

Intended for

Falmouth Docks and Engineering Company

Date

February 2025

FALMOUTH DOCKS DEVELOPMENT

VOLUME 1:

MAIN ENVIRONMENTAL STATEMENT



Bright ideas.
Sustainable change.



Falmouth Docks Development

Volume 1: Main Environmental Statement

Project name	Falmouth Docks Development
Project no.	1620015743
Recipient	Falmouth Docks and Engineering Company
Document type	Report
Version	1.0
Date	February 2025
Prepared by	Various
Checked by	JT
Approved by	RH
Description	For Consent

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Volume 1: Main Environmental Statement

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Acronyms

AADT	Annual Average Daily Traffic
ADMS	Air Dispersion Modelling System
AHU	Air Handling Units
ALS	Abstraction Licensing Strategy
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
AQAP	Air Quality Action Plan
AQDMP	Air Quality Dust Management Plan
AQMA	Air Quality Management Area
ASR	Air Quality Annual Status Report
AURN	Automatic Urban and Rural Network
BCT	Bat Conservation Trust
BEMS	Building Energy and Monitoring System
BGS	British Geological Survey
BHD	Backhoe Dredger
BMS	Building Management System
BNG	Biodiversity Net Gain
BNL	Basic Noise Level
BPEO	Best Practicable Environmental Option
BPM	Best Practical Means
BRE	Building Research Establishment
BREEAM	Building Research Establishment Environmental Assessment Method
BS	British Standard
CA	Conservation Area
CAL	Chemical Action Level
CAMS	Catchment Abstraction Management Strategy
CC	Cornwall Council
CCA	Civil Aviation Authority
CCR	Climate Change Resilience

CD	Chart Datum
CDM	Construction Design and Management
Cefas	Centre for Environment Fisheries and Aquaculture Science
CEMP	Construction Environmental Management Plan
CES	Circular Economy Statement
CFA	Continuous Flight Auger
CHS	Circular Hollow Section
CIEEM	Chartered Institute of Ecology and Environmental Management
CIFCA	Cornwall Inshore Fisheries and Conservation Authority
COLREGs	International Regulations for Preventing Collisions at Sea
CoCP	Code of Construction Practice
CO ₂ e	Carbon Dioxide Equivalent
CRTN	Calculation of Road Traffic Noise
CSM	Conceptual Site Management
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
DCIoS	Devon, Cornwall, and Isles of Scilly
DCLG	Department for Communities and Local Government
DCLP	Demolition and Construction Logistics Plan
DDV	Drop-Down Video
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMOY	Do Minimal Opening Year
DPD	Development Plan Document
DS	Drainage Strategy
DSMP	Delivery and Servicing Management Plan
DSOY	Do Something Opening Year
DT	Diffusion Tube
EA	Environmental Agency
ECA	Emissions Control Area

EcIA	Ecological Impact Assessment
ECMWF	European Centre for Medium Range Weather Forecasts
ECoW	Ecological Clerk of Works
eDNA	Environmental DNA
EEI	Energy Efficiency Index
EFT	Emissions Factor Toolkit
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EPA	Environmental Protection Act
EPD	Environmental Product Declaration
EPI	Environmental Performance Indicators
EPS	European Protected Species
EPSL	European Protected Species License
EPUK	Environmental Protection UK
ES	Environmental Statement
ESU	Environmental Strategy Unit
EV	Electric Vehicle
FRA	Flood Risk Assessment
FDEC	Falmouth Docks and Engineering Company
FHC	Falmouth Harbour Commissioners
FLOW	Floating Offshore Wind
FTE	Full Time Equivalent
FTU	Formazin Turbidity Unit
FWD	Flood Warnings Direct
FWMP	Flood Warming and Evacuation Plan
FWRA	Foundation Works Risk Assessment
GEA	Gross External Area
GGBS	Ground Granulated Blast Slag
GHG	Greenhouse Gas
GI	Ground Investigation

GIA	Gross Internal Area
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GPA	Good Practice Advice
GQRA	Generic Quantitative Risk Assessment
GVA	Gross Value Added
GW	Gigawatts
ha	Hectares
HAT	Highest Astronomical Tide
HAZID	Hazard Identification
HCA	Homes and Communities Agency
HDV	Heavy Duty Vehicle
HCA	Homes and Community Agency
HER	Historic Environment Records
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Assessment
HSE	Health and Safety Executive
HV	High Voltage
IDSR	International Dark Sky Reserve
IAQM	Institute of Air Quality Management
ICCI	In-Combination Climate Impacts
IEA Guidelines	The Guidelines for the Environmental Assessment of Road Traffic
IEMA	Institute of Environmental Management and Assessment
ILP	Institution of Lighting Professionals
ISO	International Organization for Standardization established 1947
KPI	Key Performance Indicators
ktCO ₂ e	Kilo Tonnes of Carbon Dioxide Equivalent
KV	Kilovolt
LAQM	Local Air Quality Management
LAT	Lowest Astronomical Tide
LCA	Landscape Character Area

LCA	Lifecycle Assessment/Analysis
LCALCS	Landscape Character Assessment Landscape Capacity Study
LCRM	Land Contamination Risk Management
LDV	Light Duty Vehicle
LEMP	Landscape Environment Management Plan
LEP	Local Enterprise Partnership
LIDAR	Light Detection and Ranging
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
LOAEL	Lowest Observed Adverse Effect Level
M&E	Mechanical and Electrical
MAGIC	Multi Agency Geographic Information for the Countryside
mAOD	Metres Above Ordnance Datum
MARPOL	International Convention for the Prevention of Pollution from Ships
MCA	Marine Character Area
MCMS	Marine Case Management System
MCZ	Marine Conservation Zone
MEI	Minimum Efficiency Index
MHCLG	Ministry of Housing, Communities and Local Government
MHWN	Mean High Water Neaps
MHWS	Mean High Water Springs
MLA	Marine Licence Application
MLWN	Mean Low Water Neaps
MLWS	Mean Low Water Springs
MMP	Materials Management Plan
MMO	Marine Management Organisation
MoD	Ministry of Defence
MPS	Marine Policy Statement
MSFD	Marine Strategy Framework Directive
MSL	Mean Sea Level

MSMP	Marine Safety Management Plan
NAQO	National Air Quality Objective
NCA	National Landscape Character Area
NCEI	National Centres for Environmental Information
NDP	Neighbourhood Development Plan
NE	Natural England
NERC	Natural Environment and Rural Communities
NHLE	National Heritage List for England
NMP	National Mapping Project
NNR	National Nature Reserve
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen oxides, generally considered to be nitric oxide and NO ₂
NOAA	National Oceanic and Atmospheric Administration
NOAEL	No Observed Adverse Effect Level
NPPF	National Planning Policy Framework
NRA	Navigation Risk Assessment
NSR	Noise Sensitive Receptor
NTS	Non-Technical Summary
NWS	North West Shelf
NZWLC	Net Zero Whole Life Carbon
(O)CEMP	(Outline) Construction Environmental Management Plan
OD	Ordnance Datum
ONS	Office for National Statistics
OSWMP	Outline Site Waste Management Plan
PAS	Publicly Available Standard
PCB	Polychlorinated Biphenyl
PEA	Preliminary Ecological Appraisal
PEM	Project Environmental Management / Manager
PM ₁₀ /PM _{2.5}	Small airborne particles less than 10/2.5 microns in aerodynamic diameter
PMoW	Precautionary Method of Working

PMSC	Port Marine Safety Code
PNAD	Planning Noise Advisory Document
PPG	Planning Practice Guidance
PV	Photovoltaic
PPV	Peak Particle Velocity
PRA	Contaminated Land Desk Study
PRoW	Public Right of Way
RCP	Representative Concentrations Pathways
RFA	Royal Fleet Auxiliary
RICS	Royal Institute of Chartered Surveyors
RIBA	Royal Institute of British Architects
RNLI	Royal National Lifeboat Institution
RPG	Registered Parks and Gardens
RTO	Regenerative Thermal Oxidiser
SAC	Special Area of Conservation
SDL	Strategic Development Location
SHA	Statutory Harbour Authority
SINC	Site of Importance for Nature Conservation
SNCI	Site of Nature Conservation Interest
SMP	Shoreline Management Plan
SO ₂	Sulphur Dioxide
SOAEL	Significant Observed Adverse Effect Level
SSSI	Site of Special Scientific Interest
SPA	Special Protection Area
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
SPZ	Source Protection Zone
SuDS	Sustainable Drainage
SWAN	Simulating Waves Nearshore
SWMP	Site Waste Management Plan

TA	Transport Assessment
TAG	Transport Analysis Guidance
TTRO	Temporary Traffic Regulation Order
UK	United Kingdom
UKCP18	United Kingdom Climate Projections 2018
UKHO	UK Hydrographic Office
UNFCCC	United Nations Framework Convention on Climate Change
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WCA	Wildlife and Countryside Act
WFD	Water Framework Directive
WLCA	Whole Life Carbon Assessment
WSI	Written Scheme of Investigation
WTG	Wind Turbine Generator
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

Glossary of Terms

A-weighting	The process of weighting the observed sound pressure level at each frequency band, to approximate the sensitivity of the human ear to sounds of different frequencies. A-weighted sound pressure levels are expressed as dB(A) or dB LAp
Ambient Sound Level	The total sound pressure level in a given position from all surrounding sources of noise, both near and far. Normally expressed as an equivalent continuous A-weighted sound pressure level, dB LAeq,T.
Attenuation	The weakening or reducing of the amplitude of a sound caused by absorption in the water and sediment, spreading of the sound.
Above Ordnance Datum (AOD)	Above ordnance datum (AOD) is a vertical measurement used by ordnance survey as the basis for deriving altitudes on maps, usually by comparison with the mean seal level.
Annual Average Daily Traffic (AADT)	The total number of vehicles annually (on Monday to Friday) divided by the total number of weekdays in this period.
Bandwidth	The difference between upper and lower band edge frequencies ($\Delta f = f_{up} - f_{low}$).

Baseline	A description of the current state of the environment without implementation of the project.
Basic Noise Level (BNL)	The Basic Noise Level is the road traffic noise at a reference distance of 10 m from the road edge, expressed in terms of the LA10 statistical level (18-hour or one-hour), and calculated according by Calculation of Road Traffic Noise (CRTN) based on the traffic flow.
Carbon	Carbon is used as shorthand to refer to the basket of six GHGs recognised under the Kyoto Protocol. GHGs are converted to carbon dioxide equivalents (CO2e) based on their global warming potential per unit as compared to one unit of carbon dioxide (CO2).
Carbon Dioxide (CO2)	Carbon dioxide (CO2) is a naturally occurring gas comprising 0.04% of the atmosphere. The burning of fossil fuels releases carbon dioxide fixed by plants many millions of years ago, and this has increased its concentration in the atmosphere by some 12% over the past century. It contributes about 60 per cent of the potential global warming effect of manmade emissions of GHGs.
Centre frequency	The geometric mean of the frequency band ($f_c = \sqrt{f_{low} * f_{up}}$).
Climate	The composite or generally prevailing weather conditions of a region, as temperature, air pressure, humidity, precipitation, sunshine, cloudiness, and winds, throughout the year, averaged over a series of years.
Climate Change Allowance	Climate change allowances are predictions of anticipated change for: • peak river flow • peak rainfall intensity • sea level rise • offshore wind speed and extreme wave height The Environment Agency has provided guidance on how to incorporate climate change allowances into flood risk assessments.
Climate Change Resilience (CCR) Assessment	An assessment to determine the sensitivity of receptors in relation to potential Climate Change effects.
Construction Environmental Management Plan (CEMP)	A Plan to outline measures to control and minimise the risk of adverse effects from construction activities.
Construction Logistics Plan	Manages the sustainable delivery of goods and materials.
Construction noise assessment	An assessment which involves comparison of the predicted level of noise from construction activity with the baseline ambient noise levels at nearby noise-sensitive receptors.
Construction vibration assessment	An assessment which involves comparison of the predicted level of vibration from particularly construction plant items with thresholds of perception and adverse comment at nearby vibration-sensitive receptors.

Daytime	Unless otherwise stated it is a 16hr period starting at 07:00 and running till 23:00
Decibel (dB)	The unit of measurement for sound pressure levels (and sound power levels). A logarithmic value quantifying the sound pressure at a specified position (or source sound power) relative to a reference sound pressure of 20 µPa (or to a reference sound power of 10-12 W).
dB re 1 µPa	The decibel scale used in underwater acoustics is referenced to 1 µPa (in air it is referenced to 20 µPa, the threshold of human hearing).
Diffusion Tube	A passive sampler used for collecting NO2 in the air.
Do-minimum	A hypothetical scenario used to provide a realistic comparison of the effects of the project. The do-minimum scenario includes and changes to the highways infrastructure that would occur even if the project does not go ahead, and any other developments in the surrounding area that would influence the movement of traffic and would occur independently of the project.
Do-something	A hypothetical scenario used to provide a realistic comparison of the effects of the project. The do-something scenario includes changes in traffic flows caused by the project as well as any other developments in the surrounding area that would influence the movement of traffic.
Dominant	The noise source or event are noted to be significantly 'louder' than all other noise sources.
EIA Regulations	EIA Regulations are from the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 and The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).
EIA Scoping Opinion	Requested in Regulation 15 (1) of the Environmental Impact Assessment (EIA) Regulations and Regulation 13(1) of The Marine Works EIA Regulations.
Emission Factor Toolkit	Utilises emission factors from the European Environment Agency COPERT 5 emission tool.
Façade	A sound monitoring position is a "façade" position when it includes a strong reflection from an adjacent building or structure. This corresponds with a position that is between 1 and 2 metres away from a reflecting building or structure.
Flood Risk Assessment (FRA)	An assessment of the likelihood of flooding in a particular area so that development needs and mitigation measures can be carefully considered.
Flood Zone	Flood Zone definitions are set out in the national Planning Policy Guidance (PPG): • Flood Zone 1 – land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%); • Flood Zone 2 – land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% –

	0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year; and Flood Zone 3 – land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
Free-field	A sound monitoring position is a “free-field” position when it is not affected by sound reflections from surrounding buildings and structures. This corresponds with a position at least 3.5 metres away from reflecting buildings or structures.
Frequency	The number of oscillations per second of a vibrating particle in a medium, measured in Hertz (Hz) or cycles per second.
Future Baseline Scenario	An outline of the likely evolution of the current state of the environment without implementation of the project.
Human Receptors	Construction workers and future residents of the proposed development.
In-combination Climate Change Impact (ICCI) assessment	Focuses on the potential for climate change to exacerbate the effects on receptors identified by other environmental disciplines.
L _{A10,T}	The A-weighted sound pressure level exceeded during 10% of the time interval, T. This is the standard index used within the UK to describe traffic noise.
L _{A10,18hr}	The arithmetic average of the A-weighted sound pressure levels exceeded for 10% of each hour, dB LA10,1hr, determined between the hours of 06:00 and 24:00. This is the standard index used within the UK to describe traffic noise over the daytime, as used within the Noise Insulation Regulations 1973.
L _{A90,T}	The A-weighted sound pressure level exceeded during 90% of the time interval, T. Typically used to quantify the background sound level at a specified position.
L _{Aeq,T}	The equivalent continuous A-weighted sound pressure level over a time interval, T. This is an energy-average sound pressure level over the specified time period.
L _{AFmax,T}	The maximum A-weight sound pressure level during a specified time interval, T. Measured with “fast” time-weighting (which approximates the time-response of the human ear).
L _{night}	The equivalent continuous sound level LAeq,8hr for the period 23:00 to 07:00 hours.
Local Air Quality Management Technical Guidance 2016	Provides advice as to where the national AQOs apply and support to local authorities in carrying out their duties under the Environment Act 1995 and subsequent regulations.
LOAEL	Lowest observed adverse effect level. Level above which adverse effects on health and quality of life can be detected.
NO2	Nitrogen dioxide. Typically generated by road traffic emissions (in the context of this ES).

Night-time	Unless otherwise stated it is a 8hr period starting at 23:00 and running till 07:00.
Noise	Unwanted or undesirable sounds observed by a listener.
Noise-sensitive receptor	Receptors which are potentially sensitive to noise. Examples include dwellings, hospitals, healthcare facilities, education facilities, community facilities, END quiet areas or potential END quiet areas, international and national or statutorily designated sites, public rights of way and cultural heritage assets.
Operational noise assessment	An assessment to determine the operational noise impacts and effects of a project.
Octave band	A frequency band used in acoustical measurements. An octave is a frequency interval between two sounds where the frequency of the lower sound is half the frequency of the upper sound. The human hearing range is divided into ten logarithmically equal frequency divisions called octave bands, with centre-band frequencies of 16 Hz, 32 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, 16000 Hz.
Peak Particle Velocity (PPV)	The PPV corresponds to the maximum ground movement velocity and is measured in mm/sec. It gives value and associated direction for the three-dimensional axes.
Peak-to-peak	The amplitude of the sound pressure wave measured from the minimum to maximum values (i.e. negative peak to positive peak). This pressure value is double the zero-to-peak pressure or 6 dB greater than SPL _{peak} .
Peak SPL (SPL _{peak})	The peak sound pressure level based on the zero to peak-pressure.
Permanent threshold shift (PTS)	A permanent increase in the threshold at which a species can detect sound, often described as ‘deafness.’
Power Spectral Density (PSD)	PSD the spectral density of the wave, when multiplied by an appropriate factor, will give the power carried by the wave, per unit frequency, known as the power spectral density (PSD) of the signal. Power spectral density is commonly expressed in watts per hertz (W/Hz).
PM10	Dust and particle matter with an aerodynamic diameter of less than 10 X. Typically generated during demolition and construction activities, and by road emissions (in the context of this ES).
PM 2.5	Particulate matter with an aerodynamic diameter pf less than 2.5 X. Typically generated by road traffic emissions (in the context of this ES).
Range-dependent Acoustic Model (RAM)	A model used to predict sound levels with distance from source taking into account bathymetry changes with range.
Rating Level (Lar, Tr)	The rating level is defined as the equivalent continuous A-weighted sound pressure level produced by the specific sound source over a given time interval.
Received Level (RL)	The sound pressure level (SPL) received by a species for a given frequency and source level. Given as RMS dB re 1µPa.

Reflection	Sound waves may be reflected from a number of surfaces. Reflections from the seabed/sea surface are included in the model. Reflections from vertical structures may also occur, but are less important in terms of impact radius and are not included in the model.
Refraction	The process by which sounds waves curve as they pass through mediums of differing densities. This is most obvious where they pass from water to sediment/air, but also occurs due to continuous density changes within the water column (e.g. with depth, temperature and salinity).
Representative Concentration Pathways (RCP)	A greenhouse gas concentration trajectory adopted by the IPCC. Each pathway results in a different range of global mean temperature increases over the 21 st century.
Residual sound level	The equivalent continuous A-weighted sound pressure level of the ambient sound remaining at a specified position when the specific sound source (the sound source being assessed) does not contribute to the ambient sound.
Root Mean Square (RMS)	RMS of a time-varying quantity is obtained by squaring the amplitude at each instant, obtaining the average of the squared values over the interval of interest, and then taking the square root of this average. For a sine wave, multiplying the RMS value by the square root of 2 (1.414) gives the peak value of the wave. The RMS value, also called the effective value of the sound pressure, is the best measure of ordinary continuous sound.
Site Waste Management Plan (SWMP)	Site Waste Management Plans (SWMP) encourage the effective management of materials and ensure waste is considered at all stages of a project – from design through to completion. Although no longer a regulatory requirement in England, SWMPs are still considered to be good practice.
Sound Exposure Level (SEL)	A measure of sound energy over a discrete time interval (usually a single pulse) by integrating the pressure over that interval. For pulses it should account for 90% of the energy within the pulse. If summed over numerous pulses (e.g. during pile driving), the metric is usually referred to as cumulative SEL (SEL _{cum}).
Sound Pressure Level (SPL)	The pressure of sound for a given frequency. For the purposes of this report, SPL is presented as an RMS value unless stated otherwise.
Source level (SL)	Source levels for underwater sound are usually quoted as the source level 1 m from the sound source, however this is not usually possible for pile driving due to the size of the source. Measuring the received level at a distance from the source and estimating the transmission loss over that distance can be used to calculate source level at 1 m, but only if measurements are available.
SOAEL	Significant observed adverse effect level. Level above which significant adverse effects on health and quality of life occur.

Special Protected Area (SPA)/ Special Area of Conservation (SAC)/ Site of Special Scientific Interest (SSSI)	A site protected under EU or UK wildlife legislation.
Temporary threshold shift (TTS)	A temporary increase in the threshold at which sound can be detected by a species i.e. a decrease in their sensitivity to sound. The period this lasts depends on the exposure of the individual to the sound.
Third-octave bands	Series of adjacent frequency bands that are one third of an octave wide.
Transmission Loss (TL)	The loss of sound pressure due to geometric spreading and attenuation with distance from a sound source.
UK Climate Projections (UKCP)	The UK Climate Projections (UKCP) provides future climate projections for land and marine regions as well as observed (past) climate data for the UK.
Vibration	Vibration is an oscillatory motion of a particle away around the equilibrium position. The magnitude of vibration can be defined in terms of displacement (how far from the equilibrium position that something moves), velocity (how fast something moves), or acceleration (the rate of change of velocity).
Zero-to-peak pressure	The peak pressure measured from zero to peak amplitude.