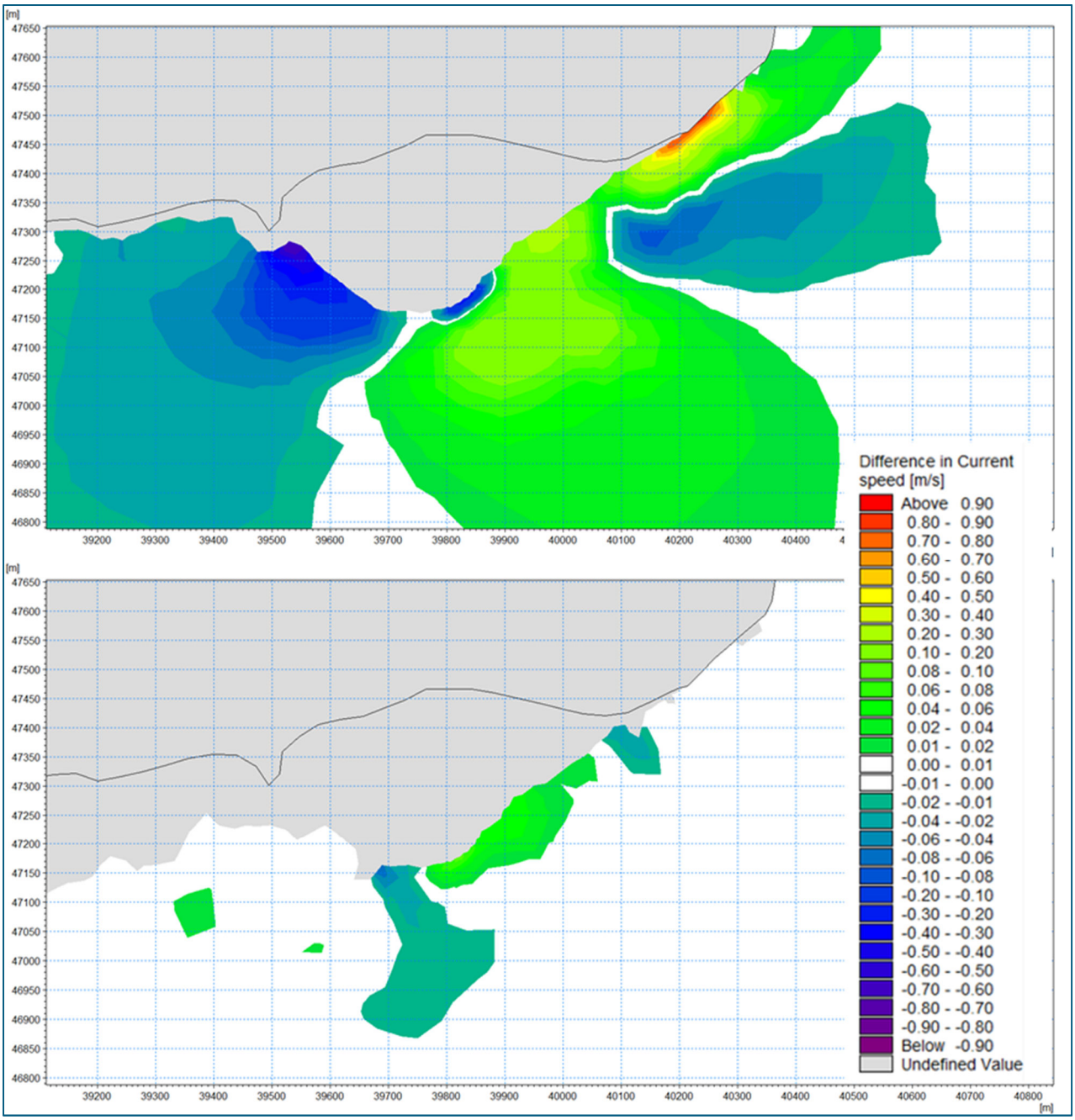
*Figure 6 Photograph of the shore at Longue Hougue South*

Note: The large dark grey boulder (centre) is St Peter Port Gabbro bedrock.

2.3.2 The interaction of the depth of the sea bed, the tides and local currents are complex. Experts therefore use computer modelling to establish the baseline and identify how the project will influence the coastal system. It uses data local to the area, including depths, wave conditions, current speed and direction, and predicted future sea level rise. A sea bed survey was also carried out at locations in and around the site.

2.3.3 First the model predicts what the current coastal environment is. Then, the project is introduced, and the model is re-run to see if there would be any changes to the local tidal currents, waves, and movement of sediment during and after construction. The results are shown in **Figure 7**.

*Figure 7 Predicted changes in local tidal current velocity caused by the presence of the Project during and incoming spring tide (top) and during an outgoing spring tide (bottom)*




2.3.4 The model predicts some potential changes to wave and tidal processes, but not sufficient to have a significant adverse impact to coastal and marine processes.

2.3.5 It shows both an increase and decrease in the speed of tidal currents after the breakwater has been constructed.

2.3.6 The current speed will increase in two areas - next to the breakwater and next to the existing Longue Hougue facility. The maximum increase in tidal current speed next to the breakwater is 20cm/sec. This speed increase rapidly decreases to 5cm/sec as you travel out to sea. Next to the existing Longue Hougue facility the maximum increase is 80cm/sec, which also decreases to 5cm/sec around 300m offshore.

2.3.7 The maximum decrease in tidal current speed was 60cm/sec at Spur Point.

2.3.8 These changes are very small compared to the normal current speeds seen around the site, which can be up to 270cm/sec. Any change is only felt very close to the site boundary and reduces towards the centre of Belle Greve Bay. There is no change predicted to the waters surrounding the Herm Ramsar site or across the approaches to St Sampson's Harbour.

## 2.4 Marine Sediment and Water Quality

2.4.1 There is potential for an increase in suspended sediment during the placement of the first layers of rock for the breakwater. However, given the lack of fine sediment in and around the construction area and the temporary nature of the impact, its effect is considered to be minor adverse and no mitigation is required.

2.4.2 Any contaminants present within seabed sediments could also be released if the sediment is disturbed during construction.

2.4.3 The project area comprises mostly bedrock. Samples were taken from the few small sandy areas present within and around the construction area and analysed to identify if there were any contaminants of concern. Only one sample point had an exceedance against the relevant standards[2]. It showed a marginally higher concentration of chromium compared to the trigger value. This was the only substance that exceeded the relevant trigger threshold.

2.4.4 At this sampling point, sediments containing low concentrations of chromium could be released into the surrounding marine environment. However, it is approximately 300m from the closest construction work, therefore unlikely to be affected by construction of the breakwater. The impact is therefore considered minor adverse, so no mitigation is required.

[2] *The Centre for Environment, Fisheries and Aquaculture Science Action Level 1*

2.4.5 Marine vessels will be used for some elements of the breakwater construction. The spillage of mobile liquid pollutants (such as fuels and lubricants) is therefore possible. However, these will be carried in small quantities.

2.4.6 On land, good construction management measures will ensure the proper storage of potential pollutants. Emergency response procedures and equipment such as oil booms and silt traps will be kept onsite, with staff trained in their use. A Construction Environmental Management Plan (CEMP) will be produced to identify appropriate procedures to ensure there is no unacceptable harm to human health or the environment. No planned direct discharges are expected during construction so the risk of accidental pollution of the marine environment is deemed to be low.

2.4.7 Due to the nature of the waste facility, there is potential for fine inert material to seep through the gaps between the rocks in the breakwater into the marine environment, increasing suspended sediment and lowering water quality. A geotextile lining within the breakwater could be used to prevent this. In addition, or if use of a geotextile is not possible, selective placement of fine material further from the breakwater would reduce this risk. However, the coastal processes assessment has identified that if fine material does pass through the breakwater, the strong tidal currents around the site would disperse it very quickly. Therefore, the impact is predicted to be negligible.

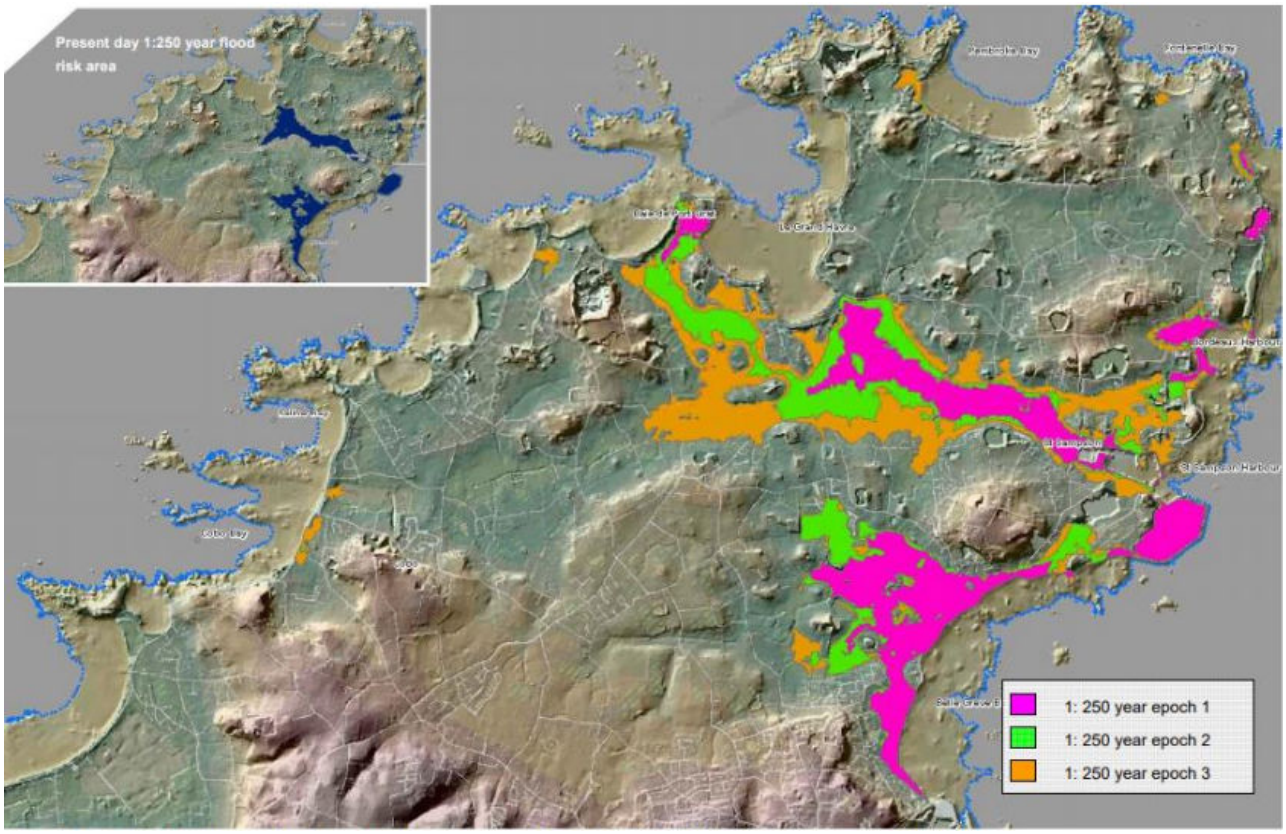
## 2.5 Surface Water and Flooding

2.5.1 The site sits within an urban area and will be bordered by residential properties and Bulwer Avenue. Longue Hougue Reservoir is 300 metres to the north east. The project consists of reclaiming from the current land boundary out to sea, increasing the area of land present during the operation phase. This will be permeable so rain water and run-off will travel down through the site directly into the sea.

2.5.2 Although Guernsey is at risk from coastal flooding, the site is not within a current flood risk area (as it is located within the subtidal or intertidal zones). However, it is within an area similar to the existing Longue Hougue reclamation area that could be subject to coastal flooding in 2061 with sea level rise (**Figure 8**).

2.5.3 The receptors within the Surface Water and Flooding study area are of varying sensitivity and value. The marine water body is the most sensitive because of the species that are present within it.

*Figure 8 Flood risk map for Guernsey[3]*




2.5.4 In the current proposal, there is no intention for hard standing to be installed on the Longue Hougue South site itself. However, there are three outfalls that discharge into the Longue Hougue South area (two surface water and one combined sewer). Over time, infilling works could cause the obstruction or damage to these outfalls and subsequent backing up of surface water drains in and around the Household Waste Recycling Plant and/or around the Longue Hougue Lane area, and even overflow sewerage discharges in the Longue Hougue area. The flooding resulting from these would be an intermittent major adverse impact. An operational approach will be adopted to protect the outfalls. They will need to be re-routed or extended, either during the construction phase for Longue Hougue South, to discharge through the new breakwater, or at some point during the operation phase.

2.5.5 The assessment considered impacts from an accidental pollution event during construction and from an increased flow of surface water from the land surrounding the site following a rainfall event (run-off). The assessment concluded that there will be no flooding impacts, hence no mitigation is needed. However, there is a risk of flooding in the event the surface water outfall from the Household Waste & Recycling

[3] *See Chapter 4 – references: Royal Haskoning (2012)*

Centre at Longue Hougue is obstructed (over time), which would be prevented by extending the outfall.

2.5.6 Surface water changes from the site will have a minor impact to the marine water body through accidental release of contaminants.

2.5.7 The project will build upon the existing defences along the island's east coast. This will provide a positive impact through the raising of the current coastal defences, which is considered to be a minor beneficial impact based on professional opinion.

## 2.6 Land Use, Land Quality, Soil Quality, Geology and Hydrology

2.6.1 The site is within an area of foreshore and offshore and surrounded by an urban area, a key industrial expansion area, a harbour action area and an area of biodiversity importance (ABI) at Spur Point (see **Section 2.13**). Three residential properties sit adjacent to the project area and another is approximately 200m away. There are no sources of contamination or soils within the site. Beneath the land next to the site, water is found underground in pores and soil or pores and crevices in rock (groundwater), as the rocks are porous and saline water moves inland from the sea. No groundwater pathways between the coast and Longue Hougue Reservoir are anticipated.

2.6.2 Local and UK guidance[4] regarding management of land contamination, control of asbestos, and management of health and safety in construction was used in preparing the EIA.

2.6.3 The assessment considered the known history of the site, its past use and the proposed future end-use (for the purpose of this EIA, 'end-use' has been assumed to be the site filled to completed levels, but with no subsequent operational activities on it). Impacts on construction workers and the general public from disturbance of potentially contaminated sites were considered to be of minor adverse significance. The use of Personal Protective Equipment (PPE) will mitigate any adverse impact on construction workers, and the CEMP will detail how the contractor will protect the environment during construction. This will be approved before work starts.

2.6.4 The St Peter Port Gabbro rock is unusual and is only found on the south east coast of Guernsey. The example at Spur Point will be lost as a result of the project, therefore the impact to geology is high. It is proposed that chunks / small boulders are removed from the site during the construction phase and placed around the southern boundary of the site. This will allow the public to see the interesting geology and maintain geologist access to the rock. The residual impact is therefore considered to be moderate adverse.

[4] *See chapter 4 – References: OEHPR, 2017; Environment Agency, 2016; SoG, 2013.*

2.6.5 There will also be a loss of an ABI at Spur Point. Over the lifetime of the site as an operational inert waste management facility, with infilling activities occurring, there will be a change from coastal habitat used for recreation to open land with potential for other uses. Impacts on the ABI are considered in **Section 2.13 Marine Ecology** and **Section 2.14 Terrestrial Ecology and Ornithology**. Following the mitigation discussed in these sections and given that open land on the island is a finite resource, the residual impact is considered to be moderate beneficial.

## 2.7 Traffic and Transport

2.7.1 Baseline traffic surveys were undertaken over seven days in April 2019, using automatic counters in a number of locations (**Figure 9**). Vehicle type, volume and speed were recorded 24 hours per day.

2.7.2 A prediction of future traffic volumes was produced using data provided by the States of Guernsey for the current Longue Hougue reclamation site. This was used to assess the potential increases on existing vehicle movements in the traffic and transport study area. These background traffic flows were obtained through a series of surveys in March 2019.

2.7.3 The assessment concluded that during the construction phase, the greatest daily increase in vehicles would be in Longue Hougue Access Road (a 6.2% increase in total vehicles and 9.7% increase in HGVs). For other roads this ranges from 0.3% to 0.8% and 2.5% to 6.9% for total traffic and HGVs respectively. Overall this would result in a temporary (and intermittent) minor adverse impact, and driver delays would not be discernible from current daily traffic fluctuations.

2.7.4 The maximum increase in vehicles during the operational phase of the facility is expected in the early years, with the volume of traffic subsequently decreasing in line with reductions in waste. In the worst case year, the maximum daily increase on the Longue Hougue Access Road is 9.4% for total vehicles and 36.6% for HGVs. The next largest increase is on Bulwer Avenue where the maximum daily increase would be 1.1% for all vehicles and 11.2% for HGVs.

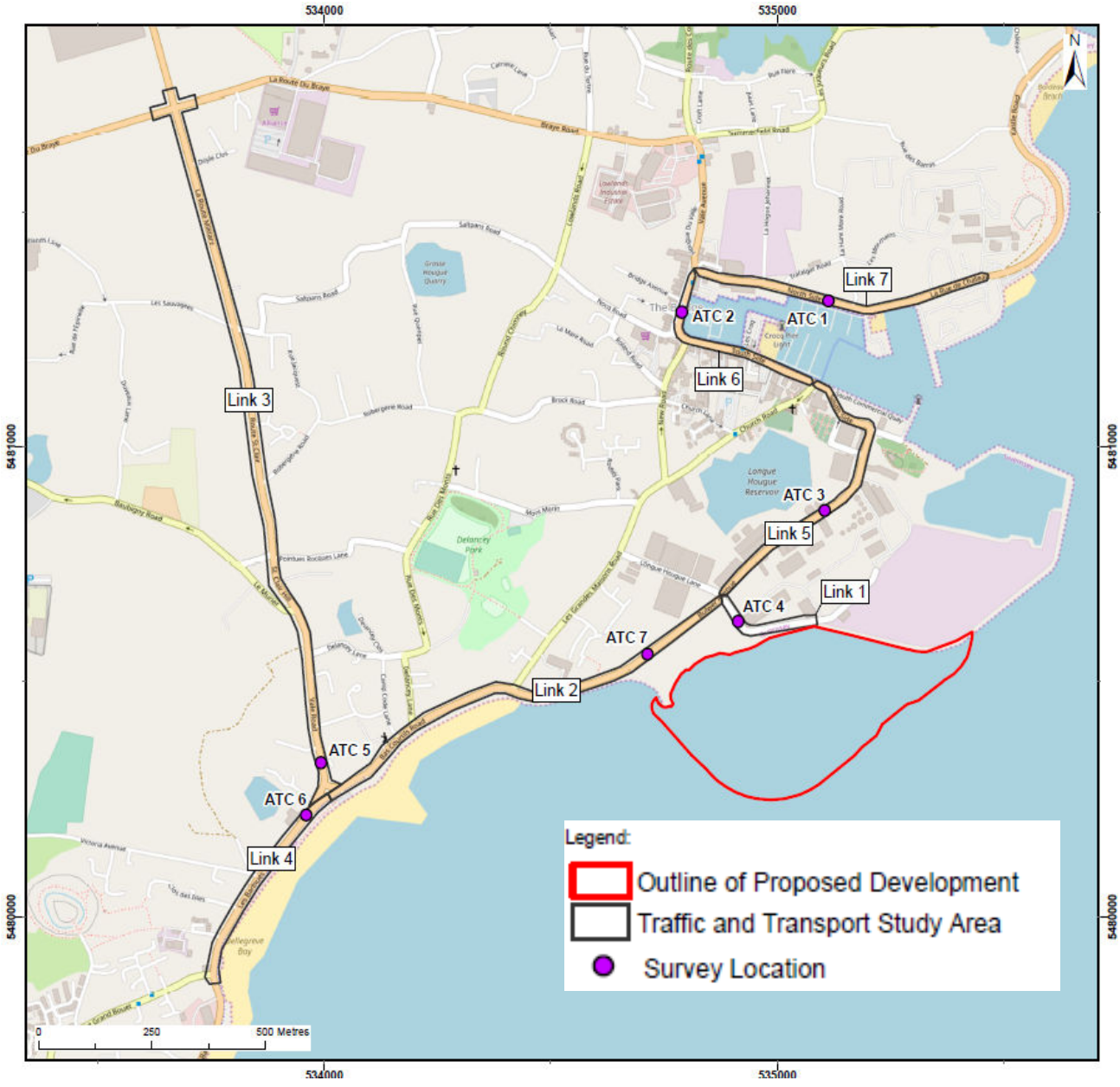
2.7.5 The data was assessed in accordance with industry guidance[5] to determine the potential environmental impacts from the introduction of the project.

2.7.6 An increase in traffic during construction and operation could increase road accidents. To understand the number of incidents that occur around the site, data on collisions reported to Guernsey Police in the last five years (2013-2018) was analysed. This showed 123 collisions within the assessment area - 5.7% involved HGVs, 76.4% caused damage only and 14.6% involved vulnerable road users. A

[5] *Guidelines for the Environmental Assessment of Road Traffic*

concentration of collisions is present at the Halfway junction of Les Banques and Vale Road. This allowed the assessment to predict how an increase in traffic as a result of the project would affect the nearby road network.

*Figure 9 Location of Traffic Counters and Traffic and Transport Study Area*




2.7.7 The assessments showed that a minor adverse impact on road safety (i.e. a slight increase in number of collisions) would be experienced. A minor adverse impact on driver delay is also predicted, but this is not likely to be distinguishable from current baseline traffic patterns. The impact on pedestrian and cycling amenity is considered to be negligible.

## 2.8 Air Quality

2.8.1 The air quality assessment covers chemicals, small particles and dust in the air. These are mostly caused by traffic and industrial activity. Guernsey does not have specific air quality standards and objectives, so the standards and objectives set in UK Law have been used in this assessment.

2.8.2 Sensitive receptors identified include local houses, human receptors and ecological sites.

2.8.3 Air quality at Bulwer Avenue, adjacent to the site is good, with both nitrogen dioxide ($NO_2$), particulate matter ($PM_{10}$ and $PM_{2.5}$) recorded as being 'well below' the objective identified in the UK guidelines.

2.8.4 Site specific monitoring of $NO_2$, $PM_{10}$ and $PM_{2.5}$, and dust was carried out for three months in seven locations in and around the site (**Figure 10**). Predicting future air quality around the project site is a complex process that must consider many factors such as wind direction and speed, and vehicle type and numbers. A computer-based model was therefore used. Any uncertainty in the model's predictions was minimised by following UK guidance[6].

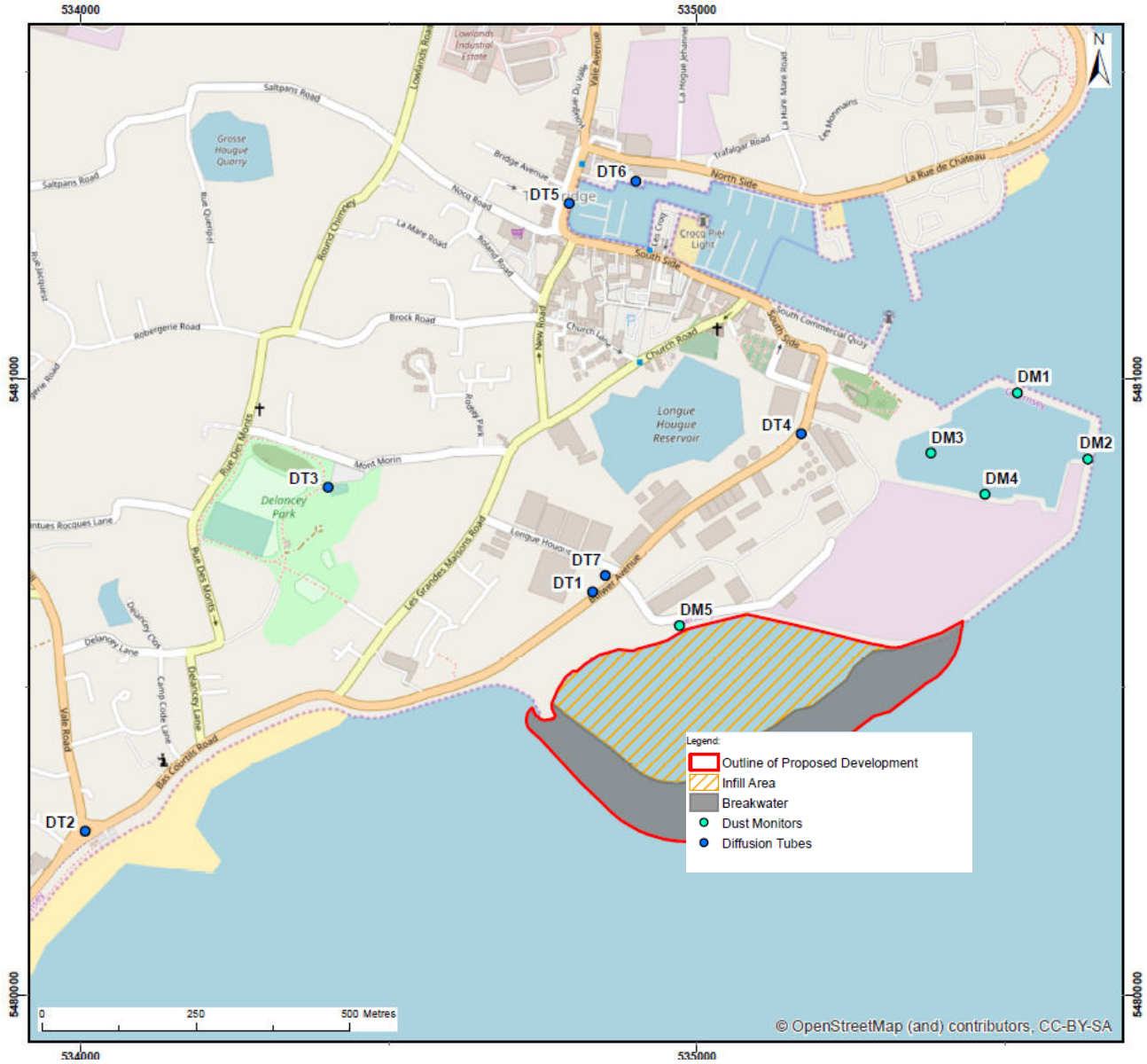
2.8.5 Emission increases from road traffic during both construction and operation phases are predicted to be insignificant.

2.8.6 The dust assessment considers the abundance of sensitive receptors and their proximity to the site as well as the extent of dust-causing activities during construction and operation. It determined that without mitigation measures there was a high risk of impacts resulting from construction activities.

2.8.7 However, the project should have no impact on sensitive receptors if standard dust mitigation measures for a 'high risk' site are followed during construction and operation. These may include recording all dust or air quality-related complaints or incidents; a stakeholder engagement plan; erection of solid screens to minimise dust spread; and locating dust-causing activities as far from sensitive receptors as practically possible. These will be detailed in a Dust Management Plan.

[6] *Defra, Institute of Air Quality Management (IAQM) and Environmental Protection UK*

*Figure 10 Air Quality Monitoring Locations*

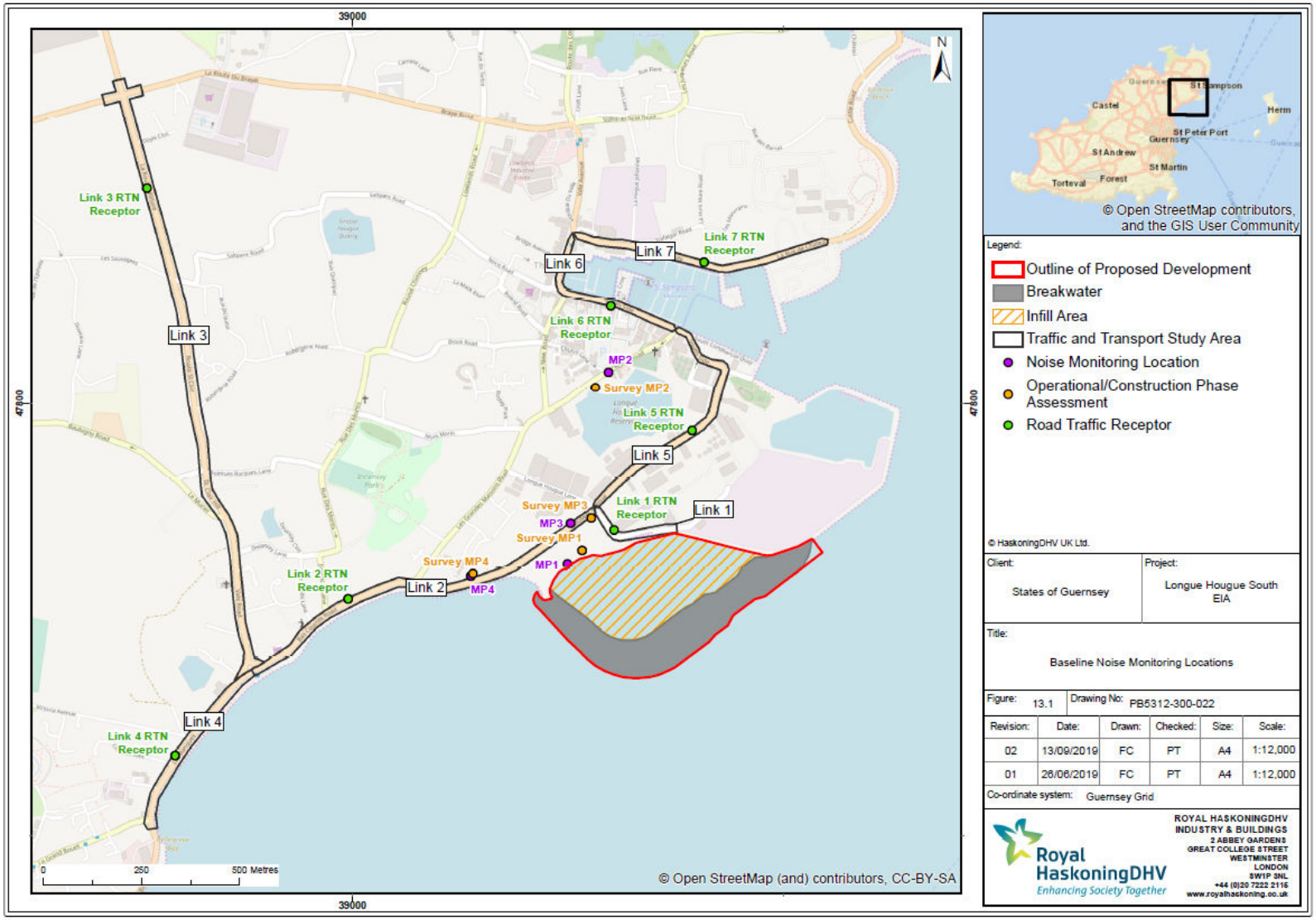



## 2.9 Noise and Vibration

2.9.1 The noise and vibration assessment was carried out in accordance with the relevant British Standard[7], and traffic noise calculated in accordance with industry standard[8]. Noise monitoring points (MPs) were assigned at four locations that could potentially experience impacts (**Figure 11**), to measure the baseline and assess noise impacts resulting from the project.

[7] *BS 4142:2014+A1:2019 – Method for Rating and Assessing Industrial and Commercial Sound*
[8] *The Calculation of Traffic Noise, 1988*

*Figure 11 Baseline Noise Monitoring Positions/Study Area Assessment Receptors*



2.9.2 Without mitigation, a minor adverse impact was predicted for MP1 and MP2 during the construction phase for night-time work only. To mitigate this, a construction noise management plan will be implemented. This could include physical measures, such as locating on-site structures (e.g. cabins and walls) to screen sensitive receptors; logistical measures, such as restricting noisy deliveries to daytime where possible; and a community engagement process. Following these mitigation measures, the residual impact is considered negligible.

2.9.3 Changes in road traffic levels during construction and operation are predicted to have, at worst, a minor adverse impact on noise-sensitive receptors, so no mitigation is required.

2.9.4 Construction of the breakwater at its closest location is approximately 130m from receptor MP1. Vibration impacts from large construction vehicles driving over rough ground may occur. The impact on MP1 will be no worse than minor adverse.

2.9.5 During operation, various activities associated with both the site compound (e.g. crushing plant) and the infill zone (e.g. excavators, waste transporters) will produce noise that could have adverse impacts on adjacent residential areas. The operational noise from the site is predicted to have a minor adverse impact on MP1 (**Figure 11**), and of lesser significance for other residential receptors. To mitigate this, a 1.8m moveable barrier will be erected to attenuate noise that could be experienced at MP1 from infill tipping works. The residual impact is not considered to be significant.

## 2.10 Population and Human Health

2.10.1 The assessment of impacts on Population and Human Health was carried out in line with best practice guidance from the World Health Organisation (WHO) and Public Health England (PHE).

2.10.2 Impacts of increased industrialisation are discussed in **Section 2.12**, with respect to the landscape character change.

2.10.3 The infill of Spur Bay will result in the loss of habitat for birds and may therefore reduce birdwatching in the area. Some angling frontage along the seaward perimeter will also be lost. However, all birds recorded on site are common and there are many better birdwatching and angling locations around Guernsey, so these impacts are considered to be minor adverse.

2.10.4 The coastal path around the site is used to access the foreshore for ormering and for walking and would be lost as a result of the development. This length is a 0.56km stretch that ends on public highway. This is considered to be a minor adverse

impact, along with the remainder of impacts on recreational resources which are considered to be negligible or of no significance.

2.10.5 There is a doctors surgery approximately 210m north of the site boundary. Presence of the construction site could potentially deter visitors from attending. However, the surgery is within a residential area and does not overlook the site, and there will be no barriers to access. The vast majority are therefore unlikely to change their behaviour therefore the impact is considered to be minor adverse.

2.10.6 Impacts on human health from traffic and transport impacts are predicted to be, at worst, minor adverse. These are discussed in further detail in **Section 2.7**.

2.10.7 Impacts on human health from air quality impacts are not predicted to be significant. These are discussed in further detail in **Section 2.8**.

2.10.8 Impacts on human health from noise and vibration impacts are predicted to be of minor adverse significance and are discussed in further detail in **Section 2.9**.

## 2.11 Material Assets (Archaeology, Built and Cultural Heritage)

2.11.1 The assessment of impacts on material assets was carried out based on the principles of the Guernsey historic environment policy.

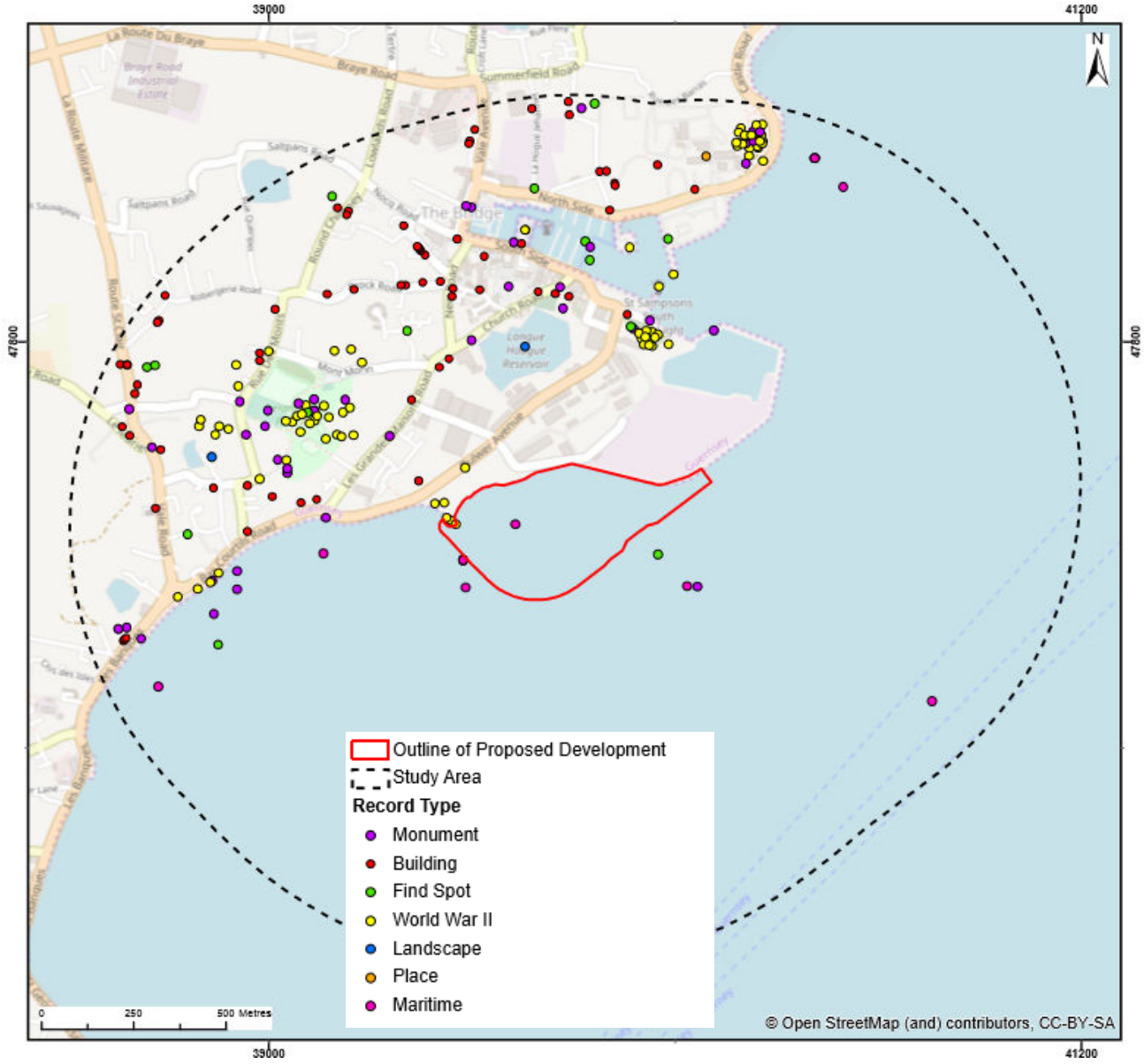
2.11.2 There is no potential for prehistoric remains to be buried within the project area because the site is made up of rocks and very little sediment. There is also no geology recorded from the two most recent geologically significant time periods (Pleistocene and early Holocene epochs).

2.11.3 A search of the Guernsey Sites and Monuments Record found 215 heritage assets within a 1km study area (**Figure 12**). The majority were World War II military sites, followed by historic buildings and monuments.

2.11.4 The brig *"Sovereign"* is reported to have been wrecked near Spur Point in 1843, and although the exact location of any remains is unknown, documentary evidence suggests they could be located within the development site.

2.11.5 Construction of the breakwater will destroy the fragmented remains of a gun emplacement on the foreshore and change the physical context of its surviving foundation. However, it is currently in a poor state and without intervention will likely be lost to the sea in the near future. It has been suggested this asset could be recorded and preserved as part of the scheme, which would constitute a major positive impact.

*Figure 12 Heritage Assets within 2km of the Site*




2.11.6 A 'Protocol for Archaeological Discoveries' will be implemented during construction. This will ensure good practice is used to retain any finds in the best condition for further assessment and conservation where necessary.

2.11.7 During operation, there will be a minor adverse impact to previously undiscovered archaeological remains. There will also be a minor adverse effect on the surroundings in which nearby heritage assets are experienced (their 'setting').

## 2.12 Landscape and Visual Character

2.12.1 Site visits were undertaken to survey the site and its context to inform the landscape baseline and identify receptors and viewpoints. Potential impacts to views, setting and character areas were assessed through a Landscape / Townscape / Seascape and Visual Assessment, in accordance with best practice[9].

2.12.2 Effects from construction, such as lifting and other machinery, would not be out of context with the industrial setting of the surrounding area. The most affected receptors were the local rocky shore landscape, the adjacent residential properties, and users of the public footpath around the edge of the site. These would experience significant adverse landscape and visual effects during construction and operation.

2.12.3 It was concluded that road users, recreational users of Belle Greve Bay, ferry users, fishermen and recreational boat users will experience moderate adverse visual effects during construction and operation. Moderate and minor visual effects could be experienced by those that can see the site from their properties, the nearby road, boats or ferries, and from Salerie Battery, Beau Sejour leisure centre and Delancey Park. Minor adverse effects are expected on those that can see the site from Vale Castle or Fort George.

2.12.4 Receptors in and around the residential properties, along the coastal path, and on the road immediately adjacent may experience substantial adverse impacts on landscape and visual amenity. This is because views of the cove/sea will be progressively walled off and movement of machinery will reduce the peacefulness of the gardens, footpath and open space.

2.12.5 To reduce the magnitude of visual impact on Spur Point from other viewpoints, a recommendation has been made for the breakwater crest to tie in at the north-east corner of Spur Point. The crest and breakwater would then be situated behind Spur Point from views from the west. This would prevent the breakwater overwhelming and supplanting Spur Point, leaving the natural landscape feature. This measure would not perceptibly reduce the infill capacity within Longue Hougue South. The final design would incorporate this recommendation.

2.12.6 In addition, planting on the boundary of the site is recommended to further reduce visual impacts. This would entail low level salt-tolerant planting on the current coastline and tree planting on the private access road leading in to the site. Excavated St Peter Port Gabbro could also be placed on the boundary. It is recommended that the planting is monitored annually for several years, to ensure

[9] *Landscape Institute and Institute of Environmental Management and Assessment 'Guidelines for Landscape and Visual Assessment' (third edition)*

vegetation is established, and to review planting / landscaping opportunities as the site is infilled over time, in line with the potential end use.

## 2.13 Marine Ecology

2.13.1 The site sits within the Foreshore Area of Biodiversity Importance (ABI), which encompasses all intertidal habitat in the north of the island. It includes both terrestrial and marine habitats in the intertidal area and is an important consideration for the Project, because the area to be reclaimed is partly within the ABI. Some of this protected area will therefore be permanently lost.

2.13.2 An intertidal survey by Environment Guernsey in 2015 documented 20 different habitat types in the site area. These are typical of rocky shores that are exposed to waves and include lichens; red, brown and green seaweeds; barnacles; and limpets.

2.13.3 An intertidal and boat-based survey was undertaken in July 2019, using drop-down video and grab sampling to determine the subtidal and intertidal habitats in and around the site. The survey found broadly the same habitats. Maerl, a red coralline algae, was documented (290m) outside of the proposed breakwater structure.

2.13.4 A subsequent, more detailed series of surveys confirmed the presence of a moderate-size eelgrass bed within the site footprint. This is a rare and ecologically important habitat and provides nursery grounds for various fish species. There are however two other confirmed large eelgrass beds nearby in Belle Greve Bay, and eelgrass has been recorded in a further 37 locations around the coast. The bed within the site footprint represents less than 8% of confirmed eelgrass habitat (totalling more the 150,000m$^2$ at other surveyed locations around the island).

2.13.5 To mitigate for the potential habitat loss of eelgrass within the site, the current eelgrass beds should be translocated to an adjacent site, potentially within Belle Greve Bay, to provide compensatory habitat. The survival rate of eelgrass beds following initial translocation is considered to be 35%[10], although the bed may expand to its current size in the future. When the translocated eelgrass has been given time to recolonise to its original size or greater, the impact is considered to be negligible. Less than 5% of the eelgrass habitat present in Guernsey is expected to be lost temporarily, but the full extent is expected to be restored over time.

2.13.6 An Eelgrass Translocation Plan should be developed prior to any construction commencing, and a monitoring plan (for a period of at least 3 years following translocation) should be put in place to ascertain its success. Re-seeding can be implemented if significant areas die off within the translocated bed.

[10] *See chapter 4 – References: MMO, 2019*

2.13.7 Marine mammals, including common dolphin and grey seal, are occasionally seen in the waters around Guernsey, and there is a grey seal haul-out site on Herm. A key impact to all marine mammals from any marine activity is underwater noise. However, the activities associated with construction of the breakwater, including the placement of rock on the seabed, have not been found to generate underwater noise levels loud enough to cause any impact on marine mammals.

2.13.8 Another important factor to consider is the risk of collision with vessels. Due to the close proximity of the site to St Peter Port, any marine mammals would be accustomed to the presence of vessels and well adapted to avoiding collision. No significant impacts are expected.

2.13.9 Some of the ABI will be lost due to construction of the breakwater and infill area. As this will affect less than 1% of the overall Foreshore ABI, this impact is considered minor adverse and no mitigation will be required other than that mentioned above for specific species within this ABI.

2.13.10 Some intertidal habitat will be disturbed or lost as a result of the development, but it is a very small proportion of Guernsey's intertidal habitat and has not been identified as ecologically important. The impact is therefore classed as negligible, so no mitigation is required.

## 2.14 Terrestrial Ecology and Ornithology

2.14.1 There is potential for the loss of 500m$^2$ of scrub and grassland, and a length of dry-stone wall during operation as they lie within the site boundary. These form part of the Spur Point ABI, so this would be considered a major adverse impact. However, the majority of this habitat can be retained by agreeing an operational boundary for the infill and retaining a vegetated buffer. This would limit the loss to a small area of tamarisk on the shoreline only, so the residual impact would be negligible.

2.14.2 There are trees with potential bat roosts as close as 75m from the breakwater. Due to tidal constraints, some construction work must take place at night, during which light spill may prevent bats from foraging. This would be classed as a medium-term major adverse impact. However, positioning of lights will be considered during the detailed design phase to ensure no light spills onto the possible roosting area, so there will be no residual impact.

2.14.3 There is potential for some bat-foraging area to be lost (terrestrial and intertidal habitats). However, the intertidal area is not the preferred foraging area for pipistrelle and grey long-eared bats, the two species known to be present in the surrounding area. The impact is therefore considered negligible. Furthermore, agreeing an operational boundary for the infill and retaining a vegetated buffer (as detailed above) would result in no residual impact.

2.14.4 Grey long-eared bats avoid lit areas while foraging and are therefore susceptible to foraging disruption from light from night-time construction. This would be classed as a medium term major adverse impact. Consideration of light positioning in the detailed design phase will ensure light spill over avoids potential foraging areas so there would be no residual impact.

2.14.5 The construction and operation of the facility would result in the loss of 2,000m$^2$ of habitat for the scaly cricket, which is only found at a few locations through the UK and Channel Islands. Spur Point is one of 12 known sites across Guernsey with scaly cricket populations. The permanent loss of a rare, high-value species is considered as a major adverse impact. However, scaly crickets would be translocated to suitable alternative locations, thus maintaining overall population levels. Shingle from Spur Point would also be used to re-nourish other shingle habitats in Guernsey. The residual impact following these mitigation measures is considered as minor adverse.

2.14.6 There is no suitable habitat for slow worm within the site boundary, but some is present in the gardens adjacent to the site. Slow worm could therefore potentially be basking within the site during construction. They are of high ecological value so construction could cause a major adverse impact. A precautionary method of working will be prepared which advises contractors on what to do if a slow worm is discovered on site during construction. It would also be highly likely to move away from the site unaided if disturbed. Overall this will mean there is no residual impact.

2.14.7 There is potential for dust and particulate matter smothering during construction to have an adverse effect on coastal habitat that provides a feeding area for wintering birds. However, any dust will be washed away by the tide, so this is considered to be of negligible significance.

2.14.8 Construction works have the potential to indirectly disturb breeding birds in the scrub habitat around Spur Point. All wild birds are protected under the Animal Welfare Ordinance so any disturbance would be classed as a major adverse impact. If possible, works close to the scrub habitat will take place outside of the breeding season. If this is not possible, a 30m buffer of scrub adjacent to the working area will be removed, to prevent birds nesting before the season begins.

2.14.9 The noise impact assessment (see **Section 2.9**) suggested construction activities could have a moderate adverse disturbance effect on shag, oystercatchers, curlews, and sandwich terns. These are high value species, but the level of noise that would occur would only result in a low level behavioural response such as birds moving slightly to find suitable alternative habitat, which is available across Belle Greve Bay. To mitigate this disturbance, work on the westernmost 200m of the site could be

undertaken between May and September, avoiding the wintering birds season. If this schedule is followed, there would be no impact on these species.

2.14.10 Cormorant, a medium-value species, are also predicted to experience low-level noise disturbance. The impact of this is considered to be minor adverse.

## 2.15 Natural Capital

2.15.1 Natural capital is the world's stock of natural resources, which includes geology, soils, air, water and living organisms. It is from this natural capital that humans derive a wide range of benefits, often called ecosystem services, which make human life possible. The project is predicted to have both positive and negative impacts.

2.15.2 Small scale losses of angling frontage and coastal bird watching habitat are predicted as a result of the development. There will also be a small-scale loss of shell and stone resource and carbon sequestration (from eelgrass reduction).

2.15.3 A medium scale loss of landscape is predicted (see **Section 2.12)**. Medium scale damage to a heritage asset will be offset by its preservation via protection from sea-level rise (see **Section 2.11**).

2.15.4 A small-scale improvement to flood defence is predicted because the breakwater will raise current flood defences and provide greater protection to infrastructure and properties adjacent to the site.

# 3 Summary

3.1.1 Significant impacts as a result of the construction and operation phases of the project identified in the ES are described in **Table 1** and **Table 2**.

*Table 1 Construction Phase Residual Impacts*

| Topic | Impact | Residual Impact Significance |
|---|---|---|
| **Marine Sediment and Water Quality** | Deterioration in water quality due to increase in suspended sediment | Minor Adverse |
| | Release of contaminated sediments | Minor Adverse |
| | Accidental release of contaminants | Low Risk |
| **Land Use, Land Quality, Soil Quality, Geology and Hydrogeology** | Disturbance to potentially contaminated sites | Minor Adverse |
| | Disturbance to geological sites | Moderate Adverse |
| | Disruption to land use | Moderate Adverse |
| **Traffic and Transport** | Road safety | Minor Adverse |
| | Driver delay | Minor Adverse |
| **Noise and Vibration** | Road traffic noise | Minor Adverse |
| | Vibration from construction works | Minor Adverse |
| **Population and Human Health** | Recreational resources | Minor Adverse |
| | Community assets | Minor Adverse |
| | Human Health | Minor Adverse |
| **Material Assets (Archaeology, Built & Cultural Heritage)** | Impact on the setting of gun emplacement at Spur Point | Major Positive |
| | Impacts on the setting of heritage assets | Minor Adverse |
| **Landscape Character and Visual Amenity** | Effects on landscape character areas | Minor Adverse to Substantial Adverse |
| | Visual effects on viewers at recognised views | Negligible to Moderate Adverse |
| | Visual effects on receptor groups | Negligible to Substantial Adverse |
| | Visual effects from Conservation Areas | Minor Adverse |
| **Marine Ecology** | Habitat alteration | Negligible to Minor Adverse |
| | Changes to water quality and impacts on habitats and species | Negligible to Minor Adverse |
| | Collision risk with marine mammals | Minor Adverse |

*Table 2 Operation Phase Residual Impacts*

| Topic | Impact | Residual Impact Significance |
|---|---|---|
| **Surface Water and Flooding** | Reduced flood risk – surface waterbody, Infrastructure and property properties with and adjacent to the site | Minor Positive |
| | Alteration to land use | Moderate Positive |
| **Traffic and Transport** | Road safety | Minor Adverse |
| | Driver delay | Minor Adverse |
| **Noise and Vibration** | Road traffic noise | Minor Adverse |
| **Population and Human Health** | Recreational resources | Negligible and Minor Adverse |
| | Human health | Minor Adverse |
| **Material Assets (Archaeology, Built & Cultural Heritage)** | Direct impact on maritime and aviation archaeology below high water | Minor Adverse |
| | Impacts on the setting of heritage assets | Minor Adverse |
| **Landscape Character and Visual Amenity** | Effects on landscape character areas | Minor Adverse to Substantial Adverse |
| | Visual effects on viewers at recognised views | Negligible to Moderate Adverse |
| | Visual effects on receptor groups | Negligible to Substantial Adverse |
| | Visual effects on viewers in Conservation Areas | Minor Adverse |
| **Marine Ecology** | Loss of habitat in the Foreshore ABI | Minor Adverse |
| | Loss of intertidal habitat | Negligible to Minor Adverse |
| | Loss of eelgrass | Minor Adverse |
| **Terrestrial Ecology and Ornithology** | Loss of wintering bird foraging habitat | Minor Adverse |
| | Reduction in scaly cricket population | Minor Adverse |

| Topic | Impact | Residual Impact Significance |
|---|---|---|
| Natural Capital | Damage to a heritage asset offset by its preservation asset via protection from sea-level rise | Major Positive |
| | Loss of shell and stone resource | Small-scale Adverse |
| | Loss of angling locations | Small-scale Adverse |
| | Loss of bird watching habitat | Small-scale Adverse |
| | Loss of carbon sequestration | Small-scale Adverse |
| | Improvement in flood defence | Small-scale Positive |
| | Loss of bird watching habitat | Small-scale Adverse |
| | Loss of landscape | Small-scale adverse |

3.1.2 The following impacts were found to be negligible or no impact, following the mitigation described where appropriate:

- Construction phase dust and particulate matter.
- Construction phase road traffic emissions.
- Operational phase road traffic emissions.
- Operational phase dust.
- Changes in suspended sediment concentrations due to the construction of the breakwater.
- Changes in sea-bed level due to the construction of the breakwater.
- Changes to the tidal current regime due to the presence of the facility.
- Changes to sediment transport and erosion / accretion patterns due to the project.
- Changes to the wave regime due to the presence of the facility.
- Increased suspended sediments – habitats.
- Increased suspended sediments – fish species.
- Increased suspended sediments – Maerl beds.

- Direct impact on maritime and aviation archaeology below high water.
- Direct impact on buried archaeology and cultural heritage assets above high water.
- Direct impact on all other World War II heritage assets.
- Direct impact conservation areas and built heritage assets.
- Indirect impact associated with changes to coastal processes.
- Direct impact on World War II heritage assets.
- Temporary habitat loss within Spur Point ABI.
- Indirect disturbance to terrestrial and coastal habitats from dust and particulate matter emissions.
- Direct impact to potential bat roosts.
- Visual disturbance to wintering birds.
- Noise disturbance to birds.
- Impacts upon prey species.
- Loss of intertidal and terrestrial bat foraging habitat.
- Potential for increased surface run-off – surface waterbody, infrastructure and property properties with and adjacent to the site.
- Reduced flood risk – surface waterbody, Infrastructure and property properties with and adjacent to the site.
- Pollution of surface waterbody due to accidental release of fuels, oils, lubricants and construction materials.
- Potential for increased surface run-off.
- Reduced flood risk.
- Temporary habitat loss / disturbance within Spur Point ABI.
- Terrestrial habitat loss within Spur Point ABI.
- Change to habitats in Herm, Jethou and the Humps Ramsar.
- Severance (the separation of people from other people and places by a major traffic route).
- Pedestrian and cycling amenity.
- Deterioration in water quality due to long-term changes in the hydrodynamic regime.
- Release of contaminated sediment during operation phase.

- Increase in suspended sediment concentrations during operation phase.
- Loss of small mammal, wall lizard and wintering bird habitat.
- Operation phase noise.
- Disturbance to fish habitats.
- Loss of eelgrass beds.
- Changes to marine habitats due to a change in tidal flow rates.

## 3.2 Cumulative Impact Assessment

3.2.1 Potential cumulative impacts have been considered with reference to other known proposed developments in the surrounding area. All key developments that are currently within the planning system have been screened. Most of the cumulative impacts are limited to noise, visual and traffic disturbance, if construction periods overlap.

## 3.3 Mitigation

3.3.1 Where possible, mitigation measures have been identified to reduce the severity of potential impacts during construction. A summary of these is provided below:

- Implementation of Construction Environmental Management Plan to prevent or respond to accidental spills and leaks;
- Implement Asbestos Management Strategy and adopt cover layers;
- Excavation and placement of St Peter Port Gabbro on the edge of the site;
- Best practice dust minimisation and suppression techniques via the implementation of a Dust Management Plan;
- Implementation of a construction noise management plan;
- Use of a protocol for archaeological discoveries during construction;
- Preservation of the World War II gun emplacement during construction;
- Rock deposition by barge to occur at north-east end of the site;
- Translocation and, if necessary, re-seeding of eelgrass in a suitable location;
- Positioning of any lighting to avoid light spills along the landward boundary;
- Precautionary method of working to be used;
- Translocation of scaly cricket habitat to suitable location;
- Consideration of timing to avoid the wintering bird period;
- Management of breeding bird habitat to avoid disturbance.

3.3.2 Where possible, mitigation measures have been identified to reduce the severity of potential impacts during the operation phase. These are summarised below:

- Use of geotextile or prioritising placement of fines away from breakwater in the Site Operational Plan;
- Re-routing/protection of waste transfer station drainage;
- Best practice dust minimisation and suppression techniques
- Use of moveable 1.8m high acoustic barrier(s) when infilling activities are located within 100m of MP1;
- Planting of salt-tolerant trees and shrubs on the landward boundary of the site to reduce landscape impact;
- Revise design so the breakwater ties in to the north-east / east of Spur Point to reduce landscape impact.

## 3.4 Monitoring

3.4.1 It is recommended that the following is undertaken:

- Monitoring of the Construction Environmental Management Plan;
- Daily visual inspections of suspended sediment concentrations;
- Off-site visual inspections for dust; and
- Monitoring of the future use, site infilling activities and potential landscaping enhancements every five years;
- Eelgrass growth and health should be monitored annually for three years post translocation;
- Two years' monitoring of scaly cricket translocation.
- Noise monitoring when infilling activities are closer than 100m to the nearest receptor (MP1).

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