

Longue Hougue South EIA

- *Stakeholder Briefing*

Peter Thornton, Gemma Starmore, Gary Bower

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Open

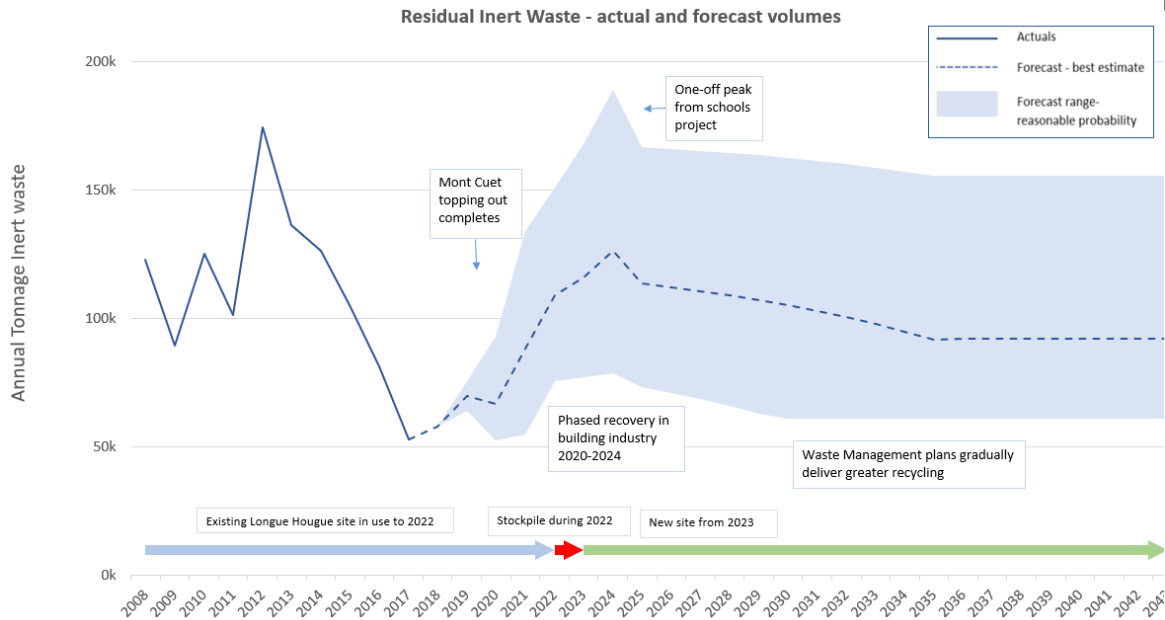


Introduction and Content

- Inert Waste Management and Capacity
- Inert Waste Strategy
- Project Design
- Environmental Impact Assessment (EIA)
- Summary of the EIA

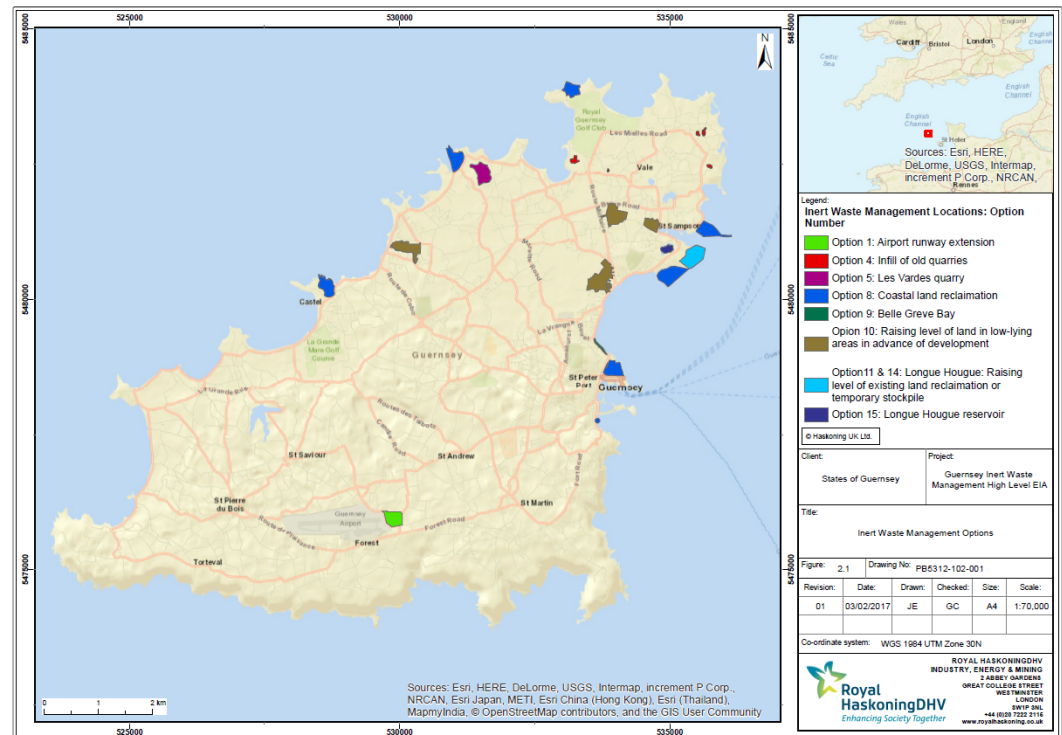
Inert Waste Management

- Inert waste is defined in the Guernsey Waste Disposal and Recovery Charges Regulations (2017).....
- Management of inert waste
- Capacity



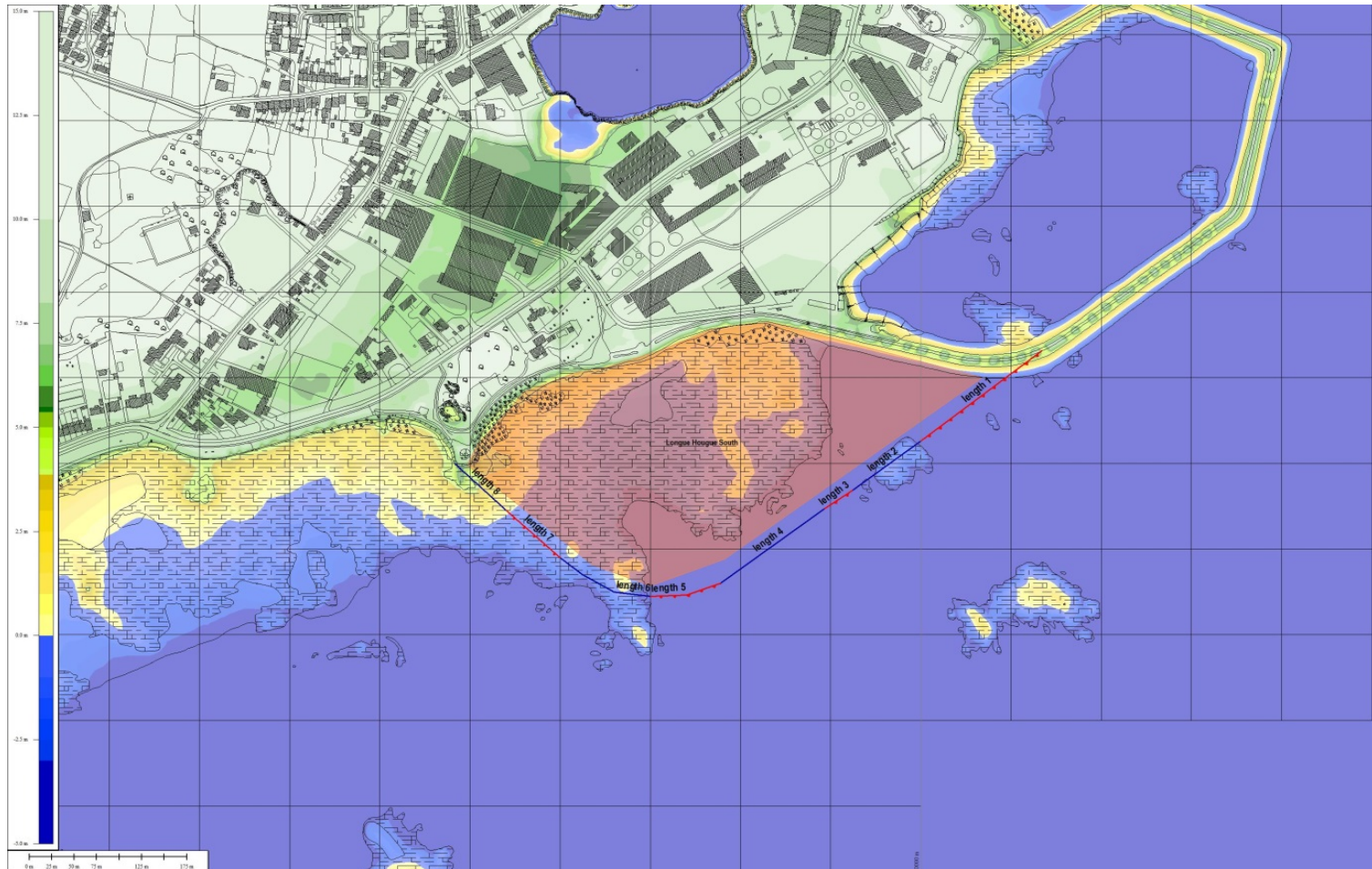
Inert Waste Management Strategy

- The Waste Strategy was built on by an Inert Waste Management Solution Options Assessment.
- The Options Assessment included the a Best Practicable Environmental Options (BPEO) and a High Level Environmental Impact Assessment for 51 options:
 - Off island solutions of exporting the waste
 - Disposing material to sea
 - Island based facility including a review of all existing quarries
 - Screening
 - Assessment
 - High Level Assessment
 - Preferred Option – Longue Hougue South



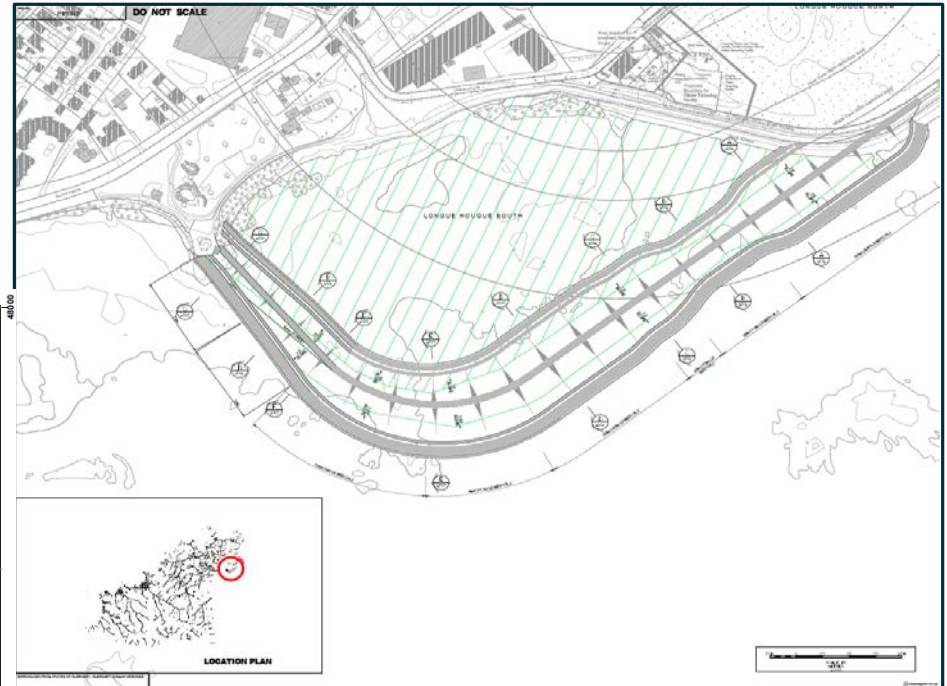
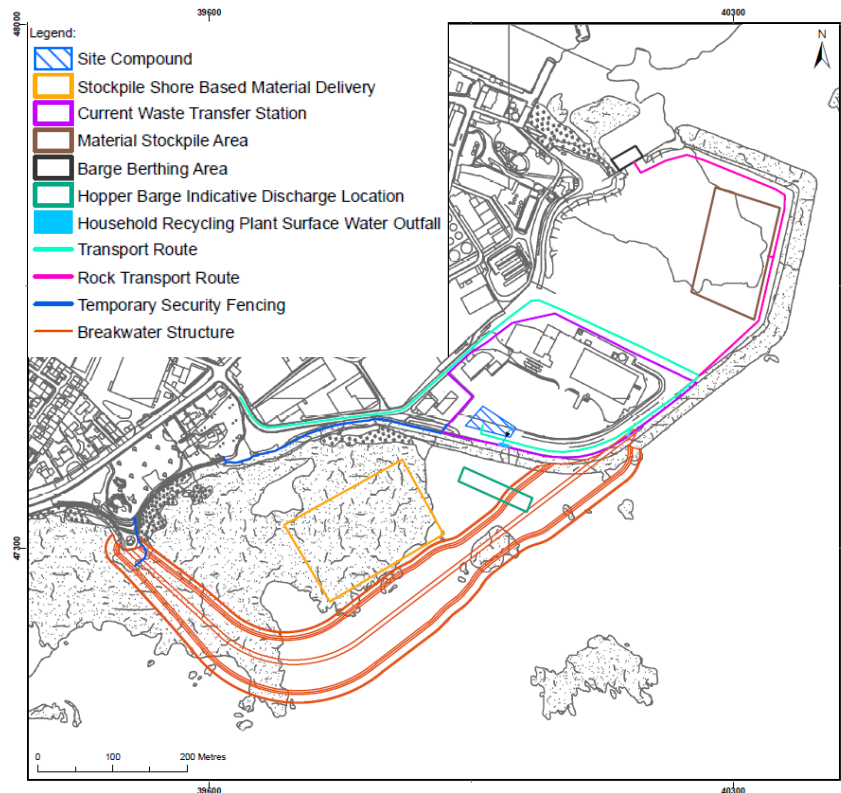
Best Practicable Environmental Option

- Longue Hougue South – preferred option



Project Design

- Reasons for preference
- Design basis
- Design criteria



- Capacity
- Construction methods
- Operational activities

Environmental Impact Assessment

- Consideration of built, human, and natural environment
- Staged consideration of potential impacts:
 - Stage 1 – Scoping (informal Scoping Opinion)
 - Stage 2 – Main EIA and submission of ES
- Consultation

Environmental Impact Assessment

- Stage 1 – Scoping (informal Scoping Opinion)
 - Baseline (excluding detailed surveys and desk-based data collection)
 - Identification of potentially significant impacts
 - Statement of additional data collection requirements and assessment methods
- Consultation (aims)
 - Identify any other appropriate and relevant available data
 - Identify whether other potential receptors have not been identified
 - Identify whether other potential impacts have not been ‘scoped’

Environmental Impact Assessment

- Stage 2 – Main EIA
 - Completion of baseline environment description
 - Assessment of potential impacts
 - Determine and evaluate mitigation measures for significant impacts
 - Residual impact assessment
 - Construction Environment Management Plan
 - Monitoring
 - Consultation

Physical Environment (Coastal Processes)

Informed by:

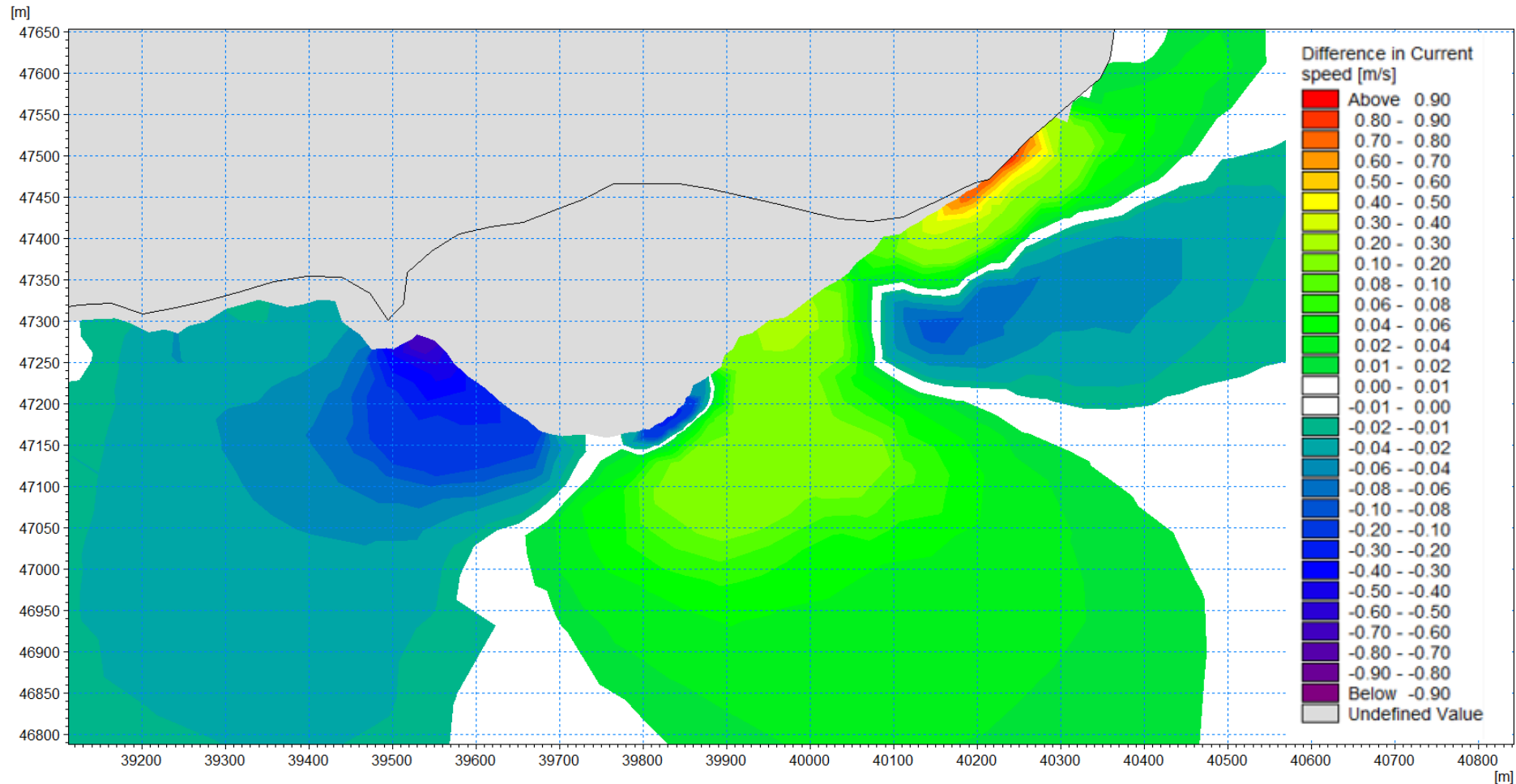
- Computer modelling – bathy / Lidar, Regional model (local wave and tidal conditions)
- Consultation with Pilots
- Seabed sediment survey and analysis

Predicted impacts:

- The speed of tidal currents will both increase and decrease.
- Current speed will increase next to the breakwater and next to the existing Longue Hougue Reclamation Site.
- Current speed will decrease near to (west of) Spur Point.
- The largest changes are very close to the site boundary and reduce significantly with distance, with negligible changes within a few hundred metres (localised).
- There is no change predicted to the Herm Ramsar site or across the approaches to St Sampson's Harbour.

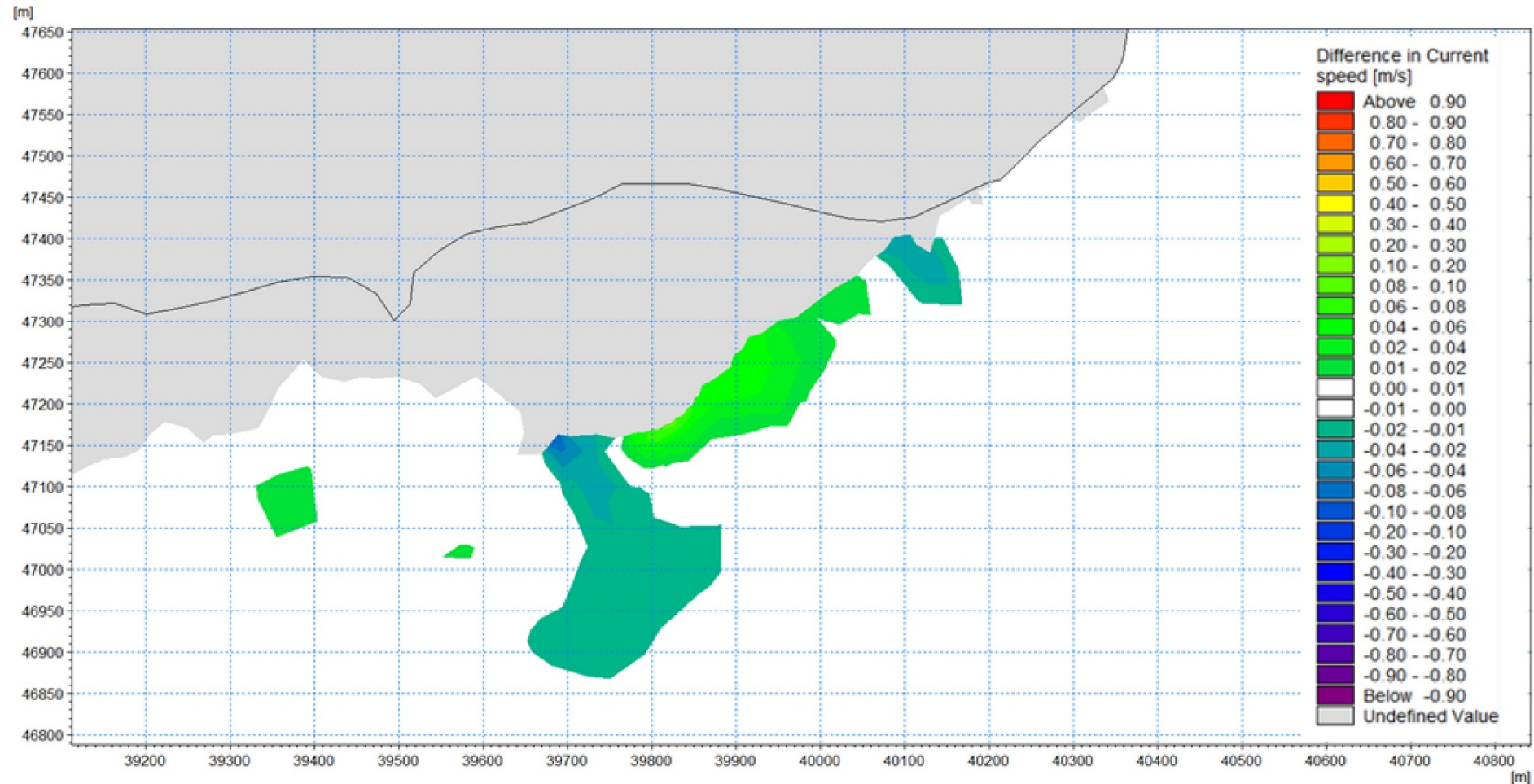
Physical Environment (Coastal Processes)

Changes to Tidal Currents (Operation) – Spring Tide



Physical Environment (Coastal Processes)

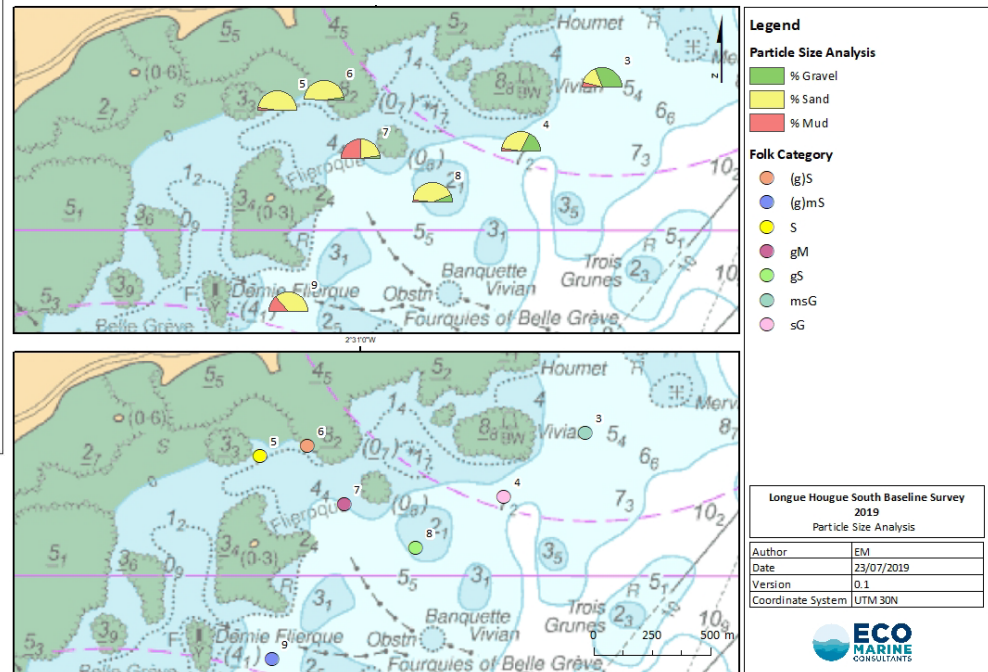
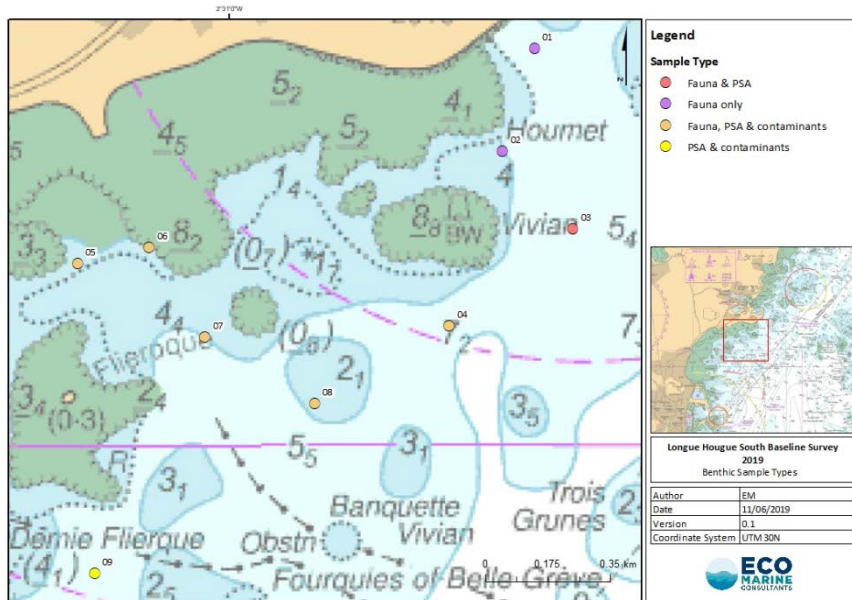
Changes to Tidal Currents (Operation) – Neap Tide



Marine Sediment and Water Quality

Informed by:

- Sediment sampling and analysis during benthic survey
- Water quality data held by States



Marine Sediment and Water Quality

Predicted impacts:

- Deterioration in water quality due to increased suspended sediments during construction – Minor adverse.
- Release of contaminated sediments during construction – Minor adverse.
- Accidental release of contaminants during construction – Low risk.
- Release of contaminated sediments during operation – No impact.
- Increase in suspended sediment concentrations during operation – Minor adverse reducing to negligible with mitigation.
- Deterioration in water quality due to long-term changes to the hydrodynamic regime – No impact.
- Accidental release of contaminants during operation – Very low risk.

Surface Water

Informed by:

- Sewer and drainage information.
- Flood risk data.

Predicted impacts:

- Increased surface run-off and risk of flooding - surface waterbody and infrastructure and property at Longue Hougue South – no impact
- Increased surface run-off and risk of flooding – infrastructure and properties in Longue Hougue area – major adverse impact reducing to no impact following mitigation.
 - At relevant stage the current outfall locations will need to be extended or re-routed through the Longue Hougue South site.
- Reduced flood risk – Minor positive impact.

Land Quality, Geology and Hydrogeology

Informed by:

- Site walkover, aerial photography and mapping (Digimap)
- Previous surveys and studies (on Longue Hougue)
- Wider literature

Predicted impacts:

- Disturbance to potentially contaminated sediment – Major adverse reducing to minor adverse with mitigation.
 - Asbestos Management Strategy and cover layers.
- Disturbance to geological site (gabbro) – Major adverse reducing to moderate adverse with mitigation.
 - Excavation of rock boulders and installation on site boundary.
- Disruption to land use during construction – No impact.
- Alteration to land use after operation – Moderate beneficial impact.
- Cumulative impact to geological site – No cumulative impact.

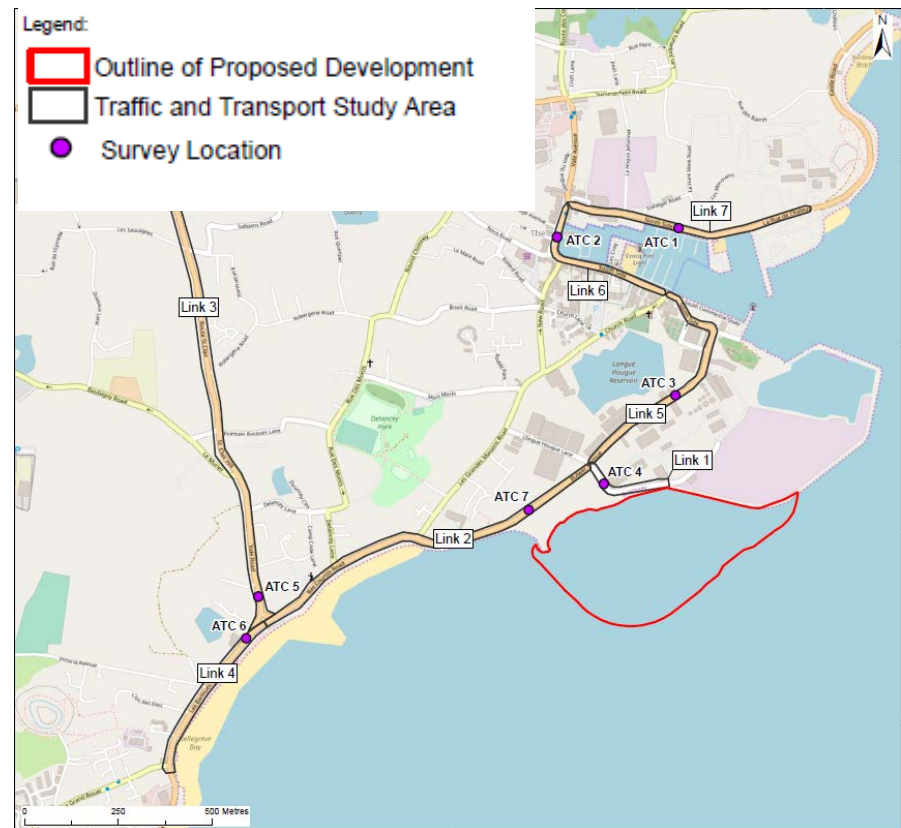
Traffic and Transport

Informed by:

- Desktop information and site visit
- Personal injury / accident data from States.
- Traffic count survey.
- Computer modelling.
- Housing allocation data.

Generated by:

- Construction programme.
- Traffic demand and distribution during construction.
- Construction workforce.
- Operation phase infill volumes and traffic demand and distribution.
- Operation phase workforce.



Traffic and Transport

Predicted impacts:

- Road safety during construction – Minor adverse impact.
- Driver delay during construction – Minor adverse impact.
- Pedestrian and cycling amenity during operation – Negligible.
- Severance during operation – Negligible.
- Road safety during operation - Minor adverse impact.
- Driver delay during operation – Minor adverse impact.

Air Quality

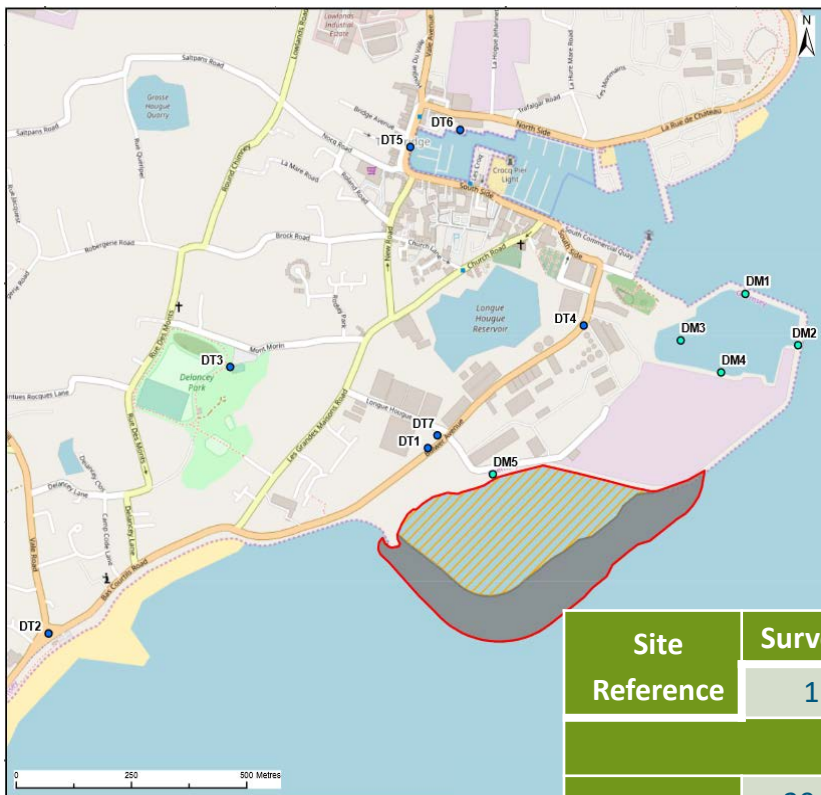
Informed by:

- Dust deposition, particulate matter, and NO₂ monitoring data.
- Computer modelling.
- Traffic and construction / operational plant and activities.

Site Location	Annual Mean Monitored Concentration (µg.m ⁻³)									
	NO ₂					PM ₁₀				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Bulwer Avenue	23.0	21.0	16.0	14.0	14.0	27.0	29.0	28.0	25.0	24.0
Annual data capture (%)	57.63	95.64	99.6	92.0	99.1	84.34	76.06	96.0	95.9	99.1

Site ID	Location	Monitored Annual Mean NO ₂ Concentrations (µg.m ⁻³)				
		2013	2014	2015	2016	2017
VAL1	Corner of Northside / Hougue Jehannet (near Guernsey Electricity Limited)	28.2	18.8	11.6	14.6	13.4
STS1	Southside, St Sampson (opposite Wayfarers Travel)	18.9	18.1	12.7	16.4	15.3
STS3	Les Banques, St Sampson (by Guernsey Water site)	25.9	21.5	20.8	20.2	19.1

Air Quality



Site Location	Annualised Concentration NO ₂ (µg.m ⁻³)
DT1	22.9
DT2	23.9
DT3	9.9
DT4	22.7
DT5	17.8
DT6	16.2
DT7	19.0

Site Reference	Average
PM ₁₀ (µg.m ⁻³)	
DT1	51.6
DT2	52.5
DT3	35.4
DT4	55.3
DT5	46.7
DT6	40.2
DT7	60.7
PM _{2.5} (µg.m ⁻³)	
DT1	13.2
DT2	16.0
DT3	11.3
DT4	12.7
DT5	12.9
DT6	12.2
DT7	12.0

Site Reference	Survey Period			Survey Period Average
	1	2	3	
NO ₂ (µg.m ⁻³)				
DT1	29.1	22.7	28.6	26.8
DT2	30.6	23.2	30.2	28.0
DT3	10.1	7.6	17.1	11.6
DT4	29.2	25.7	25.7	26.8
DT5	21.8	17.7	22.9	20.8
DT6	20.0	18.0	18.9	19.0
DT7	23.3	18.3	18.3	20.0

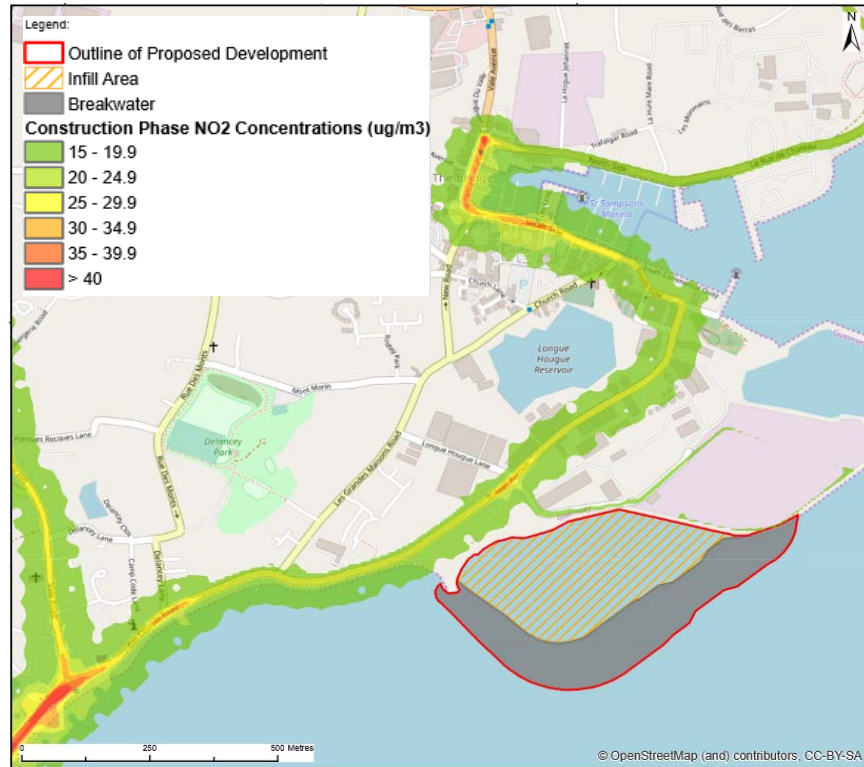
Air Quality

Predicted impacts:

- Construction phase dust and particulates – Not significant
- Construction phase road traffic emissions – Not significant
- Operational phase dust and particulates – Significant without mitigation reducing to not significant with mitigation
 - Best practice dust minimisation and suppression techniques
- Operational phase road traffic emissions – Not significant
- Cumulative dust and particulates – Not significant
- Cumulative road traffic emissions – Not significant

Air Quality

Construction Phase NO₂



Operation Phase NO₂

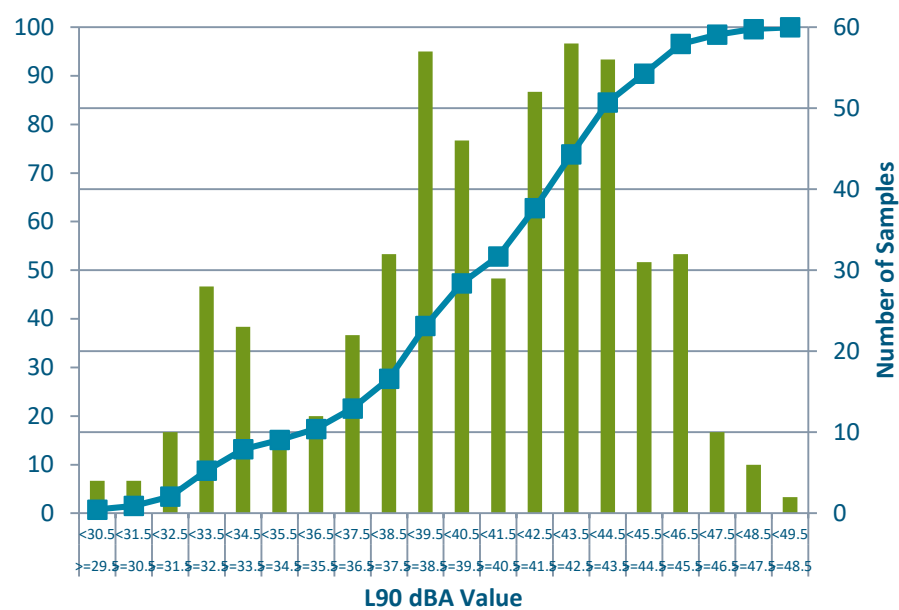


Noise and Vibration

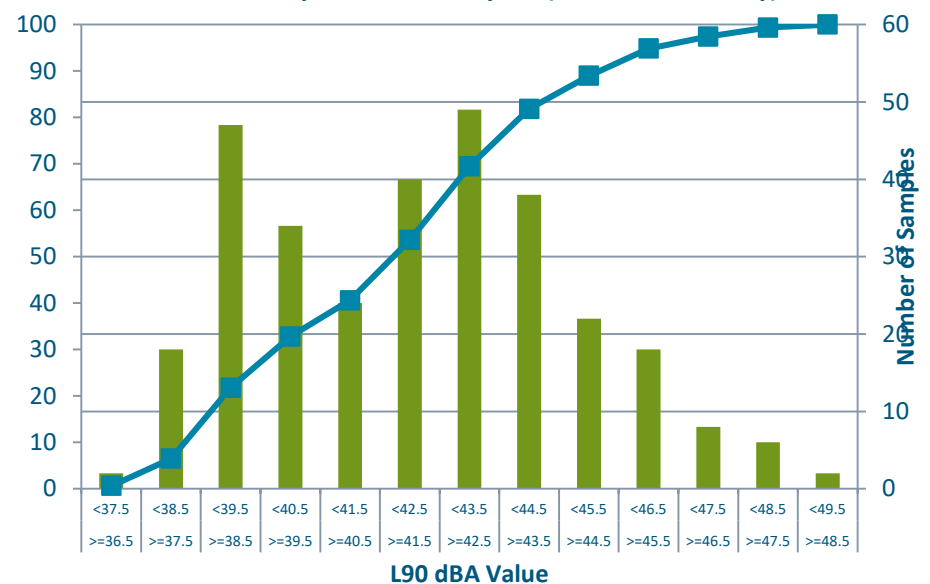
Informed by:

- Noise survey data.
- Computer modelling.
- Traffic and construction / operational plant and activities.

Location MP1 Day time LA90 Analysis - 07:00 to 23:00



Location MP1 Day time LA90 Analysis - (07:00 to 17:00 Only)



Number of samples Cumulative

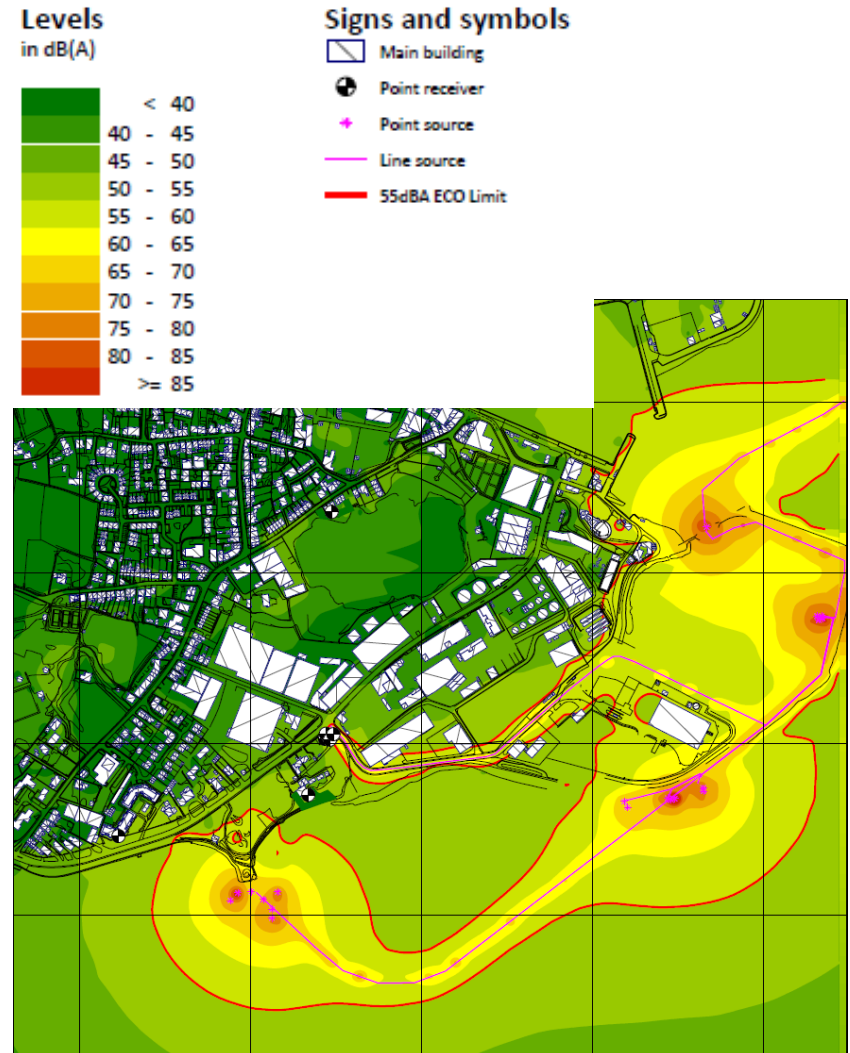
Number of samples Cumulative

Noise and Vibration

Modelling scenarios:

1. Option 1 Construction commences eastern section (1 team).
2. Option 1 Construction commences western section (1 team).
3. Option 1 Construction commences at both ends simultaneously.
4. Option 2 Construction commences eastern section (1 team).
5. Option 2 Construction commences western section (1 team).
6. Option 2 Construction commences at both ends simultaneously.

***Noise contour plot for Construction
'Option 2' Both Ends – daytime***

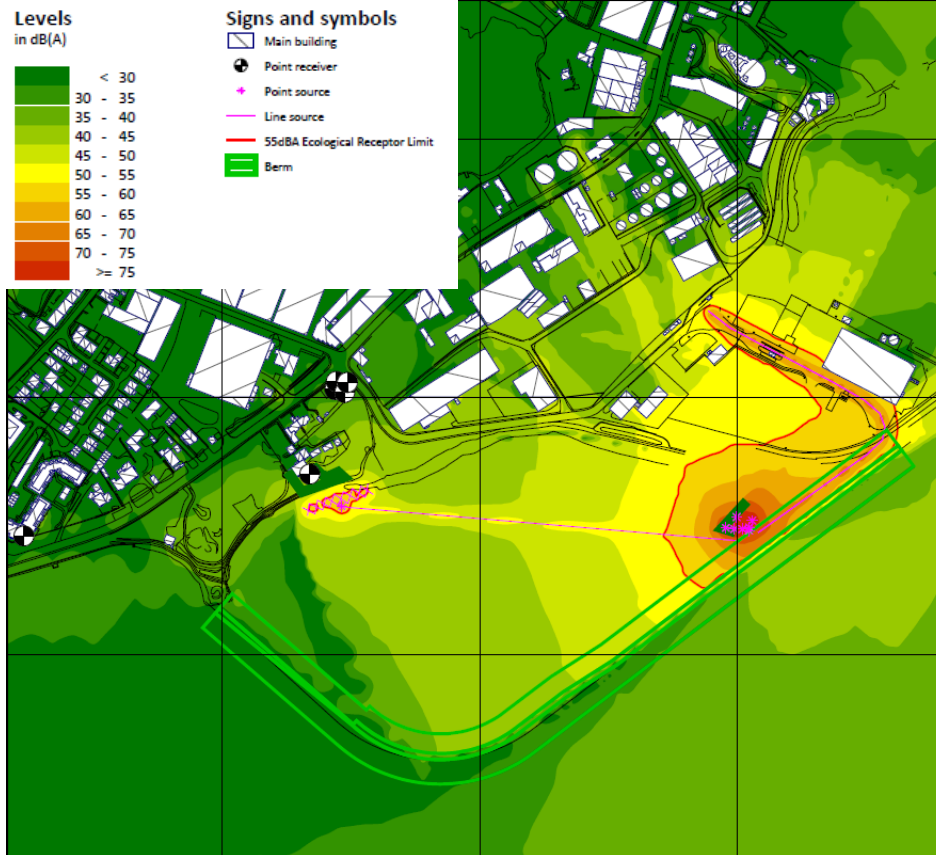


Noise and Vibration

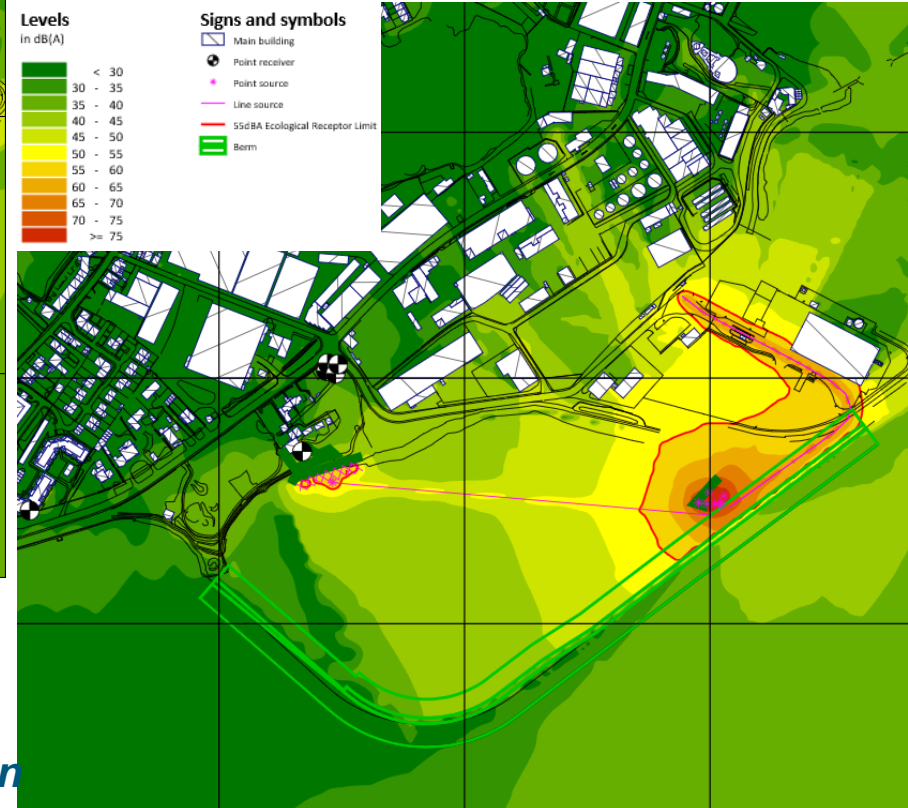
Predicted impacts:

- Construction phase noise – Negligible to minor adverse reducing to negligible with mitigation
 - Best practice measures
- Construction phase road traffic noise – Minor adverse
- Operational phase road traffic noise – Minor adverse
- Operational phase noise – Negligible to minor adverse reducing to negligible with mitigation
 - Infilling operational management
- Cumulative noise – Not significant

Noise and Vibration



Noise Contour Plot for Operation Phase without Mitigation in Last Years of Operation



Noise Contour Plot for Operation Phase with Mitigation in Last Years of Operation

Population and Human Health

Informed by:

- Desk-based sources (States of Guernsey Commerce and Employment, Committee for the Environment and Infrastructure)
- Other topics (traffic and transport, air quality, noise and vibration, landscape and visual character)

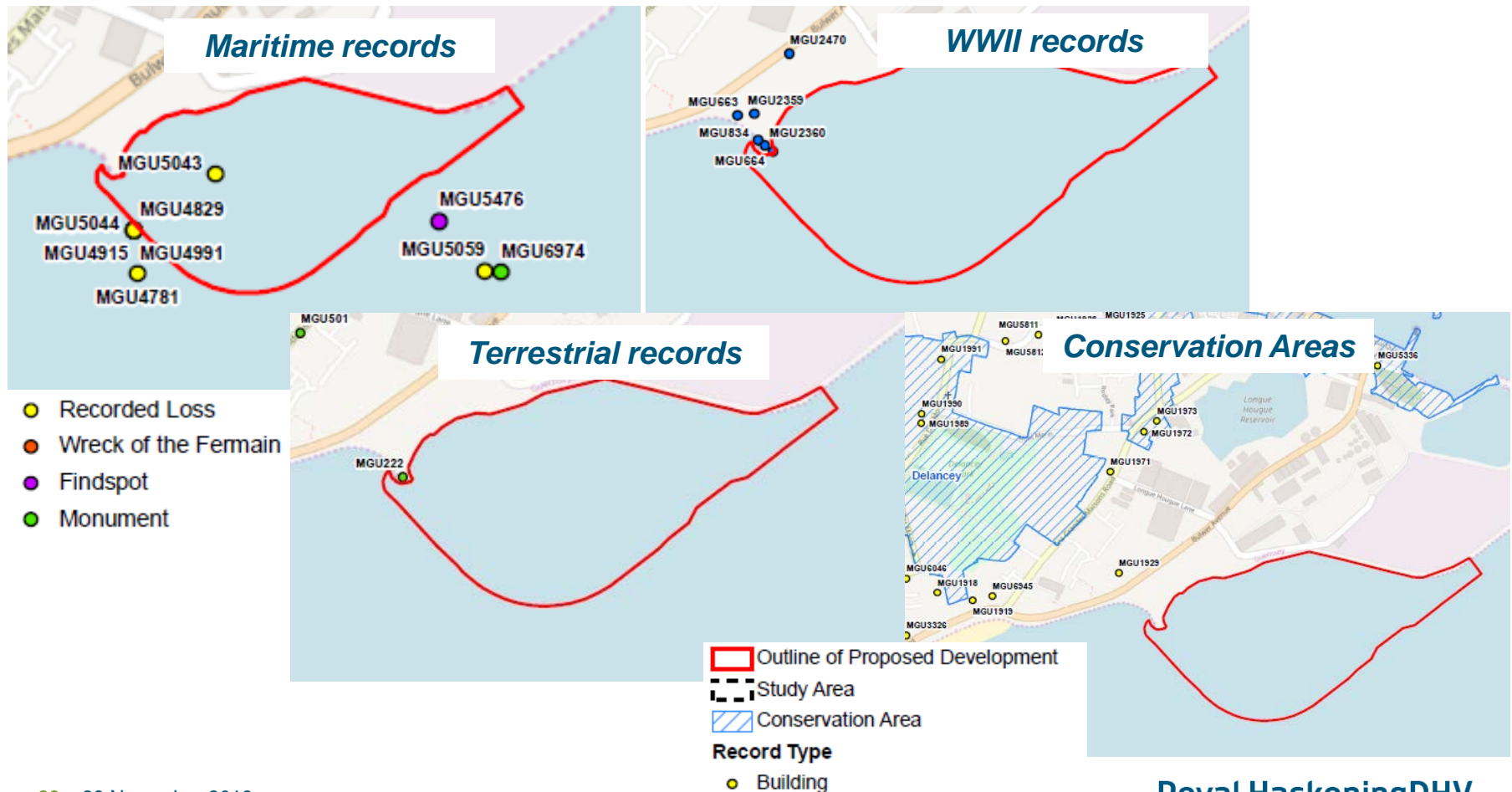
Predicted impacts:

- Recreational resources during construction – Not significant to moderate adverse reducing to not significant
- Community assets during construction – Not significant to minor adverse
- Human health during construction - Not significant to minor adverse
- Recreational resources during operation – Negligible to minor adverse
- Human health during operation - Not significant to minor adverse

Material Assets (Historic)

Informed by:

- Guernsey Sites and Monuments Record (SMR)



Material Assets (Historic)

Predicted impacts during construction:

- Impact on maritime and aviation archaeology – Minor adverse reducing to negligible with mitigation
- Impact on buried archaeology and cultural heritage – Minor adverse reducing to negligible with mitigation
- Impact on WWII gun emplacement – Major adverse changing to major positive with mitigation
- Impact on other WWII heritage assets – No impact
- Impact on Conservation Areas and built heritage assets – No impact
- Indirect impact to archaeological receptors from change in coastal processes – No impact
- Impact on setting of heritage assets – Minor adverse
- Impact on setting of gun emplacement - Major adverse changing to major positive with mitigation

Material Assets (Historic)

Predicted impacts during operation:

- Impact on maritime and aviation archaeology – Minor adverse
- Impact on buried archaeology and cultural heritage – No impact
- Impact on WWII gun emplacement – No impact
- Impact on other WWII heritage assets – No impact
- Impact on Conservation Areas and built heritage assets – No impact
- Indirect impact to archaeological receptors from change in coastal processes – No impact
- Impact on setting of heritage assets – Minor adverse

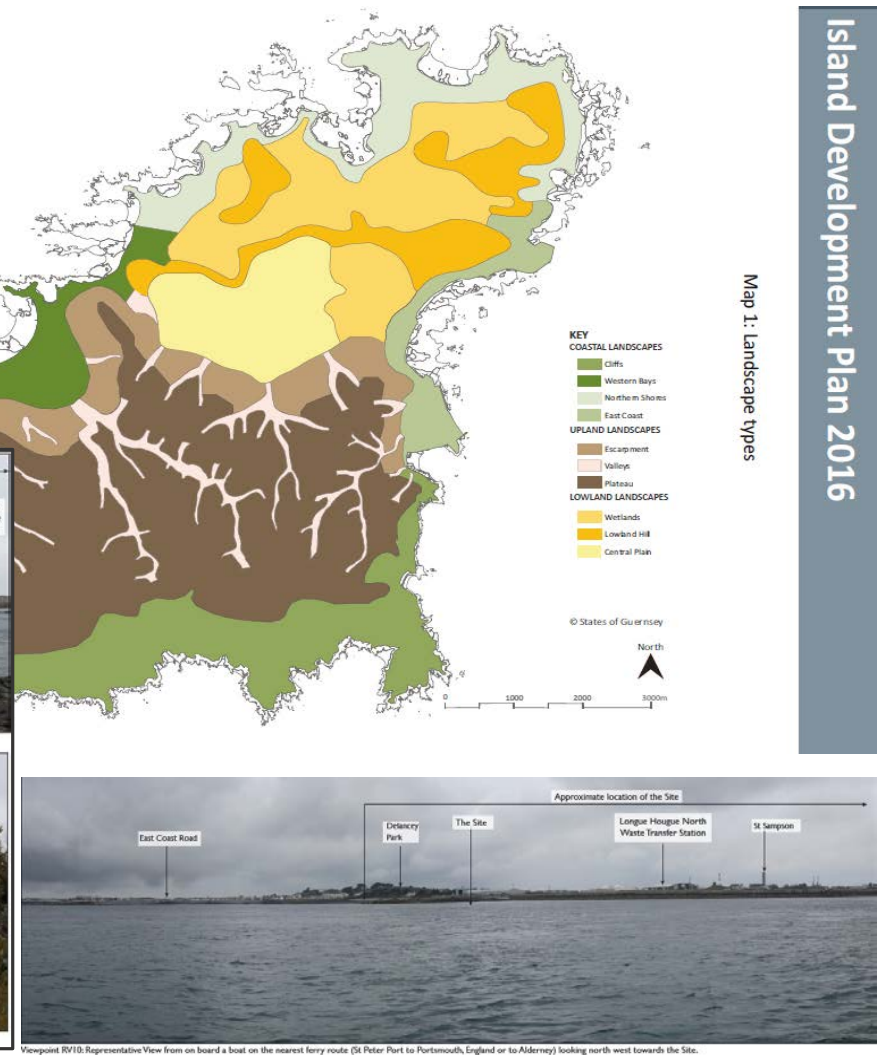
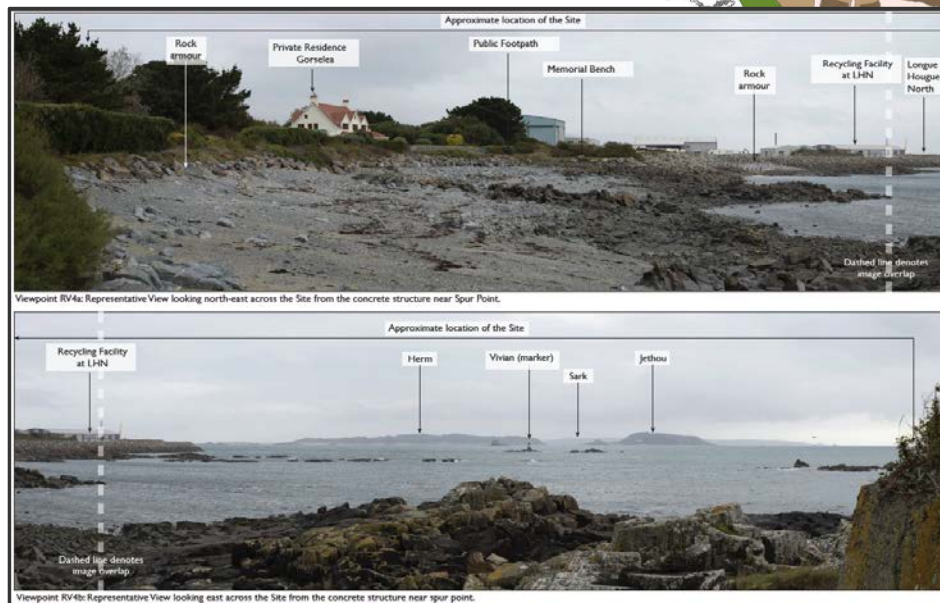
Predicted cumulative impacts:

- Disturbance to heritage assets – No cumulative impact
- Indirect disturbance to heritage assets due to changes in coastal processes - No cumulative impact
- Impact on the setting of heritage assets and Conservation Areas - No cumulative impact

Landscape and Visual Character

Informed by:

- Guernsey Character Study
- Island Development Plan
- Site visit



Landscape and Visual Character

Predicted impacts during construction:

- Effect on landscape character – Minor to Substantial adverse
- Effect on viewers at Recognised Views – Negligible to Moderate adverse
- Effect on visual receptor groups - Negligible to Substantial adverse

Predicted impacts during operation:

- Effect on landscape character – Minor to Substantial adverse
- Effect on viewers at Recognised Views – Negligible to Moderate adverse
- Effect on visual receptor groups - Negligible to Substantial adverse

Mitigation measures:

- Spur Point tie-in at the north-eastern corner.
- Planting in areas around the landward boundary.



Marine Ecology

Informed by:

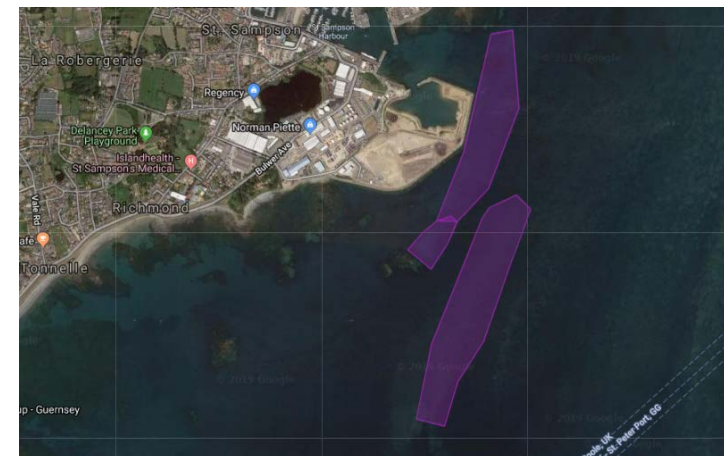
- Surveys (Phase 1 and II (intertidal), benthic)
- Guernsey Biological Records Centre
- Other reports and desktop sources



Legend

- Artificial substrata
- Artificial substrata with seaweeds
- LR.HIR.KSed.LsacSac
- LR.FLR.Eph.BLitX
- LR.FLR.Eph.Ent
- LR.FLR.Eph.EphX
- LR.FLR.Lic.Ver
- LR.FLR.Lic.YG
- LR.FLR.Rkp.FKSar
- LR.FLR.Rkp.G
- LR.HLR.FR.Him
- LR.HLR.FR.Mas
- LR.HLR.FT.FserTX
- LR.HLR.MusB.Cht
- LR.HLR.MusB.Cht.Lpyg
- LR.HLR.MusB.Sem
- LR.HLR.MusB.Sem.FvesR
- LR.HLR.MusB.Sem.Sem
- LR.LLR.F.FSerr.X
- LR.LLR.F.Fspi.X
- LR.LLR.F.Fves.X
- LR.LLR.F.Pel
- LS.LCS.Sh
- LS.LCS.Sh.Barsh
- LS.LSa
- LS.LSa.McSa.BarSa
- Not Surveyed
- SS.SMp.SSgr.Zmar
- Subtidal

N.B. Grid projection: Guernsey grid.

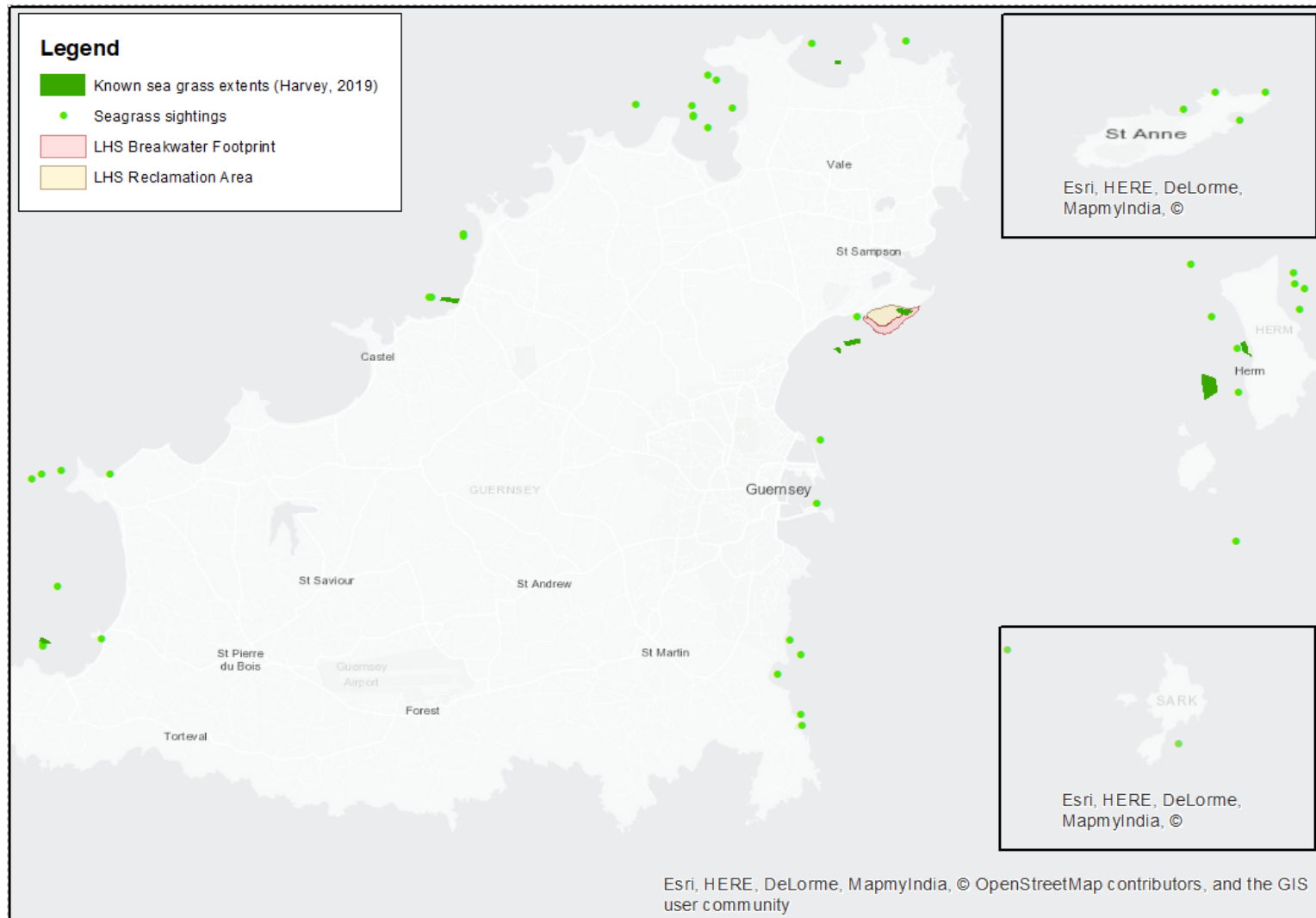


Marine Ecology

Predicted impacts during construction:

- Disturbance to habitat in the Foreshore ABI – Minor adverse
- Disturbance to intertidal habitat – Negligible to minor adverse
- Disturbance to fish habitats – Negligible
- Disturbance to eelgrass beds – Moderate adverse reducing to minor adverse following mitigation measures
- Increased suspended sediments and contamination (marine habitats) – Negligible to minor adverse
- Increased suspended sediments and contamination (fish habitats) - Negligible
- Increased suspended sediments and contamination (maerl beds) – Minor adverse
- Increased suspended sediments (commercial fish species) – Negligible to minor adverse
- Collision risk with marine mammals – Minor adverse

Marine Ecology



Marine Ecology

Predicted impacts during operation:

- Loss of habitat in the Foreshore ABI – Minor adverse
- Loss of intertidal habitat – Negligible to minor adverse
- Loss of fish habitat – Negligible
- Loss of eelgrass beds – Moderate adverse reducing to minor adverse following mitigation measures
- Physical disturbance / habitat alteration (Foreshore ABI) – Minor adverse
- Physical disturbance / habitat alteration (intertidal habitats) – Negligible to minor adverse
- Physical disturbance / habitat alteration (fish habitats) – Negligible
- Physical disturbance / habitat alteration (eelgrass beds) – Moderate adverse reducing to minor adverse following mitigation measures

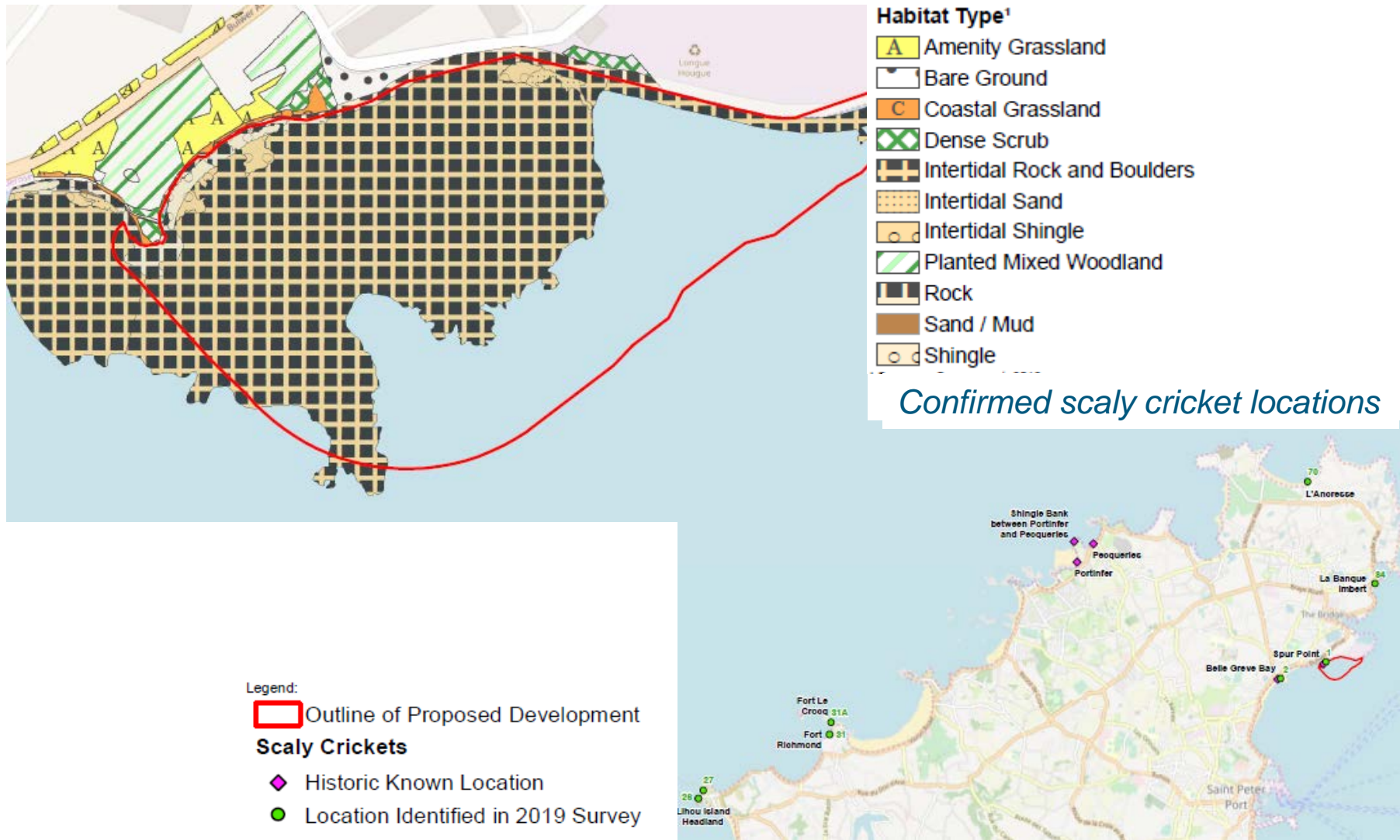
Terrestrial Ecology

Informed by:

- Surveys (Phase 1 and II (intertidal), scaly cricket)
- Guernsey Biological Records Centre
- Guernsey Birds Website
- Other reports and desktop sources
- Consultation and liaison with other stakeholders (La Société Guernesiaise)



Terrestrial Ecology



Terrestrial Ecology

Predicted impacts during construction:

- Indirect disturbance to coastal habitats within Spur Point ABI from dust emissions – Negligible
- Indirect impact to potential bat roosts – Major adverse reducing to no impact with mitigation measures
- Disturbance to foraging bats (grey long-eared bat) – Potential Major adverse reducing to no impact with mitigation measures
- Disturbance to reptiles – Potential Major adverse reducing to no impact with mitigation measures
- Noise disturbance to birds (shag, oystercatcher, curlew and sandwich tern) in Belle Grève Bay – Moderate adverse reducing to no impact with mitigation measures
- Noise disturbance to cormorant – Minor adverse
- Visual disturbance to wintering birds – Negligible
- Impact on prey species – Negligible
- Indirect disturbance to breeding birds - Major adverse reducing to no impact with mitigation measures

Terrestrial Ecology

Predicted impacts during operation:

- Terrestrial habitat loss within Spur Point ABI – Major adverse reducing to negligible with mitigation measures
- Loss of bat foraging habitat (terrestrial) – Negligible reducing to no impact with mitigation measures
- Loss of small mammal habitat – Minor adverse reducing to no impact with mitigation measures
- Loss of slow worm habitat – Moderate adverse reducing to no impact with mitigation measures
- Loss of wintering bird foraging habitat - Minor adverse reducing to no impact with mitigation measures
- Loss of breeding bird habitat - Minor adverse reducing to negligible with mitigation measures
- Reduction in scaly cricket population - Major adverse reducing to moderate adverse with mitigation measures

Summary of Impacts

Construction

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

Operation

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 Damage to a heritage asset offset by its preservation asset via protection from sea-level rise	Major Positive
Natural Capital	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