

Construction of Low Voltage Cabinets and associated cabling

Grassed Area, Land to North of Elizabeth Gardens

West Street, Gravesend

Flood Risk Assessment

February 2026

1. Introduction

This application seeks full planning permission for the construction of Low Voltage Cabinets and associated cabling at this location, situated at the northern end of Elizabeth Gardens, West Street in Gravesend, on an existing grassed area:

The Port of London Authority (PLA) is a Statutory Harbour Authority for the Tidal Thames, acting as custodians for the river across 95 miles from Teddington in West London into the Thames Estuary. The PLA works to keep commercial and leisure users safe, protect and enhance the environment and promote the use of the river for trade and travel. The Port of London oversees 230,000 vessel movements handling over 53 million tonnes of cargo each year and is currently the largest Port in the UK. This application seeks full planning permission for the construction of Low Voltage Cabinets and associated cabling at this location.

The site is located within a Flood Risk Zone 3 area (Flood Risk Zone 3 Plan submitted separately).

2. The Proposed Works

The required infrastructure comprises 2no. Low Voltage (LV) Cabinets, (also referred to as Feeder Pillars) and other associated electrical equipment and cabling. The cabinets are galvanized mild steel with a height of 2,000mm, width of 2,850mm and a depth of 600mm.

The proposed development seeks to provide small-scale infrastructure which is required to facilitate a future shore power installation project at the site in association with the proposed new pier at West Street Pier. The need for this proposal is underpinned by the requirement to transition to net zero emissions. By providing adequate grid connected electrical power services marine operators using the pier in the future will be able to move away from burning diesel in generators (either onboard or temporary pier-side generators) to zero emissions at source electrical power. This infrastructure has the capacity to deliver net zero operations for the next thirty years.

To confirm as part of the proposals there will be no permanent staff based on site – the infrastructure will only be used for housing the required equipment and will only have staff on site when maintenance or checks are required. There will be no changes to existing boundary treatments as a result of the proposed development and the site will not be blocked off as a result of infrastructure installation.

The aim of the development is to shift towards low carbon energy. The implementation of Low Voltage Feeder Pillars and related electrical equipment will replace the usage of diesel-fed equipment.

In terms of flood risk vulnerability, the proposed development is considered to be water compatible.

Furthermore, to note the limit of excavation for the proposals will be 900mm over a very small area. The flood defence here is founded on sheet pile walls, applying loads far below the area of this proposal's excavation. This excavation therefore proposes no risk to the stability of the flood defences and should not be classed as a flood risk activity. In addition, angles of the tie bars on the river wall indicate that the tie rods are well below the proposed depth of excavation. Notwithstanding this prior to any works taking place the ground will be scanned with ground penetrating radar to confirm their location.

With regard to flood defence maintenance, it is considered that the proposed pillars are located far enough away from the wall to allow easy access to the flood wall for future inspection and maintenance purposes, the minor nature of the works should also be taken into consideration as part of this proposal.

3. Policy Context

3.1: National Planning Policy Framework

The National Planning Policy Framework (NPPF) was introduced on 27 March 2012. This document was last updated in February 2025; where paragraphs 170 to 182 inclusive establish the Planning Policy relating to planning and flood risk. The Technical Guide to the NPPF was superseded by the Planning Practice Guidance (PPG) in March 2014.

It states all plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – to avoid where possible, flood risk to people and property. They should do this and manage residual risk, by:

- a) applying the sequential test and then, if necessary, the exception test as set out below;
- b) safeguarding land from development that is required, or likely to be required, for current or future flood management;
- c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and
- d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations.

The Planning Practice Guidance (PPG) provides the methodology required to undertake the Sequential and Exception Tests.

3.2: Flood and Water Management Act (2010)

The Flood and Water Management Act places a duty on all flood risk management authorities to co-operate with each other. The act also provides lead local flood authorities and the Environment Agency with a power to request information required in connection with their flood risk management functions.

3.3: Gravesham Borough Council Local Plan (2014)

The Gravesham Local Plan Core Strategy sets out the vision, strategic objectives, and policies for development in Gravesham for the period 2014 to 2028.

The main concern in the Gravesham is the risk of tidal flooding from North Sea storm surges which would affect the River Thames. Most of the areas alongside the river have a high standard of protection by defences. However, a risk of flooding still exists in these areas because of the possibility of defence failure or over-topping during extreme events.

The Local Policy states, that The Thames Estuary 2100 (TE2100) project aims to develop a long-term tidal flood risk management plan for London and the Thames Estuary. The TE2100 Flood Risk Management Plan shows that there are unlikely to be major changes to the existing system of

defences over the plan period. However, it is likely that there will be changes in the longer term. The options include a new flood defence to the northeast of Gravesend and some of the options include a new Thames flood barrier, either at Long Reach, Dartford, or between Gravesend and Tilbury. This needs to be taken into account in the Council's approach.

Local Plan policy CS18 (Climate Change) is the most relevant to flooding and drainage. With regard to Flood Risk the policy states:

Flood Risk

With the exception of the previously developed sites along the Thames Riverside (see Policies CS03, CS04 and CS05) and those other regeneration sites which have already been evaluated in accordance with the sequential and exception tests at the application stage, development will be directed sequentially to those areas at least risk of flooding.

Proposals in areas at risk of flooding must be accompanied by a Flood Risk Assessment (in accordance with national policy and Environment Agency standing guidance as appropriate) and a Flood Risk Management Plan (if required) to demonstrate that they are adequately defended and safe over their lifetime. Planning permission will be refused for schemes which do not pass the sequential and exception tests.

The Council will prioritise the maintenance, improvement or replacement of flood defence infrastructure over other land uses where relevant. In addition to meeting their own flood defence and management needs, the Council will expect new development to take advantage of opportunities to reduce the causes and impacts of flooding from all sources where it is technically and financially feasible.

On Sustainable Drainage and Surface Water Run-Off policy CS18 states:

Sustainable Drainage and Surface Water Run-Off

The Council will seek to minimise the impact of drainage from new development on waste water systems. In particular, the Council will:

- Require that surface water run-off from all new development has, as a minimum, no greater adverse impact than the existing use; and*

- *Require the use of Sustainable Drainage Systems on all developments where technically and financially feasible.*

3.4 Flood Risk to Communities Gravesham, Kent County Council (2017)

This document has been prepared for the residents and businesses of the Gravesham Borough Council area. It provides information on the nature and magnitude of the flood risk across the district and outlines the existing and proposed approaches to manage the risk identified.

3.5 Strategic Flood Risk Assessment (SFRA) of Kent Thameside (2005) (updated 2009)

The SFRA's primary goals is to enable the two participating Borough Councils (Dartford and Gravesham) to undertake the PPG25 sequential test, and thereby directly inform the strategic planning of Kent Thameside through analysing the consequence of existing and proposed development in high flood risk areas.

The SFRA will also allow partners involved in the investment and delivery planning of future developments to gain a better understanding of the cost implications of flood risk management.

The study provides an analysis of the main sources of flood risk in Kent Thameside, together with a means of testing development allocations and existing planning policies for flood risk management. Mitigation options are also proposed.

The SFRA states that:

- The sequential approach to development in flood risk areas set out in PPG25 will be followed;
- Inappropriate development should not be allocated or permitted in zones 2 and 3 of the floodplain or areas with a history of groundwater flooding, or where it would increase flood risk elsewhere, unless there is over-riding need and absence of suitable alternatives;

- Where development is proposed for parts of zones 2 and 3, local authorities (in the case of plan allocations) and developers (in the case of specific proposals) with advice from the Environment Agency should undertake a Strategic Flood Risk Assessment (SFRA) to provide a comprehensive understanding of the flood risk and options for managing that risk in a cost effective manner. This should have regard to climate change and identify appropriate types of development and suitable mitigation and adaptation measures in scheme design and layout;
- Existing flood defences will be protected from development. Where development is permitted in appropriately defended floodplains it must be designed to be resilient to flooding (to minimise potential damage) and to allow for the future maintenance, realignment or management of the defences to be undertaken

The 2009 SFRA update consisted of updated in the following areas:

- Update the tidal breach modelling for six of the original tidal breaches with the latest sea-level rise data;
- Propose a scope and timeframe for further updating the SFRA.

The original SFRA analysed twelve defence breach locations, the SFRA Update reviewed only six of these. The SFRA has assessed the consequence of flood defence failure. The likelihood of the extreme tide events occurring is low (0.1% annual probability of occurrence), but as the original SFRA demonstrates, the consequences are very significant. The likelihood of defence failure is also low and when combined with the probability of the occurrence of the extreme tidal event, the likelihood of flooding is very low. Nonetheless, the consequence of a breach remains very high.

3.6 Kent and Medway Structure Plan 2006 mapping out the future (2006)

Policy NR9 of the structure plan refers to Development and Flood Risk. It states:

Development will be planned to avoid the risk of flooding and will not be permitted:

- *if it would be subject to an unacceptable risk of flooding or where it would increase the risk of flooding elsewhere;*
- *Where it would prejudice the capacity and integrity of flood plains or planned flood protection or coastal defence measures;*
- *it will hinder the implementation of future flood protection or coastal defence measures;*
- *if it would adversely affect the ability of the land to drain. Where development is necessary in areas at risk of flooding it should be designed and controlled to mitigate the impact of flood risk.*

Local Development Documents will include policies to:

- a) *ensure that a risk based sequential approach, reflecting degrees of flood risk, is adopted in guiding specified categories of development away from flood risk areas;*
- b) *secure the provision and maintenance of appropriate drainage systems in new developments to mitigate flood risk;*
- c) *ensure that proposals for development are accompanied by flood risk assessments appropriate to the scale and nature of the development and the risk.*

Policy NR10 of the structure plan specifically refers to flood protection, stating that the development of new or replacement flood protection or coastal defence measures that are in accordance with a Catchment Management Plan, Shoreline Management Plans or Coastal Defence Strategies will be supported. Where these are required to service a development their provision and maintenance should be funded as part of that development.

3.7 EA Flood Zone 3:

The proposed development site is located within Flood Risk Zone 3 area (Flood Risk Zone 3 Plan submitted separately). The proposed infrastructure is minor in size and it is considered that the proposed development will not increase the risk of flooding at the site or surrounding area. It is therefore considered that proposed structure will not impact on the wellbeing and safety of users within the site area.

Sequential Test:

The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.

The development comprises the installation of various pieces of infrastructure within close proximity of the location of West Street Pier in Gravesham. In terms of flood risk vulnerability, the proposed development proposals are considered to be water compatible. As a result, the Sequential Test is not required.

Exception Test:

In terms of flood risk vulnerability, the proposed development proposals are considered to be water compatible. In line with Table 2 of the Planning Practice the Exception Test and table 5-1 (Flood risk vulnerability and Flood Zone Incompatibility) is therefore not required.

3.8 Other considerations:

- Surface water: The Environment Agency's Risk of Flooding from Surface Water map indicates that most of the site is categorized as having a 'low' risk of surface water flooding.
- Groundwater SFRA: According to Kent Thameside SFRA, the site falls outside of the groundwater risk zone and as such, the ground risk is considered low.

- Sewer flooding SFRA: The Kent Thameside SFRA, does not provide any sewer flooding data close to the site and as such, the sewer flooding is considered low.
- Reservoir: The site is shown to be outside of the extent of flooding from reservoirs and as such, the risk is considered low.

4. Conclusions

The entire site is located within Flood Zone 3, defined as having a high risk of flooding associated with the tidally influenced River Thames. The predominant risk of flooding at the site is tidal.

Although the site is located within Flood Zone 3, the Sequential and Exception Tests are not required and in terms of flood risk vulnerability, the proposed development proposals are considered to be water compatible and meet the requirements in terms NPPF and its practice guidance.

The site is also in an area benefitting from flood defences located along the River Thames to the north of the site. These defences are known as the River Thames Tidal Defences (RTTD). The standard of protection is provided up to the 1 in 1000 year level. Therefore, at the south side of the site there is at residual risk of flooding in the event these defences are breached or overtopped.

Due to the source of flooding (Tidal Flooding), the size of the development infrastructure, which will flood, will not result in an increase in flood risk. Other sources of flooding for the area south of the River Thames flood defence wall are low.

Therefore, it is considered that this FRA demonstrates that the proposals are consistent with the aims of NPPF, its planning practice guidance and the Gravesham Local Plan, and the proposed development will not increase flood risk.

5. Sustainable Drainage Statement

DEFRA's Non-statutory technical guidance for Sustainable Drainage Systems have been used to determine the appropriate SuDS Strategy, which considers the spatial and environmental constraints of the Site. The development is to install infrastructure components within the site which will have a negligible effect on drainage. The proposed concrete base is very minor in size, and any water run off

will be onto the remaining grassed area. Based on the information provided it would be disproportionate to implement a sustainable drainage strategy for such a small area.