PORT OF TILBURY LONDON

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PROPOSED PORT TERMINAL AT FORMER TILBURY POWER STATION

TILBURY2

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SUSTAINABILITY STATEMENT

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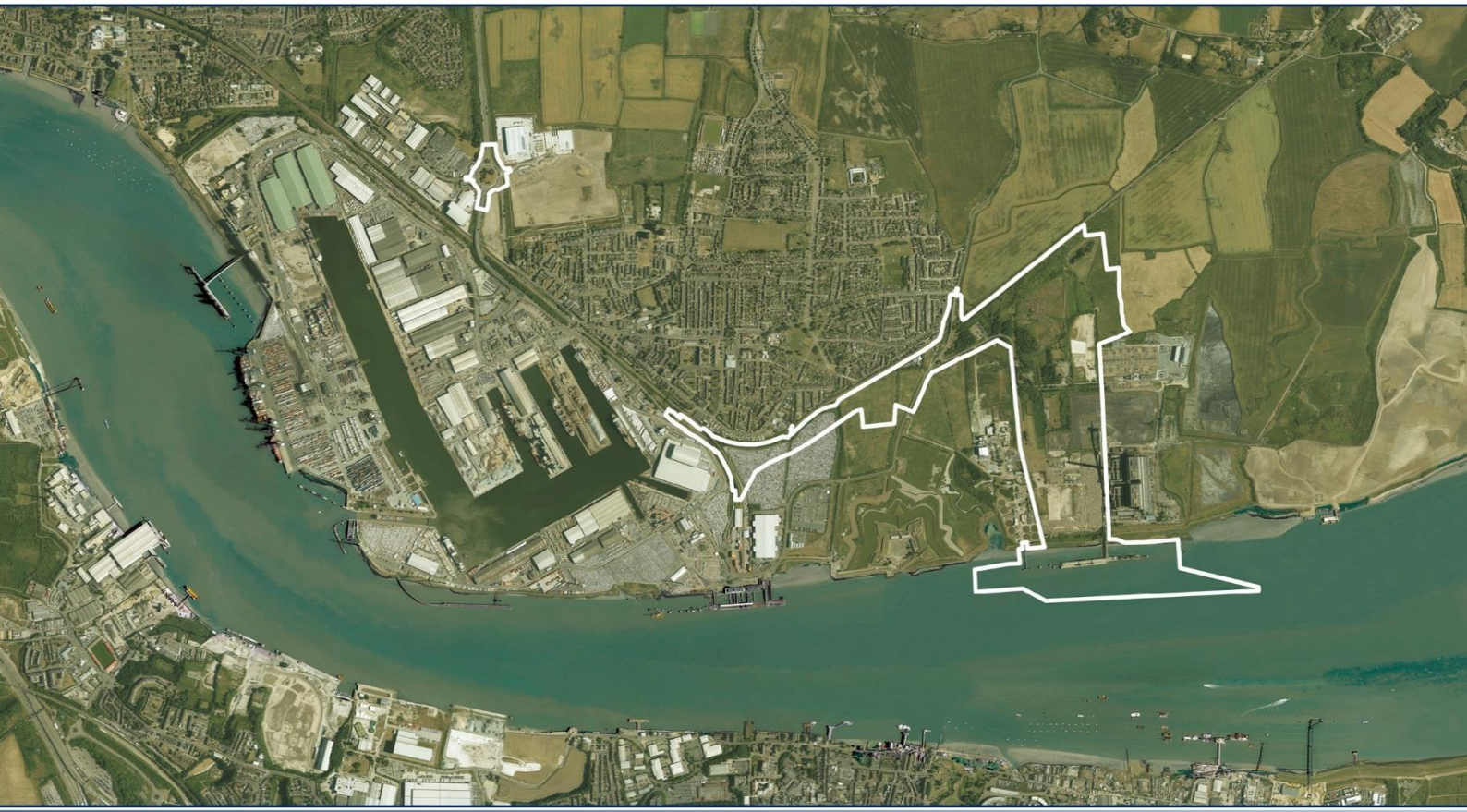

TILBURY2

PORT OF TILBURY

PROPOSED PORT TERMINAL AT FORMER TILBURY POWER STATION 'TILBURY2'

SUSTAINABILITY STATEMENT

CONTENTS

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LIST OF TABLES

1.0 EXECUTIVE SUMMARY

PURPOSE OF THE SUSTAINABILITY STATEMENT

1.1 This Sustainability Statement has been prepared as part of the application by Port of Tilbury London Limited (PoTLL) for a Development Consent Order (DCO) for its proposed new port terminal project, referred to as "Tilbury2".

1.2 The overarching purpose of the Sustainability Statement is to comment on the potential sustainability performance of Tilbury2 in relation to nine sustainability themes. These sustainability themes have been derived from a review of relevant plans and policies and understanding of key sustainability objectives.

1.3 The Sustainability Statement presents a snapshot of the sustainability potential of the Tilbury2 proposals, reflecting the flexibility sought within the DCO application. It then also signposts particular aspects of future detailed design development activities where the framework has been established for PoTLL to translate the potential for positive sustainability outcomes into a sustainable development, by embedding sustainability considerations into decision making and project delivery.

OUTLINE OF THE APPROACH

1.4 The successful delivery of sustainable outcomes from Tilbury2 requires a balanced approach to considering social, environmental and economic impacts. Key sustainability objectives considered by PoTLL to be of relevance to the Tilbury2 proposals have been interpreted from a review of pertinent planning policy, with local context provided through particular consideration of the Thurrock Council ('TC') Core Strategy[1]:

- Supporting economic growth aspirations for Thurrock as the host authority for a major UK port and promoter of the economic and commercial function of the River Thames, including increased importation of aggregates.
- Delivering enhanced port throughput capacity that capitalises on opportunities for transmodal shift from road to shipping and rail; and promotes the use of less polluting freight vehicles.
- Ensuring that development contributes to wider demographic and regeneration priorities for the communities of Tilbury and its

[1] Thurrock Council (2015) Core Strategy and Policies for Management of Development, as amended

environs, encompassing an ageing population, below average educational attainment, perceptions of anti-social behaviour and pockets of high deprivation.

- Ensuring that development maintains and respects the setting of Tilbury Fort and enjoyment of the Fort by residents and visitors.
- Safeguarding continued and enhanced access to and enjoyment of existing amenity and open spaces, including along the riverfront, green belt and common land in and around the Tilbury2 site.
- Supporting Thurrock's 'greengrid' aspirations, seeking to ensure that connectivity between urban and rural areas is delivered such that green assets are multi-functional in use.
- Incorporating measures to address climate change within development proposals, including reduction of emissions, the use of renewable and low carbon technologies, passive design, recycling and waste minimisation, sustainable drainage (SuDS) techniques and avoiding increased vulnerability to climate change impacts.
- Promoting efficient use of land and material assets, including through prioritisation of the use of previously developed land, adherence to the waste management hierarchy and adoption of whole-site approaches to layout, design and access.

1.5 This Sustainability Statement focuses on nine sustainability themes of relevance to Tilbury2, which incorporate consideration of the contribution of the development to the key sustainability objectives above. These nine sustainability themes have been identified through a review of those commonly used in national and local planning policy. Thurrock Council has also been consulted regarding the scope of the Sustainability Statement, as the host local planning authority and a key stakeholder.

1.6 The nine sustainability themes are accompanied by a set of 'relevant considerations' that reflect specific issues discussed in the policies and plans that have been reviewed. These are included to ensure consistency in the identification of aspects of Tilbury2 that offer the potential for positive sustainability outcomes in the widest context.

1.7 The Sustainability Statement provides a commentary on elements of Tilbury2 that are considered relevant to sustainability, organised by taking each of the nine themes in turn. The commentary draws on key project information, inclusive of the findings of the Environmental Statement (ES) (Document 6.1) and other technical studies and plans that have informed the development of Tilbury2, such as the Outline Business Case (Document 7.1), the Equalities Impact Assessment (EqIA) (Document 6.6) and Carbon and Energy Report (Document

6.7). The commentary also considers measures that PoTLL intends to put in place to govern the way in which Tilbury2 is implemented and managed, such as a Construction Environmental Management Plan (CEMP) (Document 6.9) (including the Materials Management Plan (MMP), Construction Traffic Management Plan (CTMP) and Site Waste Management Plan (SWMP)), Landscape and Ecology Maintenance and Management Plan (LEMP) (Document 6.1, Appendix 10.P), Operational Management Plan (OMP) (Document 6.10), Framework Travel Plan (Document 6.1, Appendix 13.A) and Operational Community Engagement Plan (Document 5.7).

1.8 The Tilbury2 proposals incorporate flexibility within the bounds of the Environmental Impact Assessment (EIA) scope. The detailed design activities following any grant of a DCO will have considerable influence over the predicted sustainability performance of Tilbury2. Consequently, this Sustainability Statement provides a report on the 'potential' for sustainability outcomes, rather than a definitive assessment of predicted sustainability performance. This is supported by a look ahead to future stages of detailed design development for Tilbury2, where PoTLL's further consideration of the sustainability issues under each of the themes will be valuable in driving the detailed design towards realising the potential for positive sustainability outcomes. Inherent in this approach is the recognition that the pursuit of sustainable development is an iterative process that tracks design development over time.

1.9 The commentary informs the assignment of a colour code to each of the themes, as follows:

- Green: the majority of potential sustainability outcomes are positive
- Amber: potential for a range of positive and negative sustainability outcomes and/or uncertain sustainability outcomes based on available project information
- Red: the majority of potential sustainability outcomes are negative

1.10 Importantly, the assignment of the colour code reflects the elements already embedded in the Tilbury2 proposals. On this basis, where strategic decisions and embedded design measures offer confidence in the outcome, this drives the coding. However, where the prediction of the type of sustainability outcome is more heavily reliant on future project evolution and the definition of detailed design proposals, amber coding tends to be used. The coding is therefore intentionally simplistic as it is not possible to accurately predict magnitude, duration or significance of sustainability effects for all themes at this stage in design progression.

1.11 The Sustainability Statement commentary includes signposting to aspects of forthcoming detailed design development for Tilbury2. This identifies particular areas for each sustainability theme where realising the potential for positive sustainability outcomes may be most strongly influenced.

PRINCIPAL FINDINGS

1.12 The Sustainability Statement presents the commentary against each of the sustainability themes, by drawing on project information related to the relevant considerations. A summary of the colour coding assigned to each of the themes based on the Tilbury2 proposals is provided in the table below. The third column summarises the particular areas of future stages of design development that offer the greatest potential for positive sustainability outcomes to be realised – these are areas that PoTLL will take account of as the Tilbury2 proposals evolve.

Table 1.1: Summary of coding by sustainability theme

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
Climate Change Mitigation – Greenhouse Gas Emissions, Carbon and Energy	Positive	Catalysing effective transmodal shift from road to shipping and rail.
Efficient Resource Use and Waste Management	Positive	Development of detailed proposals for the reuse of excavated and dredged materials. Development of detailed measures for waste management, as required by the Operational Management Plan (Document 6.10).
Green Infrastructure and Biodiversity	Range of positive and negative outcomes	Development of the LEMP (Document 6.1, Appendix 10.P). Effective application of on-

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		site compensatory measures and implementation of off-site compensatory measures required by the DCO for ecology and biodiversity, linked to the loss of local wildlife sites and priority habitats. Effective application of Drainage Strategy.
Water Resource Management and Flood Risk	Positive	Effective application of proposed mitigation measures for water resources as set out in the Drainage Strategy, CEMP (Document 6.9) and OMP (Document 6.10). Detailed specification of construction activities in accordance with the CEMP (Document 6.9).
Landscape and Visual	Range of positive and negative outcomes	Implementation of the LEMP (Document 6.1, Appendix 10.P), to ensure screening of Tilbury2 from views of Tilbury Fort; and screening to the infrastructure corridor. Surfacing of key buildings and structures to be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council, as secured by a DCO requirement. Detailed proposals for artificial lighting to be

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council, as secured by a DCO requirement.
Economy	Positive	Successful attraction and retention of additional and expanding port-related businesses, to deliver diversification. Catalysing effective growth in the throughput of goods at the expanded port, to maximise efficient use of new capacity. Successful delivery and take-up for skills and training opportunities, through the Skills and Employment Strategy to be secured through a section 106 agreement with Thurrock Council. Ongoing success in supporting workplace diversification measures.
Social and Community Infrastructure and Cohesion.	Range of positive and negative outcomes	Successful delivery and take-up for skills and training opportunities through the Skills and Employment Strategy to be secured through a section 106 agreement with Thurrock Council. Realising good representation of local people within the construction and operational

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		workforces. Detailed design for connecting new infrastructure to established PRoW and local networks, to avoid severance and enhance driver amenity through the Active Travel Study secured through its inclusion in the DCO or the section 106 agreement with Thurrock Council. Effective translation of the framework of controls within the CEMP (Document 6.9) through to contractor activities.
Cultural Heritage	Range of positive and negative outcomes	Effective adherence to archaeological protocols in accordance with the CEMP (Document 6.9). Surfacing of key buildings and structures to be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council, secured through the DCO. Effective establishment and maturing of structural screen planting within and on the perimeter of the Tilbury2 site through the implementation of the LEMP, secured through the DCO.
Transport and Access	Positive	Detailed proposals and measures to be delivered

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		through the Framework Travel Plan (Document 6.1, Appendix 13.A), secured through the DCO. Effective implementation of the Sustainable Distribution Plan (Document 6.1, Appendix 13.B), supported by relevant local stakeholders, secured through the DCO.

1.13 None of the sustainability themes are identified as having a majority of potential negative sustainability outcomes.

Potential positive sustainability outcomes

1.14 The majority of potential sustainability outcomes for the Tilbury2 proposals are coded as positive for five of the nine sustainability themes. This coding is based largely on strategic decisions that underpin the Outline Business Case for Tilbury2, as well as commitments to following established best practice within the frameworks of the CEMP (Document 6.9) and OMP (Document 6.10). The process of detailed design development also offers opportunities for further positive sustainability outcomes to be realised. These themes are listed here.

- Climate change mitigation – greenhouse gas emissions, carbon and energy.
- Efficient resource use and waste management.
- Water resource management and flood risk.
- Economy.
- Transport and access.

Variable or uncertain sustainability outcomes

1.15 Four of the sustainability themes are identified as having the potential for a range of positive and negative outcomes. This coding is based largely on the inherent flexibility that exists in the Tilbury2 proposals and the process of detailed design development offers opportunities

for a greater balance of positive sustainability outcomes to be realised. These themes are listed here.

- Green infrastructure and biodiversity.
- Landscape and visual.
- Social and community infrastructure and cohesion.
- Cultural heritage.

2.0 INTRODUCTION

2.1 This document is the Sustainability Statement for the Port of Tilbury London Limited (PoTLL) application for a Development Consent Order (DCO) for its proposed new port terminal project, referred to as "Tilbury2".

2.2 The commentary on the potential sustainability performance of Tilbury2 draws on key project information, inclusive of the findings of the Environmental Statement (ES) (Document 6.1) and other technical studies and plans that have informed the development of Tilbury2, such as the transport assessment (TA), Equalities Impact Assessment (EqIA) and Health Impact Assessment (HIA) and should therefore be read in conjunction with these technical assessments.

2.3 The commentary also considers measures that PoTLL intends to put in place to govern the way in which Tilbury2 is implemented and managed. These include a Construction Environmental Management Plan (CEMP) (Document 6.9) (including the Materials Management Plan (MMP), Construction Traffic Management Plan (CTMP) and Site Waste Management Plan (SWMP)), Landscape and Ecology Maintenance and Management Plan (LEMP) (Document 6.1, Appendix 10.P), Operational Management Plan (OMP) (Document 6.10), Framework Travel Plan (Document 6.1, Appendix 13.A) and Operational Community Engagement Plan (Document 5.7). Cross-references are included to sign-post the reader to where further detail of information can be found.

2.4 This chapter contains the following:

- the drivers for the production of this document;
- the purpose of this document;
- the structure of this document; and
- an overview of Tilbury2.

DRIVERS FOR THE SUSTAINABILITY STATEMENT

2.5 The concept of sustainable development is central to the planning system[2]. The term 'sustainable development' has been used since 1987 following the publication of the World Commission on Environment and Development (WCED) report 'Our Common Future',

[2] Department for Environment Food and Rural Affairs. 2005. Securing the Future – The UK Government Sustainable Development Strategy. London: TSO.

often referred to as the Brundtland Report[3]. It called for a strategy that united development and the environment - described by the now common term, 'sustainable development'.

2.6 The term 'sustainable development' has evolved in UK development parlance such that it not only refers to the impact of development on the environment, but also to society and the economy. In order for a development to be sustainable it should take a long-term view and aim to result in positive outcomes for the environment, society and the economy. The starting point for fostering sustainable development is therefore encouraging the avoidance of adverse effects and, ideally, promoting a positive impact on all three aspects.

2.7 The pursuit of sustainable development is a key driving force in UK planning policy. At the strategic level, the National Policy Statement for Ports (NPS) recognises the role of the planning system in ensuring that development consent decisions respect the principles of sustainable development; and states that *'given the importance which the Planning Act 2008 places on good design and sustainability, the decision-maker needs to be satisfied that port infrastructure developments are sustainably designed and, having regard to regulatory and other constraints, are as attractive, durable and adaptable (including taking account of natural hazards such as flooding) as they can be'*[4]. The NPS also indicates that applicants should take account of functionality and aesthetics and, in acknowledging limited choices in physical appearance of some port infrastructure, notes that opportunities may exist for applicants to demonstrate good design in the context of existing landscape character, landform and vegetation. The NPS therefore provides a high-level identification of relevant sustainability matters for Ports on UK shores, deferring to developers to provide evidence of sustainability at the project-level within their DCO submissions.

2.8 The precedent for the inclusion of a Sustainability Statement within DCO submissions has been set by, for example, Hinkley Point C[5] and Thames Tideway Tunnel[6]. These documents are used to report on the contribution that developments are predicted to make to delivering sustainable development.

2.9 There is no specific guidance on preparing a sustainability statement for nationally significant infrastructure projects (NSIPs) in the UK at

[3] World Commission on Environment and Development (WCED). 1987. Our Common Future. WCED.
[4] National Policy Statement for Ports. Para. 4.10.3
[5] Hinkley Point C Development Consent Order Application. 2013. Hinkley Point C Sustainability Statement. EDF Energy
[6] Thames Water Utilities Ltd. 2013. Thames Tideway Tunnel Sustainability Statement. Thames Water Utilities Ltd.

the project-specific level. Furthermore, neither the Planning Inspectorate nor Thurrock Council, as host authority for Tilbury2, has published prescriptive requirements for the preparation of sustainability statements (or similar) to be submitted in support of applications for DCO or planning applications, respectively. PoTLL has therefore engaged directly with Thurrock Council to discuss expectations regarding the scope of this Sustainability Statement (see Chapter 3).

PURPOSE

2.10 This Sustainability Statement has the following key objectives:

- describe the approach taken by PoTLL in preparing this Sustainability Statement, including the derivation of nine sustainability themes and corresponding relevant considerations;
- comment on the potential sustainability performance of the Tilbury2 proposals in relation to the nine sustainability themes; considering the likely balance of potential positive and negative sustainability outcomes for each theme; and
- signposting the particular aspects of future detailed design development activities where the framework has been established in the Tilbury2 proposals for PoTLL to translate the potential for positive sustainability outcomes into a sustainable development, by embedding sustainability considerations into decision making and project delivery.

STRUCTURE

2.11 The structure of this Sustainability Statement is as follows:

Table 2.1 Structure of the Sustainability Statement

Chapter	Content
1	Executive Summary - provides a summary of the context to Tilbury2, the work undertaken and the principal findings of the Sustainability Statement.
2	Introduction - provides the introduction, drivers, purpose and structure of the Sustainability Statement; and includes an outline of the Tilbury2 proposals.
3	Approach to preparing the Sustainability Statement – outlines the legislation, policy context and stakeholder engagement that has shaped PoTLL's approach; and introduces the themes that have been used to structure

Chapter	Content
	the Sustainability Statement
4	Sustainability Statement thematic commentary– provides a thematic narrative that identifies the aspects and measures incorporated into the Tilbury2 proposals that are relevant to achieving sustainable development
6	Conclusion - draws together the key findings, in the context of the key sustainability objectives interpreted from relevant planning policy

TILBURY2 PROJECT

2.12 PoTLL is proposing a new port terminal on the north bank of the River Thames at Tilbury, a short distance to the east of its existing Port. The proposed port terminal will be constructed on largely previously developed land that formed the western part of the now redundant Tilbury Power Station.

2.13 The project is known as “Tilbury2”. The proposed main uses on the site will be a Roll-on/Roll-off (“Ro-Ro”) terminal and a Construction Materials and Aggregates terminal (“the CMAT”), and associated infrastructure including rail and road facilities and revisions to the existing marine infrastructure. An 'infrastructure corridor' is proposed that will accommodate road and rail links to the existing rail and road network. The CMAT will include stockpiling of construction materials and some processing of aggregates for the production of asphalt and concrete products.

2.14 The proposals will require works including, but not limited to:

- creation of hard surfaced pavements;
- improvement of and extensions to the existing jetty including creation of a new Ro-Ro berth;
- associated dredging of berth pockets around the proposed and extended jetty and their approaches;
- new and improved conveyors;
- erection of ancillary buildings;
- erection of a single 10,200sq.m. warehouse;
- a number of storage and production structures associated with the CMAT;
- the construction of a new link road from Ferry Road to Fort Road; and

- formation of a rail spur and sidings.

2.15 The proposed volumes of import/export of Ro-Ro units for the terminal exceed the threshold of 250,000 units stated in the Planning Act 2008 for throughput per annum. The Tilbury2 project therefore constitutes a Nationally Significant Infrastructure Project (NSIP).

2.16 Document 2.2 provides the General Arrangement Plans for Tilbury2.

3.0 APPROACH TO PREPARING THE SUSTAINABILITY STATEMENT

3.1 This chapter outlines PoTLL's approach to the preparation of this Sustainability Statement. It outlines the relevant legislation and policy that has been used, in conjunction with stakeholder guidance, to identify appropriate sustainability themes. The sustainability themes and relevant considerations are introduced, which form the basis for structuring the Sustainability Statement commentary; and the categorisation of potential sustainability performance is described.

APPROACH

3.2 There is no statutory requirement for a sustainability appraisal or assessment to be completed to support the application for a DCO for Tilbury2. However, PoTLL regards the production of a Sustainability Statement as good practice for DCO submissions and an effective means of demonstrating due consideration to sustainable development within the project team.

3.3 This Sustainability Statement does not set out to evaluate the sustainability of Tilbury2 against other strategic alternatives. This exercise has already been undertaken by the government as part of the process of preparing the National Policy Statement for Ports.

3.4 Key sustainability objectives considered by PoTLL to be of relevance to the Tilbury2 proposals have been interpreted from a review of pertinent planning policy, with local context provided through particular consideration of the Thurrock Council ('TC') Core Strategy[7]:

- Supporting economic growth aspirations for Thurrock as the host authority for a major UK port and promoter of the economic and commercial function of the River Thames, including increased importation of aggregates.
- Delivering enhanced port throughput capacity that capitalises on opportunities for transmodal shift from road to shipping and rail; and promotes the use of less polluting freight vehicles.
- Ensuring that development contributes to wider demographic and regeneration priorities for the communities of Tilbury and its environs, encompassing an ageing population, below average educational attainment, perceptions of anti-social behaviour and pockets of high deprivation.

[7] Thurrock Council (2015) Core Strategy and Policies for Management of Development, as amended

- Ensuring that development maintains and respects the setting of Tilbury Fort and enjoyment of the Fort by residents and visitors
- Safeguarding continued and enhanced access to and enjoyment of existing amenity and open spaces, including along the riverfront, green belt and common land in and around the Tilbury2 site.
- Supporting Thurrock's 'greengrid' aspirations, seeking to ensure that connectivity between urban and rural areas is delivered such that green assets are multi-functional in use.
- Incorporating measures to address climate change within development proposals, including reduction of emissions, the use of renewable and low carbon technologies, passive design, recycling and waste minimisation, sustainable drainage (SuDS) techniques and avoiding increased vulnerability to climate change impacts.
- Promoting efficient use of land and material assets, including through prioritisation of the use of previously developed land, adherence to the waste management hierarchy and adoption of whole-site approaches to layout, design and access.

3.5 This Sustainability Statement provides a commentary on elements of Tilbury2 that are considered relevant to sustainability, set in the context of the sustainability objectives identified above. The commentary is provided in relation to the following nine themes[8].

- Climate Change Mitigation – Greenhouse Gas Emissions, Carbon and Energy.
- Efficient Resource Use and Waste Management.
- Green Infrastructure and Biodiversity.
- Water Resource Management and Flood Risk.
- Landscape and Visual.
- Economy.
- Social and Community Infrastructure and Cohesion.
- Cultural Heritage.
- Transport and Access.

3.6 It is important for the potential sustainability performance of Tilbury2 to be considered in the context of national, regional and local objectives along with strategic planning, transport, social, economic and environmental policies. This being the case, the sustainability themes listed above derive from a review of the relevant legislative

[8] The derivation of the sustainability themes is illustrated in Table 3.3.

and policy documents, which are listed in Tables 3.1 and 3.2. The Thurrock Council policies cited also reflect specific direction from Thurrock Council officers, through stakeholder engagement about the scope of this document, for the Sustainability Statement to illustrate how Tilbury2 may contribute to achieving policy objectives.

3.7 A review of all policies and plans applicable to Tilbury2 is provided in the Planning Statement[9].

Table 3.1 Legislation

Legislation	Summary of Requirements	Relevance to Tilbury2
Climate Change Act (2008)	The Climate Change Act 2008 introduces legislative targets for reducing the UK's impacts on climate change and the need to prepare for its impacts. The Act sets binding targets for a reduction in CO2 emissions of 80% by 2050 compared to a 1990 baseline. Interim targets for four carbon budget periods will be used to ensure progress towards this target. The Act also requires the production of a regular Climate Change Risk Assessment which would assess the risks to the UK from the impact of climate change (first produced in 2012). Increasing the number of low carbon energy supplies will support targets for reducing CO2 emissions.	The Scheme will generate carbon during construction and operation which will need to meet the targets set by the Climate Change Act.
Climate Change and Sustainable Energy Act (2006)	This Act enhances the contribution of the UK to combating climate change and securing a diverse and viable long-term energy supply by boosting the number of heat and electricity microgeneration installations in the United Kingdom.	The on-going design of the PoTLL expansion is seeking to maximise opportunities to reduce carbon emissions and improve energy efficiency as part of embedded mitigation measures and to mitigate residual impacts.

[9] Port of Tilbury London Limited, 2017. Tilbury2: Planning Statement.

Table 3.2 National, Regional and Local Policy

Policy	Summary of Requirements	Relevance to Tilbury2
National Planning Policy Framework	The National Planning Policy Framework (NPPF) was published on 27 March 2012 and sets out the Government's planning policies for England and how these are expected to be applied. The framework's primary objective is sustainable development, focussing on: planning for prosperity (Economic), planning for people (Social) and planning for places (Environmental). The NPPF states that sustainable development should support the transition to a low carbon future and help reduce greenhouse gas emissions and use of renewable resources.	The NPPF sets out the national framework for plan-making and decision-taking. This is one of the primary documents against which the development will be assessed to ensure it meets national policy objectives.
National Policy Statement for Ports 2012	The National Policy Statement for Ports encourages sustainable port development for long-term forecast growths in sea imports/exports, allows judgements as to the location of such development being made by the Port industry on the basis of commercial factors and ensures all developments meet legal, environment and social constraints/objectives. The policy statement considers potential environmental impacts in a range of environmental topic areas, and sets a number of tests that must be met by projects in relation to these areas. The guidance highlights issues that are particularly relevant to port facilities and should be assessed, including the impact on climate change.	This policy statement will be used to guide embedded sustainability and mitigation measures and establish sustainability objectives and requirements.

Policy	Summary of Requirements	Relevance to Tilbury2
Marine Policy Statement 2011	The Marine Policy Statement (MPS) was published in March 2011. It was prepared and adopted under the Marine and Coastal Access Act 2009. The UK Marine Policy Statement (MPS) provides the policy framework for the marine planning system and taking decisions affecting the marine environment. Public authorities taking authorisation or enforcement decisions, which affect or might affect the marine area, must do so in line with marine policy documents, such as the MPS and marine plans, unless relevant considerations indicate otherwise.	The MPS highlights the role of ports and shipping in the UK economy. Port development should be viewed in light of its contribution to the national, regional and local need for the infrastructure against expected adverse effects, including cumulative impacts.
Securing the Future – The UK Government Sustainable Development Strategy (2005)	The UK Government Sustainable Development Strategy 2005 (UKSDS) established five principles to be used to achieve sustainable development, agreed by the UK Government, Scottish Executive, Welsh Assembly Government (now Welsh Government) and the Northern Ireland Administration. The principles include: - Living within our environmental limits; - Ensuring a strong, healthy and just society; - Achieve a sustainable economy; - Promoting good governance; and - Using sound science responsibly. The document also sets out the following four priorities for UK action on sustainable development: - Sustainable consumption and production; - Climate change and energy; - Natural resource protection and	The Tilbury2 proposals will contribute to the shared priorities of climate change and energy by aiming to reduce its carbon emissions during construction and operation.

Policy	Summary of Requirements	Relevance to Tilbury2
	environmental enhancement; and - Sustainable communities.	
The UK Low Carbon Transition Plan (2009)	The UK Low Carbon Transition Plan sets out how the UK will become a low carbon country through measures such as cutting GHG emissions, maintaining secure energy supplies, maximising economic opportunities, and protecting consumers. The emission target is to reduce emission by 34% from 1990 levels (or an 18% cut on 2008 levels) by 2020. Part of the Plan for delivery by 2020 is for 40% of electricity to be from low carbon sources, including renewables, nuclear and clean coal, all collectively supporting the decarbonisation of the electricity grid.	The Tilbury2 proposals will contribute to the UK low carbon transition plan by reducing its GHG emissions during construction and operation.
The Carbon Plan: Delivering Our Low Carbon Future (2011)	The Carbon Plan sets out the Government's plans for achieving the emissions reductions commitment made in the Climate Change Act 2008. A pathway consistent with meeting the 2050 target is outlined. This publication brings together the Government's strategy to curb greenhouse gas emissions and deliver climate change targets.	The Tilbury2 proposals will seek to utilise guidance and best practice to ensure it aligns with the Government's strategy for a Low Carbon future.
Essex County Economic Plan for Essex (2014)	This Economic Plan for Essex articulates the challenges facing the Essex economy and the issues that need to be addressed to secure sustainable growth. It sets out the interventions and investments that partners propose to make with the necessary support from HM Government, supplemented with local resources, to help secure	The A13/127 – Thames Gateway South Essex (TGSE) Growth Corridor is seen as a key investment area, with a need to increase capacity on the A13 – the main route linking the Port

Policy	Summary of Requirements	Relevance to Tilbury2
	growth and a programme of co-investment that will support delivery.	of Tilbury and London.
South East Local Enterprise Partnership (LEP) Growth Deal and Strategic Economic Plan (2014)	The South East LEP Growth Deal with Government aims to bring almost £590.8m of investment to East Sussex, Essex, Kent, Medway, Southend and Thurrock. The Strategic Economic Plan sets out four key priority areas: - Enhancing Transport Connectivity - Increasing Business Support and Productivity - Raising Local Skill Levels - Supporting Housing and Development	The South East LEP identifies significant opportunities for growth in the transport and logistics sectors and the potential for job creation through port development at Tilbury. The Tilbury2 proposals support the Strategic Economic Plan across its priority areas.
Thurrock Local Development Framework (LDF): Core Strategy and Policies for Management of Development (2015)	The LDF is a strategic document that provides guidance on the scale and distribution of development and the provision of supporting infrastructure throughout Thurrock to 2026. The Strategic Policies set out in the Core Strategy relate to housing, employment, communities, transport, the natural and built environment, climate change, water, waste and minerals. The Core Strategy also contains the policies and standards for the Management of Development. These policies set out the criteria against which planning applications for the development and use of land and buildings will be considered to ensure that development occurs in the most appropriate location and form. Thurrock Council has been consulted on the scope of this Sustainability Statement, requesting particular consideration of the	Core themes in the strategy such as housing, employment and community and recreational facilities have been used to identify key receptors in impact assessment. The plan emphasises the changes Thurrock is undergoing from a socio-economic perspective and the proposals are a key driver in shaping the Borough's socio-economic characteristics and conditions. The carbon-related policies provide developers with a

Policy	Summary of Requirements	Relevance to Tilbury2
	carbon-related policies within the LDF. There are two Core Strategy thematic policies (CSTPs) that focus on carbon: - CSTP#25 Addressing Climate Change: The Council will require new and existing development and associated activities to adhere to local, regional and national targets for reducing carbon emissions. The Council has also set reduction of CO_2 targets for 2020 (5.8% for domestic sector, 6.5% for road transport and 11.3% for business) - CSTP#26 Renewable or Low-Carbon Energy Generation: the Council will encourage opportunities to generate energy from non-fossil fuel and low-carbon sources. The LDF also contains two policies for management of development (PMDs) that focus on carbon: - PMD#13 Decentralised, Renewable and Low-Carbon Energy Generation: new developments of 5 or more residential dwellings or 1,000 m^2 of non-residential floor space must secure specific proportions of their total energy requirements from decentralised and renewable or low-carbon sources. Requirements are 10% of energy in developments consented from 2010, 15% from 2015 and 20% from 2020. - PMD#14 Carbon Neutral Development: The Council requires developers to demonstrate that all viable	clear indication of those aspects of development that Thurrock Council considers particularly relevant to sustainability in the context of managing climate change impacts.

Policy	Summary of Requirements	Relevance to Tilbury2
	energy efficiency measures and renewable or low-carbon technology opportunities have been utilised to minimise emissions. Any development that would lead to a net increase in CO_2 emissions above existing emissions for the development site will be required to make contributions to the Thurrock Carbon Offset Fund.	
Thurrock Council Core Strategy Sustainability Appraisal	The Core Strategy Sustainability Appraisal (SA) informed the preparation of the Thurrock Local Development Framework (LDF): Core Strategy and Policies for Management of Development (2015). The SA scoping process (2013) resulted in the establishment of 16 SA objectives that informed the SA of each potential policy within the emerging Core Strategy. The 16 SA objectives related to the following themes: - Economic growth and diversity (SA Objectives 1, 2 and 3) - Sustainable patterns of development, particularly housing and employment (SA Objective 4) - Effective use of land and natural resources (SA Objectives 5 and 10) - Protection of biodiversity and geodiversity (SA Objective 6) - Reducing the emission of pollutants and generation of wastes (SA Objectives 7 and 16) - Protecting and enhancing landscape character, local distinctiveness and built heritage (SA Objective 8)	The SA framework of objectives provides context to this Sustainability Statement. The scope of the SA Objectives provides developers with clarity about those matters Thurrock Council considers to be of local relevance in defining sustainable forms of developments.

Policy	Summary of Requirements	Relevance to Tilbury2
	- Managing water resources (SA Objective 9) - Creating a fairer, more equal, healthier, safe and less deprived society (SA Objectives 11, 12, 14 and 15) - Meeting housing needs (SA Objective 13) - Reducing consumption of non-renewable energy sources (SA Objective 10)	
Thurrock Local Plan	Thurrock Council began work on a new Local Plan in February 2014. Once adopted, the Local Plan will set out the amount of and desired distribution of development sought in Thurrock borough, forming a comprehensive long-term planning framework. Thurrock Council is currently preparing a second Issues and Options consultation document, scheduled to be consulted upon in autumn 2017.	The development of detailed design proposals for Tilbury2 should be informed by consideration of the key issues and options of relevance and reasonably related to the proposed Port development. The potential for consistency with the Thurrock Local Plan Issues and Options document will depend on the timing of Thurrock Council consultation activities.
Thurrock Local Plan - Sustainability Appraisal Scoping Report (Draft) - Feb 2016	Thurrock Council published a draft SA Scoping Report in February 2016, to support the first stages of preparation of the Thurrock Local Plan (TC Local Plan SA Scoping Report). The Scoping Report sets out the proposed approach and methodology for conducting the SA and formed the basis for consultation with the statutory	The 20 themes within the SA Scoping Report for the Local Plan provides context to this Sustainability Statement. The scope of the themes provides developers with an indication of

Policy	Summary of Requirements	Relevance to Tilbury2
	environmental consultation bodies (namely the Environment Agency, Historic England and Natural England) and other interested parties in order to agree the scope for the SA, prior to the appraisal stage. The SA Scoping Report included 20 themes for the Local Plan to consider within the SA process, each associated with an aim and a number of assessment questions.	the matters that Thurrock Council considers will be of local relevance in defining sustainable forms of developments over the next 20 – 30 years.
Thurrock Council Infrastructure Prioritisation and Implementation	The Thurrock Infrastructure Prioritisation and Implementation Programme (IPIP) was published in 2010, and provides a summary of future infrastructure requirements. The IPIP sets out the baseline provision and capacity of existing physical and social infrastructure across the District. Population forecasts and infrastructure provision standards are used to determine future infrastructure requirements to ensure policy compliance, and that growth is sustainable.	The IPIP identifies an overall deficit in school places by 2025 in the Borough, and the need to accommodate sustainable population growth across Tilbury. The proposals' impacts on capacity for schools and other community facilities will be carefully considered as part of this assessment.

3.8 The common objectives and preferred outcomes apparent in the reviewed documents have been considered in conjunction with the key sustainability objectives identified for Tilbury2 and grouped to form the nine themes listed in Table 3.3. Where specific or detailed matters were apparent from the review of key issues, policies and plans, these are reflected in the corresponding 'relevant considerations' (see Table 3.3). The principal sources linked to each of the sustainability themes are also noted in Table 3.3.

Table 3.3 – Sustainability Themes and Relevant Considerations

Sustainability Theme	Relevant Considerations	Linked Source(s)
Climate Change Mitigation – Greenhouse Gas Emissions, Carbon and Energy	How have emissions been reduced, for example, through strategic decisions (e.g. siting; travel modes) and through efficient plant, services and buildings? What are the predicted contributions of Tilbury2 to greenhouse gas emissions and carbon? What measures have been assumed within the carbon footprint calculations? What commitments are made in respect of carbon monitoring and/or targets? What are the intentions for energy supply (e.g. are any renewable energy sources to be used)? Are low carbon technologies supported and if so, in what way? What measures have been incorporated and/or what intentions are there for delivering energy efficient design?	Climate Change Act (2008) Climate Change and Sustainable Energy Act (2006) NPPF NPS UKSDS UK Low Carbon Transition Plan The Carbon Plan LDF: CSTP25 (I, ii, iii and iv) PMD13 CSTP26 TC Local Plan SA Scoping Report
Efficient Resource Use and Waste Management	What are the plans for waste management? Are there intentions to specify the use of materials with high proportions of recycled content? What sort of efficiencies are likely to be achieved in terms of land use and materials use (e.g. use of previously developed land and assets, proposals for dredged materials, re-use of any construction and demolition materials and design of buildings/structures for	NPPF NPS UKSDS LDF: CSTP25 (I, ii, iii and iv) PMD13 CSTP26 TC Local Plan SA Scoping

Sustainability Theme	Relevant Considerations	Linked Source(s)
	deconstruction)?	Report
Green Infrastructure and Biodiversity	Does the site layout and landscaping reflect green infrastructure design principles (e.g. site boundaries/linear features to incorporate planting that will serve as functional wildlife networks; protection of integrity of riverfront habitats; sustainable drainage system (SuDS) techniques in all drainage design; support for walking and cycling networks; specific habitat creation)? Does the landscaping proposal deliver sensitivity to place (e.g. in landform, planting schemes, provision of green infrastructure networks within and around site to deliver habitat connectivity, protect water quality)? What are the implications for public rights of way (PRoW) and non-motorised user (NMU) access to and around the site, including riverfront access? How is this accommodated in the design, during construction and operation?	NPPF UKSDS LDF: CSTP25 (I, ii, iii and iv) PMD13 CSTP26 TC Local Plan SA Scoping Report
Water Resource Management and Flood Risk	Flood risk - has the development avoided the use of land at risk of flooding? If this is not possible (due to the nature of the development) then how has flood risk within the site been managed (e.g. avoiding siting buildings on areas at greatest risk of flooding; positioning building services above potential flood levels; securing safe evacuation routes and protocols for personnel evacuation; flood consequences assessment findings and recommendations adhered to)? How has the risk from flooding as a result of the development been managed? Are existing runoff rates maintained? Is there adequate flood storage within the site? Water quality - how is this protected, during both construction and operation (what is within the CEMP to control	NPPF NPS UKSDS LDF: CSTP25 (I, ii, iii and iv) PMD13 CSTP26 TC Local Plan SA Scoping Report

Sustainability Theme	Relevant Considerations	Linked Source(s)
	activities and manage potential pollution risks; sediment run off)? Water resources - what measures are proposed to ensure water efficiency and conservation, both during construction and operation (process water and general personnel-related consumption)?	
Landscape and Visual Impacts	What does the ES identify as the principal landscape and visual impact receptors and potential environmental impacts arising from the Project? And how have these been considered in the Project (what are the key types of mitigation)? What controls are in place, or proposed to manage landscape and visual effects during construction? How has the design and layout of the development take account of key landscape and visual receptors, both during construction and operation?	NPPF NPS UKSDS LDF: CSTP26 TC Local Plan SA Scoping Report
Economy	What contribution will be made to the economy, in terms of job creation (direct and indirect), scale of investment and gross value added (GVA)? How will the expansion of the port contribute to regional economic growth priorities, including regeneration priorities, expansion of the existing supply chain and the ability to catalyse foreign investment and trade? What commitments are made to supporting local job creation, for example through local education and training initiatives? How are construction effects expected to be managed, including on existing residents and visitors?	NPPF NPS MPS UKSDS Economic Plan for Essex South East LEP Growth Deal LDF: CSTP26 TC Local Plan SA Scoping Report
Social and Community	What does the Equality Impact Assessment identify as the principal	NPPF UKSDS

Sustainability Theme	Relevant Considerations	Linked Source(s)
Infrastructure and Cohesion	effects of Tilbury2 on existing communities and social networks? What sort of measures are included to manage potential adverse effects? What does the Health Impact Assessment identify as the principal effects of Tilbury2 on health and well-being? What sort of measures are cited within the assessment as influential on health and well-being? What measures are proposed to manage potential community effects such as reduced amenity and general disturbance, particularly during construction? How with PoTLL manage worker conduct, general construction and the operation of Tilbury2, in order to safeguard community cohesion?	Economic Plan for Essex South East LEP Growth Deal LDF: CSTP26 TC Local Plan SA Scoping Report
Cultural Heritage	What does the ES identify as the principal cultural heritage receptors and potential environmental impacts arising from the Project? And how have these been considered in the Project (what are the key types of mitigation)? What controls are in place, or proposed to manage effects on cultural heritage assets? How has the design and layout of the development take account of Tilbury Fort, both during construction and operation?	NPPF UKSDS LDF: CSTP26 TC Local Plan SA Scoping Report
Transport and Access	What are the transport arrangements for construction, including the use of sea and/or rail transport for the delivery of construction materials; and travel planning for construction workers? What are the transport arrangements for operation, for example, projected modal split for HGV onward vs rail onward transport; and travel panning for both the workforce and hauliers?	NPPF NPS MPS UKSDS Economic Plan for Essex South East LEP Growth

Sustainability Theme	Relevant Considerations	Linked Source(s)
	How are walking and cycling accommodated both for active travel (commuting) and leisure (for broader public/visitor benefit). What are public rights of way (PRoW) arrangements during construction and operation?	Deal LDF: PMD12 TC Local Plan SA Scoping Report

3.9 The commentary draws on key project information, inclusive of the findings of the ES (Document 6.1) and other technical studies and plans that have informed the development of Tilbury2, such as the Outline Business Case (Document 7.1), the EqIA (Document 6.6) and Carbon and Energy Report (Document 6.7). The commentary also considers measures that PoTLL intends to put in place to govern the way in which Tilbury2 is implemented and managed, such as a CEMP (Document 6.9) (including the MMP, CTMP and SWMP), LEMP (Document 6.1, Appendix 10.P), OMP (Document 6.10), Framework Travel Plan (Document 6.1, Appendix 13.A) and Operational Community Engagement Plan (Document 5.7).

3.10 The Tilbury2 proposals incorporate flexibility within the bounds of the Environmental Impact Assessment (EIA) scope. The detailed design activities following any grant of a DCO will have considerable influence over the predicted sustainability performance of Tilbury2. Consequently, this Sustainability Statement provides a report on the 'potential' for sustainability outcomes, rather than a definitive assessment of predicted sustainability performance. This is supported by a look ahead to future stages of detailed design development for Tilbury2, where PoTLL's further consideration of the sustainability issues under each of the themes will be valuable in driving the detailed design towards realising the potential for positive sustainability outcomes. Inherent in this approach is the recognition that the pursuit of sustainable development is an iterative process that tracks design development over time.

3.11 The commentary informs the assignment of a colour code to each of the themes, as follows:

- Green: the majority of potential sustainability outcomes are positive
- Amber: potential for a range of positive and negative sustainability outcomes and/or uncertain sustainability outcomes based on available project information

- Red: the majority of potential sustainability outcomes are negative

3.12 Importantly, the assignment of the colour code reflects the elements already embedded in the Tilbury2 proposals. On this basis, where strategic decisions and embedded design measures offer confidence in the outcome, this drives the coding. However, where the prediction of the type of sustainability outcome is more heavily reliant on future project evolution and the definition of detailed design proposals, amber coding tends to be used. The coding is therefore intentionally simplistic as it is not possible to accurately predict magnitude, duration or significance of sustainability effects for all themes at this stage in design progression.

3.13 The Sustainability Statement commentary includes signposting to aspects of forthcoming detailed design development for Tilbury2. This identifies particular areas for each sustainability theme where realising the potential for positive sustainability outcomes may be most strongly influenced.

4.0 SUSTAINABILITY STATEMENT THEMATIC COMMENTARY

4.1 This Chapter provides the Sustainability Statement thematic commentary, signposting those elements and measures of the Tilbury2 proposals that are considered relevant to the nine sustainability themes. The commentary for each theme draws on project information that relates to the relevant considerations presented previously in Table 3.3.

4.2 The focus of the narrative in this chapter is on the aspects of Tilbury2 that are considered likely to have the potential to result in either positive or negative sustainability outcomes – it is therefore not the intention to replicate all elements of the proposals for Tilbury2. In some instances, the assignment of a colour code (as introduced in para. 3.9) relies on mitigation measures incorporated into the Tilbury2 DCO. The Mitigation Route Map (Document 7.3) provides a list of proposed mitigation measures and the means by which they are intended to be secured within the DCO.

4.3 Where potential sustainability outcomes are uncertain based on currently available project information, or offer potential for a range of positive and negative sustainability outcomes, they are usually assigned an amber code. Similarly, where the realisation of potential for positive sustainability outcomes is dependent on future stages of project evolution, these are also coded amber. In these instances, the commentary signposts those aspects of project development that are considered to offer the greatest potential for translation into positive sustainability outcomes.

CLIMATE CHANGE MITIGATION – GREENHOUSE GAS EMISSIONS, CARBON AND ENERGY

4.4 The majority of potential sustainability outcomes related to this theme are positive, therefore this theme has been coded green. Achieving a balance in favour of realising the potential for more sustainable outcomes is particularly linked to: the ability of Tilbury2 to realise transmodal shift from road to shipping and rail; and the specification of detailed design and operation of the buildings, structures and plant at Tilbury2.

4.5 The Outline Business Case (Document 7.1) explains the need for expansion of capacity for port-centric development in and around the existing Port of Tilbury. At the centre of the Port activities is the ability to support increased import and export of goods by sea and Tilbury2 offers the enviable opportunity for deep water berthing at a rail-connected site. The National Policy Statement (NPS) for Ports

acknowledges that port developments may have an effect on greenhouse gases (GHGs), particularly through their impact on sea and road transport, citing the positive effects arising from transmodal shifts from road to shipping or to rail. The NPS also notes that benefits from these transmodal shifts can be greater than any additional emissions that may be associated with proposed developments[10].

4.6 The capability to handle deep sea aggregate vessels at a deep-water berth is a vital element of the Tilbury2 proposals as large-scale aggregates are handled on deep drafted vessels. The depth required for the dredging aspects of the proposals will allow the facility to handle all sizes of aggregate bulk vessels existing in the current market that may call at the terminal. Economies of scale are a major driver in ocean freight as the larger the vessel, the more efficient it is to move goods globally. The incorporation of a railhead within the development reduces the overall amount of heavy goods vehicle (HGV) trip generation that would otherwise be associated with a port expansion of this size. These strategic decisions to enable efficient modes for the transport of bulk goods and freight (i.e. sea and rail freight) support positive sustainability outcomes for this theme.

4.7 Notwithstanding the benefits that may be realised from transmodal shift, Tilbury2 will also result in increased import and export capacity and, as a consequence, overall increases in GHGs arising from inland transport. This element of the proposals is considered in the Carbon and Energy Report (Document 6.7), drawing on data set out in the Land-Side Transport chapter of the ES (Document 6.1, Chapter 13). The Carbon and Energy Report (Document 6.7) states that HGVs will be used to convey freight from Tilbury2 across the UK. Associated traffic movements were noted to be 713,210 two way movements across a year, considering annual average daily traffic (AADT). In the absence of specific information regarding their destinations a nominal 800 km two-way travel distance was assumed, based on an average distance to and from central Great Britain.

4.8 For the purposes of selecting an appropriate carbon factor for the assessment, HGVs were considered to be equivalent to large diesel fuelled articulated trucks of between 3.5 to 33 tonnes, with an average UK vehicle load. This equated to a carbon factor of 1.02464 kgCO_2e per tonne kilometre travelled, and a total CO_2e impact of circa 290,000 tCO_2e (two way movements). For the purposes of Carbon and Energy Report (Document 6.7), a nominal average figure between the known destinations was taken, rounded to 400 km for a one-way trip, and taken as 800 km two ways. This accounted for a train running empty to Tilbury2, then picking up freight, and conveying

[10] National Policy Statement for Ports, para. 4.12.1

it back to the origin. A carbon factor equivalent to rail freight was applied, equivalent to 0.04168 kgCO_2e/tkm. This equated to a total CO_2e impact of circa 85,000 tCO_2e (two way movements). The total of both road and rail import and exports movement equates to circa 375,000 tCO_2e.

4.9 The Tilbury2 proposals will generate GHG emissions during construction, as well as non-transport related GHG emissions during operation, in addition to the inland transport GHGs already noted. The generation of GHG emissions is both inevitable and unavoidable and has the potential for some negative sustainability outcomes in relation to this theme. However, measures can be put in place to manage and reduce such emissions. The CEMP (Document 6.9) establishes the framework within which construction activities must be undertaken and, as an example, includes controls on construction vehicle emissions as part of broader air quality management; and a presumption in favour of avoiding the use of petrol or diesel-powered generators where possible.

4.10 In order to capture and report anticipated GHG emissions during the construction and operational phases of Tilbury2, a Carbon and Energy Report has been prepared (Document 6.7). The document includes a carbon and energy footprint that reports anticipated GHG emissions as total mass in kilograms of carbon dioxide equivalent (CO2e). The findings of the Carbon and Energy Report (Document 6.7) indicate [that the proposals will result in a total CO_2e impact of circa 170,000 tCO_2e from the construction phase, across the 22-month programme, and an annual impact from operations of approximately 60,000 tCO_2em, throughout the expected 100 year operational life. Associated operations, which consider the indirect emissions from transport, including the import and export of goods from shipping and their conveyance around the UK, amount to an annual impact of 11.5 MtCO_2e. This is largely related to the high number of vehicle movements, the distances travelled and the tonnage of freight which would be transported.

4.11 The Tilbury2 proposals include the development of a number of above ground structures. The detailed design of these structures must be informed by their intended function and level of occupation but may, in some instances, offer the potential for contributing to positive sustainability outcomes. Such matters would, however, not be able to be determined until the future stages of detailed project design refinement. The potential contribution to additional positive sustainability outcomes is therefore noted above.

EFFICIENT RESOURCE USE AND WASTE MANAGEMENT

4.12 The majority of potential sustainability outcomes related to this theme are considered to be positive, therefore this theme has been coded green. Realising the potential for greater sustainability outcomes is particularly linked to: the details regarding the reuse of excavated and dredged materials, which will be informed by ongoing ground investigations (GI); and the development of detailed measures set out in the OMP (incorporating waste) (Document 6.10).

4.13 The Tilbury2 site is almost entirely comprised of previously developed land[11] that was formerly used as a power station; and the proposals include the adaptation of the existing jetty that was historically used for the delivery of coal and wood to the power station, as opposed to demolition. The position of the RoRo operation to the south of the site makes efficient use of the space closest to the vessel berth, recognising that aggregates can be simply and efficiently transported by conveyor to the CMAT with minimal land utilisation, again reflecting an efficiency in land use. These aspects of the Tilbury2 proposals represent efficient approaches to the use of land and resources and have the potential to deliver positive sustainability outcomes in relation to this theme.

4.14 However, the generation of solid waste and the use of materials is an inevitable consequence of all forms of development. There are three key receptors that have the potential to be affected during both construction, demolition and excavation (CD&E) and operation, these include: baseline waste arisings, capacity of waste infrastructure and the demand for key construction materials that are to be used as part of the development (CD&E only). As outlined in the ES (Document 6.1, Chapter 19), it is anticipated that development proposals will have a minor impact on the potential receptors.

4.15 It is proposed that waste will managed in accordance with the principles of the waste hierarchy. It is the intention of PoTLL to achieve this through measures such as promoting the use of sustainably sourced materials, minimising the use of key construction materials, reducing the use of materials with hazardous content and reducing/ preventing waste requiring disposal.

4.16 As part of the ongoing design phase of the Tilbury2 proposals and as secured in the CEMP (Document 6.9), waste will be designed out as early as practicable to ensure that materials used are to industry

[11] It is acknowledged that 1.32 hectares of the site is within designated Green Belt. The Planning Policy Compliance Statement describes the very special circumstances applicable to the use of the green belt as part of the Tilbury2 proposals.

standard specifications, are locally sourced, where practicable, and are reused/ reclaimed, where practicable.

4.17 A SWMP (Document 6.9, Appendix) has been prepared and included within the DCO application. The SWMP (Document 6.9, Appendix) details the likely waste types and quantities that will arise from the development proposal. By means of a summary, it is anticipated that approximately 183,900 tonnes of waste will be generated during the CD&E phase (2,387 tonnes of demolition waste, 109,400 tonnes of dredging/ excavation waste and 72,112 tonnes of construction waste). The SWMP (Document 6.9, Appendix) also sets targets for waste recovery and recycling to enable those working on Tilbury2 to have a clear understanding of what is required. These factors will contribute to positive sustainability outcomes in a number of ways, including minimising waste to landfill, in accordance with the waste hierarchy.

4.18 A specific example relates to the potential to re-use both marine dredgings and terrestrial excavation materials, which is still being optioneered. With regards to marine dredgings, these could either be re-used on land and/ or at sea (at licensed receptor sites) or a mix of both. With regards to terrestrial excavation material, this is being considered for re-use on site where appropriate. A Materials Management Plan (MMP) (or equivalent) will be prepared (as required by the CEMP (Document 6.9)) and maintained to reflect the outcome of optioneering.

4.19 Once the CD&E phase begins, onsite best practice construction measures will be followed, as secured through the CEMP (Document 6.9). These will include measures such as the maintenance of the SWMP (as a means of logging, auditing and managing waste generation); organising deliveries so materials arrive on site as they are needed, to reduce the possibility of damage and wastage occurring; and having clearly defined and separated skips on site and a clearly demarked waste area(s).

4.20 During the operational phase, it is estimated that approximately 56 tonnes of waste will be generated per annum. It is the intention of PoTLL to ensure the source segregation of residual, recyclable and hazardous waste through compliance with the Operational Management Plan (Document 6.10). In addition, it is important to note that, once operational, Tilbury2 will have a positive impact on the availability of key construction materials at a scale extending far beyond the local area. The proposed aggregate import capacity of the CMAT is noted in the ES (Document 6.1, Chapter 19) as 1,600,000 tonnes per annum. In addition, the proposals, once operational will also supply/ handle a maximum of 260,000 tonnes of asphalt, 50,000 m^3 of concrete, 150,000 tonnes of construction blocks and 150,000 tonnes of pre-cast concrete per annum (Document 6.1, Chapter 19).

In supplying/ handling such materials, the proposals will positively contribute to the demand for key construction materials nationally and will support local mineral plans such as the adopted Essex Mineral Local Plan (2014), the Greater Essex Local Aggregate Assessment (2016) and the Kent County Council's Minerals and Waste Local Plan 2013 – 2030 (2016).

4.21 Throughout all phases of the development proposal it is the intention of the PoTLL to provide regular training for staff/ sub-contractors regarding best practice waste management.

GREEN INFRASTRUCTURE AND BIODIVERSITY

4.22 There is potential for a range of positive and negative sustainability outcomes based on the available project information, therefore this theme has been coded amber. Realising the potential for greater sustainability outcomes is particularly linked to: the detail of the Landscape Management Plan, including off-site compensatory measures for the unavoidable loss of two local wildlife sites; and detailed drainage schemes, confirming the SuDS techniques to be employed.

4.23 The Government's policy is to ensure there is adequate provision of high-quality open space, (including green infrastructure) and sports and recreation facilities to meet the needs of local communities. The proposals include a number of embedded operational mitigation measures (see Mitigation Route Map (Document 7.3) that support green infrastructure and biodiversity. These have been developed through the masterplanning process and include peripheral structural landscaping that incorporates sustainable drainage (SuDS) techniques, retention/creation of some drainage channels and retention and enhancement of vegetation along the western and northern boundaries of the Tilbury2 site, together with retention and enhancement of the land outside of the rail sidings to the north east for off-site ecological mitigation. These measures have the potential to contribute towards positive sustainability outcomes for this theme.

4.24 The potential impacts of the proposals on green infrastructure and biodiversity have been appropriately assessed within Chapter 10 (Terrestrial Ecology) of the ES (Document 6.1). The assessment of impacts on biodiversity has developed, in part, in response to consultation and stakeholder comments provided throughout the DCO process. The proposals have progressed with the overarching aim of securing minimal or no net loss of biodiversity as a result of Tilbury2. The Lytag Local Wildlife Site and Tilbury Energy & Environment Centre Local Wildlife Site could not reasonably be retained whilst meeting the throughput requirements of PoTLL, the CMAT and their tenants for the RoRo terminal. Consequently, PoTLL is undertaking

work to develop off-site compensation for the loss and severance of areas of biodiversity value, and will be required to deliver this through the DCO.

4.25 Habitats on the riverward side of the flood wall, including the areas of saltmarsh vegetation and intertidal mud, will be subject to more limited scale and/or indirect effects associated with the construction of marine infrastructure. There will be considerable scope to retain the vast majority of these habitats intact and in-situ, although potential indirect effects on retained habitats are possible through changes to sediment circulation and deposition patterns, water quality changes and disturbance related effects, including light, noise and vibration (which could impinge on their use by fauna such as birds). Mitigation measures are included within the relevant ES chapters (Document 6.1) and have been incorporated into the masterplanning for the Tilbury2 site to provide cohesive solutions and promote habitat connectivity. These will be secured through the LEMP (Document 6.1, Appendix 10.P), compliance with which is secured by the DCO. The detailed proposals will be confirmed through future design stages and the amber coding against this theme reflects the uncertainty borne from the flexibility of the Tilbury2 proposals.

4.26 The structural landscape proposals incorporate surface water attenuation and storage in the form of SuDS, reflecting a combined approach to the delivery of green infrastructure within the Tilbury2 site. Implementation of a range of SuDS techniques may include ponds, attenuation tanks, bio-retention systems, filter drains, swales & ditches, previous pavements, trees and green roofs. The Drainage Strategy demonstrates how SuDS will be implemented and refers to the Essex County Council SuDS Design Guide.

4.27 The Tilbury2 site forms part of the generally flat landscape of the greater Thames estuary, which includes much of the marshland landscape in the locality. Whilst the Tilbury2 site is set within an already semi-industrial context, it was recognised that future development on the site would potentially be visible over a wide area. Consideration was given to what vegetation, if any, might be retained, particularly around the perimeter of the Tilbury2 site and where new planting might be appropriate. The LEMP (Document 6.1, Appendix 10.P) establishes the resultant design framework - the amber coding against this theme reflects the inherent uncertainty that accompanies all landscaping proposals in terms of how effectively they will establish and develop as biodiversity assets over time.

WATER RESOURCE MANAGEMENT AND FLOOD RISK

4.28 The majority of potential sustainability outcomes related to this theme are considered to be positive, therefore this theme has been coded green. Realising the potential for greater sustainability outcomes is particularly linked to effective application of proposed mitigation measures within the Drainage Strategy and OMP (Document 6.10) during construction and operation of the Tilbury2 proposals, which will be refined as the proposals develop to detailed design; as well as the detailed specification of construction activities in accordance with the CEMP (Document 6.9).

4.29 Consideration of the potential impacts and effects of Tilbury2 on water resources and water quality issues, as well as flood risk associated with the construction and development phases has been delivered through the ES (Document 6.1) and an additional Level 2 Flood Risk Assessment (FRA) (Document 6.1, Appendix 16.A) and Level 3 FRA (Document 6.1, Appendix 16.B). The ES (Document 6.1) identifies the options being considered to mitigate the potential issues that might be caused to the water environments by the proposals. If all mitigation measures set out in those FRAs are followed during the construction and operational phases (as is required by the DCO), there is the potential for positive sustainability outcomes against this theme. Examples of proposed mitigation measures are included in this section.

4.30 Appropriate permits within the Tilbury2 site will be obtained in relation to surface water and groundwater during both the construction and operations phases where this is necessary, and is not covered by the provisions of the Environment Agency's protective provisions within the DCO. Further mitigation measures that will be undertaken to protect water quality during construction and operations include (but are not limited to); bunding of potential contaminant sources (tanks, excavated soils, vehicle wash-down areas and refuelling operations), provisions of oil spill clean-up equipment and maintenance of machinery to minimise risk of leaks (as set out in the CEMP (Document 6.9) and the OMP (Document 6.10)).

4.31 Specific construction phase mitigation measures include a focus on the risks associated with dredging activities; appropriate controls of construction materials brought onto site such that these are free from contaminated material; application of appropriate care to avoid disturbance or rupture of underground services such as sewers, waste water pipes or fuel lines; and daily visual inspections for any evidence of ground contamination. Any earth moving operations that have potential to give rise to contaminated drainage will be undertaken in compliance with BSI Code of Practice for Earthworks

BS6031, 2009. These measures are secured through the CEMP (Document 6.9).

4.32 As best practice, all works will be subject to the Environment Agency (EA) Pollution Prevention Guidance (PPG). An incident response plan will be prepared prior to construction, which shall be present on site throughout construction to inform contractors of required actions in the event of a pollution incident. Implementation of all works would be in line with the EA's 'Groundwater Protection: Principles and Practice' (GP3) document, which sets out their position on a range of activities, including the storage of pollutants and hazardous substances – this requirement would be established through the provisions of the CEMP (Document 6.9) and the DCO requirement to comply with the Level 2 and Level 3 FRAs (Document 6.1, Appendices 16.A and 16.B).

4.33 During the operational phase, the ES (Document 6.1) identifies that any adverse impacts are likely to primarily affect the groundwater quality of the Principal Aquifer and the River Thames. In addition, although of minor magnitude, impacts to water quality and flow of most of the groundwater and surface water features might potentially occur. Further specific mitigation measures in the Drainage Strategy include water quality treatment such as oil/water separators and 'sediment traps' prior to any discharge into the water environment occurring; and the implementation of a range of SuDS techniques (ponds, attenuation tanks, bio-retention systems, filter drains, swales and ditches, previous pavements, trees and green roofs).

4.34 The Level 3 FRA (Document 6.1, Appendix 16.B) summarises that for the majority of the Tilbury2 site there is a reduction in flood depth, which is a reflection of the proposed increase in site levels compared to the existing and there will be no change in flood depth from a future breach. A Flood Emergency Plan is recommended to be developed for the whole site to establish a procedure to reduce the potential for future users of the site being exposed to the flood hazard as a result of a potential breach on the site. This is secured through the DCO requirement to comply with the Level 2 and Level 3 Flood Risk Assessments (Document 6.1, Appendices 16.A and 16.B).

4.35 The control of water consumption during construction is included within the framework for construction activities established in the CEMP (Document 6.9).

LANDSCAPE AND VISUAL IMPACT

4.36 There is the potential for a range of positive and negative sustainability outcomes based on the available project information, therefore this theme has been coded amber. Realising the potential for the greater balance of sustainability outcomes to be positive will be particularly linked to: the implementation of the LEMP (Document 6.1, Appendix 10.P), including the specific details regarding screening from Tilbury Fort and to the infrastructure corridor; and the detail of surfacing of prominent buildings and structures, as well as artificial lighting, which are to be approved by Thurrock Council, in consultation with Gravesham Borough Council and Historic England.

4.37 The development of the proposals for Tilbury2 is the product of a masterplanning exercise, which responded to an appraisal of the existing characteristics of the Tilbury2 site, as well as taking account of the context of neighbouring land uses and potential inter-visibility with the proposals. The use of masterplanning techniques represents good practice in sustainable design approaches, by allowing consideration of the interaction of all elements of large-scale developments in a holistic manner. Examples include the specification of structural landscaping that incorporates SuDS and also offer an element of noise attenuation; and the intention to incorporate enhanced access for non-motorised users within (and connecting to) the broader strategic transport and access network serving Tilbury2. Consultation has also been undertaken and regard has been had to consultee responses (see Consultation Report (Document 5.1)) in refining the general arrangement of the Tilbury2 site in readiness for applying for a DCO. These design approaches are considered to have the potential for some positive sustainability outcomes in relation to this theme.

4.38 The potential impacts of the proposals on specific landscape and visual receptors have been appropriately assessed within Chapter 9 (Landscape Character and Visual Amenity) of the ES (Document 6.1). The assessment has progressed, in part, in response to consultation and stakeholder comments provided throughout the DCO process. The principal landscape and visual impact receptors that have been identified are: users of PRoW, residential areas, users of recreational and/or tourism facilities, users of local roads, users of the London to Southend mainline railway and users of the River Thames.

4.39 Landscape and visual assessment of Tilbury2 has been carried out inclusive of landscape and visual mitigation (see Mitigation Route Map (Document 7.3)). The following adverse residual effects are reported: substantial to slight levels of effect on visual amenity during construction, moderate to slight levels of effect on visual amenity during the operational period and moderate-slight level of effect on the

landscape characteristics of the Tilbury Marshes. Above and beyond the planting included as mitigation, the following measures will also be delivered through the DCO.

- the detailed design of the surface of the tallest buildings and structures will be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council. This approach will help to minimise the perception of the visual impact of Tilbury2 in views from surrounding built heritage assets, including reducing the visual appearance of the massing by varying rooflines; and
- the detailed design of the lighting scheme will be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council. This approach will help to reduce the perception of potential impacts of lighting upon the settings of surrounding heritage assets, in particular Tilbury Fort where it could represent a significant change in night time views by drawing the eye towards more expansive industrial development, most evident in views from the south.

ECONOMY

4.40 The majority of potential sustainability outcomes related to this theme are considered to be positive, therefore this theme has been coded green. Realising the potential for greater sustainability outcomes is particularly linked to the effectiveness of PoTLL's proposed measures for encouraging businesses that will increase economic diversification; achieving maximum throughput of goods at the expanded port; successful delivery and good levels of take-up for skills and training opportunities; and ongoing support for workplace diversification measures.

4.41 The Outline Business Case (Document 7.1) for Tilbury2 is underpinned by evidence of a need and business sector appetite for an increase in port capacity, and the potential to catalyse economic growth of a sufficient scale to realise higher GVA. Development of the port and port related activity will support successful economic growth in line with Thurrock Council's regeneration priorities and policies (see Chapter 3), including development of more effective business functions and networks; attraction of high value-added investment; and skills development. These aspects of Tilbury2 offer potential for positive sustainability outcomes for this theme.

4.42 The socio-economic chapter of the ES (Document 6.1, Chapter 7) reports that during construction, Tilbury2 is anticipated to create 57 local jobs in both the Tilbury2 (regional) and Tilbury2 UK plc scenarios. UK-wide it is expected that 266 net full time equivalent (FTE) jobs will be generated, of these 218 will be regionally located.

The GVA contribution to the regional economy is expected to rise to £18.3 million, with a total contribution of £22.4 million GVA to the UK economy, thereby having a positive impact locally, regionally and nationally.

4.43 Once in operation, Tilbury2 could support up to 527 net additional jobs in the regional economy and 868 nationally, with 138 of these being locally sourced. Of the roles created, 49 are expected to be Manager positions, 148 in Administration and Business positions, 35 will be skilled positions and 268 will be Semi-skilled positions. Anticipated effects reported in the socio-economic chapter of the ES (Document 6.1, Chapter 7) include modest increases in wages and improvements to skills and training, aiding improvements to the local workforce and quality of life. These job opportunities have the potential to result in positive sustainability outcomes for this theme, as well as broader social benefits (these are considered later in this chapter). A Skills and Employment Strategy will also be agreed with Thurrock Council and be appended to the section 106 agreement to be agreed between PoTLL and Thurrock Council. A version of this is included at Document 5.3 Appendix A.

4.44 The value of the operation of Tilbury2 is quantified as a contribution of £35.6 million to the regional economy and £58.9million to the UK economy through increased capacity (from 13.5 million tonnes to 18.6 million tonnes). This will result in delivering more goods to the UK and generate local economic activity. Furthermore, the addition of new services at the port e.g. the CMAT, will assist in diversifying the local economic landscape, which is an essential feature of a resilient economy. The potential for economic diversification also offers the potential for positive sustainability outcomes.

4.45 A number of local businesses could see indirect benefits, for example through increased patronage as well as increased economic activity and revitalisation of the local area. Specific examples include the Gravesend-Tilbury Ferry services and the Thames Ship Repair Service and therefore potentially enabling indirect positive sustainability outcomes. Increased employment may also have subsequent positive impacts on the local real estate market, driving growth and replacement of older stock. Although these impacts are likely to be minimal in the context of overall housing market change, they illustrate the potential for Tilbury2 to encourage local economic growth with wide-reaching positive sustainability outcomes.

4.46 To the south of the river, it is expected that an increase in Tilbury port activity will act as an additional catalyst in the transformation of the wider area from heavy riverside industries to one that has more diverse employment and housing opportunities, as envisioned by Gravesham Local Plan. This is expected to assist in regeneration of

the Gravesham areas, particularly along the waterfront. Primarily, this will be achieved through the combined and cumulative impacts that will enhance connectivity, improve links to and across the river and promote economic diversification. This is an additional means by which Tilbury2 offers potential for positive sustainability outcomes in relation to this theme.

4.47 Despite the principally positive economic benefits that are anticipated as a result of the development, there are a number of sensitive businesses and activities that may be negatively impacted by the Scheme. These are particularly associated with riverside recreational activity such as Gravesend Sailing Club and Gravesend Rowing Club, both of which have been actively involved in the on-going consultation process. Mitigation to reduce or limit the negative impacts of increased shipping involves establishing 'good neighbour' operational principles within the immediate vicinity of the port, and through the operation of the Operational Community Engagement Plan (Document 5.7) secured through the DCO. It is thought that through these mitigation measures residual impacts will be reduced.

4.48 The visual amenity of Tilbury Fort is also likely to be indirectly impacted by the development; however, the impact of this on the local economy and tourism has been assessed within the ES (Document 6.1, Chapter 9) and is considered likely to be negligible beyond the existing impacts of Port of Tilbury. The use of landscaping and partial screening is expected to minimise the intrusion on the Fort, as discussed under the 'Landscape and Visual' and 'Cultural Heritage' themes within this chapter. Moreover, access for both staff and visitors to the fort will be maintained throughout the construction and operational phases.

4.49 Overall, the diversification of the local economy, and increase in employment opportunities and training are likely to increase the resilience of the local economy, thereby improving sustainability. Although some potentially negative outcomes are anticipated, these will likely be outweighed by positive sustainability outcomes resulting directly and indirectly from the expansion and diversification of the port.

SOCIAL AND COMMUNITY INFRASTRUCTURE AND COHESION

4.50 The potential sustainability outcomes related to this theme include a range of positive and negative elements, therefore this theme has been coded amber. Achieving a balance in favour of realising the potential for more sustainable outcomes is particularly linked to: the effectiveness of measures to encourage local access to, and take-up of education, training and job opportunities arising from Tilbury2, through the Skills and Employment Strategy; the realisation of beneficial demographic changes, such as increasing the proportion of females within the port workforce through targeted measures; designing and delivering effective mitigation for the increased severance and reduced pedestrian and driver amenity arising from the new road and rail infrastructure to serve the port, through the Active Travel Study (through the DCO and section 106 agreement with Thurrock Council, as relevant) and implementation of the Framework Travel Plan (Document 6.1, Appendix 13.A); and ensuring that the framework of controls in the CEMP are effectively filtered through to contractor activities, particularly in respect of factors that contribute to the experience of disturbance.

4.51 The sustainability commentary for this theme covers a range of community characteristics, such as demographic changes; skills, training and education; the quality, coherence and safety of connectivity between communities; health impacts and the potential effects on neighbouring residential areas.

Demographics and employment

4.52 The socio-economic chapter of the ES (Document 6.1, Chapter 7) reports that the development of Tilbury2 is anticipated to have some, albeit marginal, impacts on the demographic composition of Tilbury. This is most likely to be represented by positive shifts in age and gender mix. There is also expected to be a marginal positive effect on deprivation and social grade classifications.

4.53 In order to improve workforce diversity, PoTLL has an existing strategy in place working with Thurrock schools and colleges providing work experience placements, with a particular emphasis on encouraging females into port-related employment. PoTLL has also supported a recruitment campaign aiming to recruit female straddle carrier drivers and is looking into opportunities to build on this programme through social media. Further measures that are being considered by PoTLL include flexible working hours, childcare support, training opportunities and ‘taster’ days, which could build on the existing strategies, aimed at improving equality and diversity in employment. Such measures offer the potential for positive sustainability outcomes in relation to this theme.

4.54 PoTLL also guarantees interviews for disabled applicants who meet the employment requirements, rooted in a desire to improve representation of disabled people within the work place. The port continues to work with Thurrock Council in relation to employment matters, ensuring sustainable and inclusive practices. This approach to supporting inclusiveness is also considered to offer potential for positive sustainability outcomes in relation to this theme.

4.55 It should also be noted that a Skills and Employment Strategy will be agreed with Thurrock Council and be appended to the section 106 agreement to be agreed between PoTLL and Thurrock Council. A version of this document can be found at Document 5.3 Appendix A.

Access

4.56 Improving connectivity between communities and delivering access to existing facilities and services is an important element of supporting community cohesion. The construction activities at the Tilbury2 site require the temporary and permanent stopping up of certain PRoW. These include permanent closure of a footpath (FP144) that crosses the proposed infrastructure corridor to the south of the built-up area of Tilbury, routeing from Hume Avenue/The Beeches down the rear of properties on Brunel Avenue; and temporary diversion or stopping up of a public footpath along the foreshore of the Thames at the southern boundary of the Tilbury2 site, which forms part of the Thames Path.

4.57 As part of a package of proposals to address the effect of the proposals on the local PRoW network – the Active Travel Study – the Thames Path route will be enhanced once the port is operational, benefitting from improved surfacing and the crossing of flood defences near Bill Melroy creek. The 'Two Forts Way' public footpath runs along the river front between Tilbury Fort and Coalhouse Fort and will be retained, helping to preserve the historic connection between the two forts. PoTLL is also proposing enhancements to other crossing points from the town over the railway (the two points being the 'Hairpin Bridge to the west and Fort Road Bridge to the east) and an area wide strategy for improving footpath and cycle links between the town and the river. The strategy includes a 'way marking' scheme to improve route finding and appreciation of the area. These PRoW proposals will be secured through inclusion in the DCO for measures within the Order limits (through the ability of Thurrock Council to sign off on works to highways through their protective provisions) and inclusion within the section 106 agreement for those measures outwith the Order limits. On balance, the improvements outlined above, deliver an enhancement to the existing provision of access. A wider range of user groups are expected to benefit from the changes, therefore offering the potential for positive sustainability outcomes.

4.58 Tilbury2 includes a number of embedded mitigation measures that are designed to reduce impacts on the local community and transport network users. These include:

- Road safety – the new Port access road will be constructed to modern design standards enabling vehicles to manoeuvre safely; there will be reduced conflicts with fewer junctions/accesses than the existing route; and incorporation of new pedestrian/cyclist crossing facilities along national cycle network route 13 and the Thames Estuary Path providing a safer route;
- Driver delay – the direct new road link with fewer junctions than the existing route will reduce delay and shorten the route, with consequently lower vehicle mileage and associated environmental benefits for air quality (lower emissions); and
- Pedestrian Amenity – as described above.

4.59 The Land-Side transport chapter of the ES (Document 6.1, Chapter 13) predicts that the proposed package of mitigation measures should reduce the severity of predicted adverse effects to result in a slight adverse residual impact upon severance overall. The Tilbury2 proposals are therefore considered to have the potential for a range of sustainability outcomes in relation to this aspect of the theme, predominately negative in the construction phase, but with enhancement resulting in some positive outcomes once Tilbury2 is operational.

Noise and Visual Amenity

4.60 The proposed new rail corridor will be further from the nearest residential properties than the existing rail line, thus reducing the likely noise effects and therefore assessed in the ES (Document 6.1, Chapter 17) as having a beneficial effect on residential amenity and local communities. The masterplanning approach to the proposals for Tilbury2 also incorporates structural planting within and at the perimeter of the site, designed to deliver visual screening of the operational port, which is expected to become increasingly effective over time as the planting matures.

4.61 The elevated Fort Road option has been taken forward as it offers safety improvements associated with the reduced visibility of the crest curve at the existing Fort Road overbridge. Other improvements include separation of HGVs from local traffic and Non-Motorised Users; reduced visual intrusion by lowering the busier HGV link in favour of elevating the quieter local road; and continuity of the higher trafficked Infrastructure Corridor. These embedded mitigation measures will reduce the impact of the infrastructure associated with

Tilbury2 on local road users, as well as on neighbouring communities. Taking the mitigation measures into consideration, there is the potential for some positive sustainability outcomes in relation to this aspect of the theme.

Health

4.62 PRoW, open spaces, sports and recreational facilities all help to underpin people's quality of life and have a vital role to play in promoting healthy living. The Health Impact Assessment (HIA) for Tilbury2 forms part of the ES (Document 6.1, Chapter 8) and provides a specialist assessment of the potential health impacts and effects of the proposals. This section draws out a selection of the HIA findings, focusing on those considered of greatest relevance to this sustainability theme.

4.63 As discussed above and in relation to the 'transport and access' theme, Tilbury2 will include the diversion and/or closure of some PRoW in the construction stage; and modifications to the local highway network. Mitigation of predicted adverse effects will be delivered through a package of interventions designed to improve connectivity and upgrade sustainable cycle and walking options. This has the potential to deliver some positive sustainability outcomes for health, by encouraging an enhanced experience for walkers and cyclists once the port is operational.

4.64 The potential for reduced air quality, particularly during construction, will be mitigated through the application of best practice techniques, required by the CEMP, combined with embedded design features, for example, structural planting within and around the perimeter of the Tilbury2 site; noise screening at certain points along the rail corridor; and enclosure of certain areas of the CMAT. Noise control measures are also incorporated in the CEMP (for example, limits on construction working hours and controls on working days for the noisiest activities, such as piling). These types of measures should help to control the experience of disturbance by local communities and therefore have the potential to deliver some positive sustainability outcomes in relation to this aspect of the theme.

4.65 The majority of the Tilbury2 site is previously developed land, much of which was formerly in private use as a power station, or forms part of general port infrastructure. However, a 1.32 hectare section of land currently within the green belt land has been included in the scope of the masterplan proposals (see Planning Policy Compliance Statement for the justification of its use).

CULTURAL HERITAGE

4.66 The potential sustainability outcomes related to this theme include a range of positive and negative elements, therefore this theme has been coded amber. Achieving a balance in favour of realising the potential for more sustainable outcomes is particularly linked to: the effective adherence to archaeological protocols in accordance with the CEMP; the detailed design and layout of buildings, structures and plant at Tilbury2; and the maturing of structural screen planting within and on the perimeter of the site over the project lifecycle.

4.67 Appropriate consideration of the potential impacts and effects of Tilbury2 on cultural heritage, during both construction and operation, has been delivered through the DCO and the documents secured by it. The scope of the ES assessment (Document 6.1, Chapter 12) has considered both terrestrial and maritime heritage assets, and will continue to be informed by archaeological site work to be completed under PoTLL's management in accordance with written schemes of investigation.

4.68 The cultural heritage chapter of the ES (Document 6.1, Chapter 12) reports on the potential receptors and predicted effects of Tilbury2 on known heritage assets. As the vast majority of the Tilbury2 site is previously developed land, the potential for buried archaeological assets is low. The terrestrial and marine written schemes of investigation will establish measures governing the implementation of best practice arrangements for archaeological discoveries by Contractors. This reflects best practice and is also considered to contribute to some potential for positive sustainability outcomes in relation to this theme.

4.69 Tilbury Fort is a scheduled monument of very high sensitivity, 200m from the western edge of the Tilbury2 site, and has therefore been a particular consideration in the development of the masterplanning proposals. Potential impacts on the setting and views of and from Tilbury Fort have been identified in relation to the extension of the existing jetty and increased noise, vibration, construction traffic and the introduction of construction and operational lighting. The position of the Tilbury2 site means that the lower elements of the proposals are likely to be largely screened from view by existing vegetation and intervening built development (Anglian Water Works and Stobart's storage/aggregates site). However, the construction activities and presence of the taller elements of the proposals will be visible, including the 100m silo, warehouse building, bulk storage/plant in the north-west portion of the Tilbury2 site and the infrastructure corridor, which passes to the north of Tilbury Fort.

4.70 The CEMP (Document 6.9) and CTMP (Document 6.9, Appendix) will ensure that construction activities and working hours are appropriately controlled; however, the construction and subsequent operation of Tilbury2 will alter the setting of Tilbury Fort through introducing an increased industrial character surrounding the Fort. Whilst the heritage asset is already experienced within an industrial setting to an extent, the construction of Tilbury2 will bring this character closer to the Scheduled Monument. This is likely to be principally through visual and noise impacts. Overall, the construction effects will be temporary in nature and assessed in the ES (Document 6.1, Chapter 12) as likely to be of a low to medium adverse magnitude of impact, resulting in a predicted moderately significant adverse residual effect. This element of Tilbury2 is therefore considered to have the potential to result in some negative sustainability outcomes, albeit that they will lessen in severity once the infrastructure corridor is built and structural planting at the site matures to enhance visual screening.

4.71 In undertaking initial consultation, the potential for impacts on heritage assets to the south of the river within Gravesend was also raised, given that the Tilbury2 site is visible in views from Gravesend Conservation Area, which also contains a number of listed buildings. The masterplanning for the Tilbury2 site has therefore been informed by particular consideration of the impacts on Tilbury Fort and also more distant views from vantage pints within conservation areas on the south of the River Thames that have inter-visibility with the Tilbury2 site. For example, the vertical alignment of the access road has been designed to limit the intrusion of passing HGVs on the setting of the Fort; and structural planting provides screening to further limit effects on the setting. The arrangement of the RoRo and CMAT facilities within the site also positions the lower developments closer to the riverbank, which will help to reduce the appearance of the massing of the development when viewed from the south. Consequently, the location of the RoRo terminal at the southern end of the site has benefits in relation to the setting of heritage assets on the north and south bank of the Thames as the RoRo terminal will involve less visually intrusive structures, and will not include the stockpiles associated with the CMAT. This has the potential to deliver some positive sustainability outcomes for this theme.

TRANSPORT AND ACCESS

4.72 The majority of potential sustainability outcomes related to this theme are considered to be positive, therefore this theme has been coded green. Realising the potential for a greater positive sustainability outcomes is particularly linked to: possible further mitigation measures for transport that may emerge through the Framework Travel Plan (Document 6.1, Appendix 13.A); the effectiveness of measures to encourage staff to travel by more sustainable means; and the impact of the Sustainable Distribution Plan (Document 6.1, Appendix 13.B) in practice, managing the transport of goods by sustainable modes where practicable.

4.73 The potential impacts of the proposals on land-side transport have been appropriately assessed within Chapter 9 (Land-Side Transport) of the ES (Document 6.1), which incorporates the Transport Assessment. The assessment of transport has progressed, in part, in response to consultation and stakeholder comments provided throughout the DCO process. This has included consideration of local Non-Motorised User networks and the potential impacts on commuter and leisure traffic using the River Thames.

4.74 A CTMP (Document 6.9, Appendix) has been produced. It provides details of the anticipated traffic associated with the construction of Tilbury2, which will largely be associated with the following sources: the delivery and/or collection of plant, delivery of construction materials and/or removal of waste materials and the construction workforce. The CTMP (Document 6.9, Appendix) and Framework Travel Plan (Document 6.1, Appendix 13.A) establish a range of controls and general principles that PoTLL will expect contractors to reflect in their work. For example, the majority of equipment and plant for marine works should arrive by river; there is a presumption in favour of re-using materials on site (in accordance with the waste hierarchy), thus minimising exports during construction; and contractors will be expected to encourage construction personnel (expected to total up to 300 for the duration of the 22-month construction period) to use more sustainable travel modes to access construction work areas, by advising its personnel as to how to travel to the site by non-car modes and provide details of public transport maps and timetables to all personnel at initial site briefings; as well as encouraging car-sharing where other modes are not practicable. These measures offer the potential for positive sustainability outcomes in relation to this theme.

4.75 A Framework Travel Plan (Document 6.1, Appendix 13.A) for Tilbury2 has been produced, which sets out the measures that will be introduced to encourage travel by staff by modes other than by single occupancy car journeys once the port is operational.

4.76 Similarly, to encourage and manage the transport of goods by sustainable modes, a Sustainable Distribution Plan (Document 6.1, Appendix 13.B) has been prepared, designed to optimise the use of the transport infrastructure provided as part of Tilbury2. The overarching purpose of the Sustainable Distribution Plan (Document 6.1, Appendix 13.B) is to manage freight traffic to minimise HGV demand on the local highway network. The proposals (along with other rail infrastructure investment) demonstrate the commitment of PoTLL to transport goods by rail. The Tilbury2 proposals include a new dedicated connection integrated with the CMAT to enable efficient transport of aggregates by rail. In accordance with the NPS, it is therefore proposed to import/export 53% of Aggregate via alternative modes to HGV, which is a significant proportion. Further measures, such as vehicle optimisation and encouraging the Tenant to sign up to Thurrock Council's Freight Quality Partnership, will assist in minimising the HGV traffic generation of the proposed development on the local highway network. The proposed measures are not intended to be a static list, therefore new methods or technologies that minimise HGV traffic will be investigated by the Tilbury2 Sustainable Travel Group required to be created by the Sustainable Distribution Plan (Document 6.1, Appendix 13.B) and Framework Travel Plan (Document 6.1, Appendix 13.A). These measures are considered to offer potential for positive sustainability outcomes in relation to this theme.

5.0 CONCLUSIONS

5.1 This chapter provides a summary of the overall scoring of the potential sustainability outcomes of Tilbury2 in relation to the nine sustainability themes (Table 5.1). This is supported by a summary of the key areas identified as offering the greatest potential for positive sustainability outcomes to be realised through the detailed design of Tilbury2 that would follow any grant of DCO. Concluding comments are provided, reflecting on the potential contribution of Tilbury2 to the key sustainability objectives identified through the policies and plans review.

Table 5.1 – Summary of coding by sustainability theme

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
Climate Change Mitigation – Greenhouse Gas Emissions, Carbon and Energy	Positive	Catalysing effective transmodal shift from road to shipping and rail.
Efficient Resource Use and Waste Management	Positive	Development of detailed proposals for the reuse of excavated and dredged materials. Development of detailed measures for waste management, as required by the Operational Management Plan (Document 6.10).
Green Infrastructure and Biodiversity	Range of positive and negative outcomes	Development of the LEMP (Document 6.1, Appendix 10.P). Effective application of on-site compensatory measures and implementation of off-site compensatory measures required by the DCO for

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		ecology and biodiversity, linked to the loss of local wildlife sites and priority habitats. Effective application of Drainage Strategy.
Water Resource Management and Flood Risk	Positive	Effective application of proposed mitigation measures for water resources as set out in the Drainage Strategy, CEMP (Document 6.9) and OMP (Document 6.10). Detailed specification of construction activities in accordance with the CEMP (Document 6.9).
Landscape and Visual	Range of positive and negative outcomes	Implementation of the LEMP (Document 6.1, Appendix 10.P), to ensure screening of Tilbury2 from views of Tilbury Fort; and screening to the infrastructure corridor. Surfacing of key buildings and structures to be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council, secured through the DCO. Detailed proposals for artificial lighting to be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council secured through the DCO.

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
Economy	Positive	Successful attraction and retention of additional and expanding port-related businesses, to deliver diversification. Catalysing effective growth in the throughput of goods at the expanded port, to maximise efficient use of new capacity. Successful delivery and take-up for skills and training opportunities, through the Skills and Employment Strategy to be secured through a section 106 agreement with Thurrock Council. Ongoing success in supporting workplace diversification measures.
Social and Community Infrastructure and Cohesion.	Range of positive and negative outcomes	Successful delivery and take-up for skills and training opportunities through the Skills and Employment Strategy to be secured through a section 106 agreement with Thurrock Council. Realising good representation of local people within the construction and operational workforces. Detailed design for connecting new infrastructure to established PRoW and local networks, to avoid severance and enhance driver amenity

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		through the Active Travel Study secured through its inclusion in the DCO or the section 106 agreement with Thurrock Council. Effective translation of the framework of controls within the CEMP (Document 6.9) through to contractor activities.
Cultural Heritage	Range of positive and negative outcomes	Effective adherence to archaeological protocols in accordance with the CEMP (Document 6.9). Surfacing of key buildings and structures to be approved by Thurrock Council, in consultation with Historic England and Gravesham Borough Council Effective establishment and maturing of structural screen planting within and on the perimeter of the Tilbury2 site through the implementation of the LEMP (Document 6.1, Appendix 10.P).
Transport and Access	Positive	Detailed proposals and measures to be delivered through the Framework Travel Plan (Document 6.1, Appendix 13.A), secured through the DCO. Effective implementation of the Sustainable Distribution Plan (Document 6.1, Appendix 13.B), supported by relevant local

Sustainability Theme	Code (based on Tilbury2 proposals)	Key areas of potential for positive sustainability outcomes in future design evolution
		stakeholders, secured through the DCO.

5.2 None of the sustainability themes are identified as having a majority of potential negative sustainability outcomes.

POTENTIAL POSITIVE SUSTAINABILITY OUTCOMES

5.3 The majority of potential sustainability outcomes for the Tilbury proposals are coded as positive for five of the nine sustainability themes. This coding is based largely on strategic decisions that underpin the Outline Business Case for Tilbury2, as well as commitments to following established best practice within the frameworks of the CEMP and OMP and other documents secured through the DCO. The process of detailed design development also offers opportunities for further positive sustainability outcomes to be realised. These themes are listed here.

- Climate change mitigation – greenhouse gas emissions, carbon and energy.
- Efficient resource use and waste management.
- Water resource management and flood risk.
- Economy.
- Transport and access.

VARIABLE OR UNCERTAIN SUSTAINABILITY OUTCOMES

5.4 Four of the sustainability themes are identified as having the potential for a range of positive and negative outcomes. This coding is based largely on the inherent flexibility that exists in the Tilbury2 proposals and the process of detailed design development offers opportunities for a greater balance of positive sustainability outcomes to be realised. These themes are listed here.

- Green infrastructure and biodiversity.
- Landscape and visual.
- Social and community infrastructure and cohesion.
- Cultural heritage.

CONTRIBUTION OF TILBURY2 TO ADDRESSING KEY SUSTAINABILITY OBJECTIVES

5.5 This concluding section of the Sustainability Statement provides a commentary on the contribution of the Tilbury2 proposals to the key sustainability objectives, as listed at para. 1.4 of section 1. The commentary also draws on the contents of the Planning Policy Compliance Statement, which provides a fuller consideration of the alignment of the Tilbury2 proposals with relevant planning policy.

Economic growth

5.6 Tilbury2 will facilitate the continued expansion of port and logistics related facilities at Tilbury, together with the introduction of additional capacity for aggregates imports, the need for which described in the Outline Business Case (Document 7.1). Tilbury2 therefore supports the economic growth drivers implicit in the NPS for Ports, as well as the aspirations of Thurrock Council, as expressed in the Thurrock Core Strategy, particularly through policies CSSP2 and CSTP28. The provision of rail freight access, coupled with PoTLL's desire to encourage transmodal shift from road to shipping and rail, which is reflected in the Sustainable Distribution Plan (Document 6.1, Appendix 13.B), contribute to addressing sustainable transport issues, while also facilitating economic growth. The delivery of rail connectivity to ports also aligns with Thurrock Council policies, particularly CSTP17.

5.7 Tilbury is described in the Development Plan for Thurrock Council as a key location for employment in the borough, with expected job creation in logistics, ports and riverside industries estimated at between 1,600 and 3,800 over the plan period[12]. Job creation associated with Tilbury2 is estimated as 266 net FTE jobs during construction, 218 of which would be regionally-based; and up to 527 operational FTE jobs in the regional economy and 868 nationally. This will contribute to the desired job creation figures, and add GVA to the regional economy, which is expected to rise to £18.3 million. Tilbury2 is also estimated to make a total contribution of £22.4 million GVA to the UK economy. Taken together, these aspects of Tilbury2 are therefore expected to have a positive economic impact locally, regionally and nationally.

Education and deprivation

5.8 A Skills and Employment Strategy is to be secured through a section 106 agreement with Thurrock Council. PoTLL intends for this to complement existing measures targeting enhanced workplace

[12] Thurrock Core Strategy and Policies for Management of Development, para. 3.34

diversity. Successful realisation of the measures should contribute to upskilling locally and regionally, as well as positive demographic changes within the workforce. Maximising representation of local people within the workforce could, in turn, manifest as beneficial in terms of tackling deprivation within the local communities. This approach has the potential to contribute to the sustainability objectives identified in relation to demographics, deprivation and skills development.

Tilbury Fort

5.9 PoTLL has adopted a masterplanning approach to the design and layout of the facilities at the Tilbury2 site. Careful consideration has been given to existing cultural heritage and landscape assets, particularly Tilbury Fort, in recognition of its international significance as a defence and military coastal fortification, subject to SM designation. The design approach has included optioneering, with the proposals incorporating access infrastructure that will limit inter-visibility of passing HGVs and rail freight with Tilbury Fort through a combination of ground levels and structural planting. The Preliminary Lighting Strategy and Assessment (Document 6.1, Appendix 9.J) establishes principles of limiting the use of artificial lighting and employing techniques to reduce visual intrusion in longer distance night-time views of Tilbury Fort. These approaches are considered to balance the need for supporting economic development, whilst proposing forms of development that maintain and respect the cultural heritage assets of the estuary, particularly Tilbury Fort.

Green spaces, amenity and connectivity

5.10 Thurrock Council's Core Strategy indicates that development should maintain the integrity of green and historic assets in the borough, supporting what it terms the green-grid. The selection of the Tilbury2 site for expansion of the port resulted from a optioneering exercise that sought, amongst other factors, to minimise encroachment into open space. The subsequent masterplanning exercise, which is described in the Masterplanning Statement, adopted a strategic approach to the layout of structural planting. The resultant proposals establish a verdant edge to the development, and some linear structural planting within the Tilbury2 site, which could together act as a cohesive wildlife corridor connecting river to open space, some of which is green belt.

5.11 PoTLL acknowledges that the Tilbury2 proposals will affect the local PRoW network. A package of proposals (Active Travel Study), including some off-site improvements, has been developed, to be secured through inclusion in the DCO for measures within the Order limits and inclusion within the section 106 agreement for those

measures outwith the Order limits. The measures include enhancement to the Thames Path route once the port is operational, benefitting from improved surfacing and the crossing of flood defences near Bill Melroy creek; and the retention of the 'Two Forts Way' public footpath along the river front between Tilbury Fort and Coalhouse Fort, helping to preserve the historic connection between the two forts. PoTLL is also proposing enhancements to other crossing points from the town over the railway (the two points being the 'Hairpin Bridge to the west and Fort Road Bridge to the east) and an area wide strategy for improving footpath and cycle links between the town and the river. The strategy includes a 'way marking' scheme to improve route finding and appreciation of the area. This approach will contribute to maintaining and enhancing pedestrian amenity and strengthening the green-grid connectivity around and through the Tilbury2 site, particularly to the open areas and green belt to the east.

Climate change

5.12 The National Policy Statement (NPS) for Ports acknowledges that port developments may have an effect on greenhouse gases (GHGs), particularly through their impact on sea and road transport, citing the positive effects arising from transmodal shifts from road to shipping or to rail. The NPS also notes that benefits from these transmodal shifts can be greater than any additional emissions that may be associated with proposed developments[13]. The incorporation of a railhead within the development reduces the overall amount of HGV trip generation that would otherwise be associated with a port expansion of this size. The Carbon and Energy Report (Document 6.7) provides a calculation of predicted carbon emissions taking account of the multi-modal elements of the Tilbury2 proposals and measures designed to promote transmodal shift, including the Framework Travel Plan and Sustainable Distribution Plan (Document 6.1, Appendices 13.A and 13.B). These strategic decisions to enable efficient modes for the transport of bulk goods and freight (i.e. sea and rail freight) support positive sustainability outcomes in terms of climate change.

5.13 The construction and operation of Tilbury2 will be in accordance with controls established in the CEMP (Document 6.9), which includes a SWMP; and the OMP (Document 6.10), which covers waste. Both stages of the development will therefore accord with the principles of implementing a sustainable waste hierarchy.

5.14 The Drainage Strategy has been informed by the Level 2 and Level 3 FRAs (Document 6.1, Appendices 16.A and 16.B), which take account of the predicted effects of climate change. The Tilbury2

[13] National Policy Statement for Ports, para. 4.12.1

proposals also incorporate SuDS as an integral part of the landscaping proposals.

Efficient use of land and material assets

5.15 The majority of the Tilbury2 site is previously developed land, much of which was formerly in private use as a power station, or forms part of general port infrastructure. The design incorporates the retention, adaptation and extension of the existing jetty in preference to creating entirely new jetty infrastructure and adherence to the waste hierarchy supports the reuse of materials where practicable. The Tilbury2 proposals will therefore represent an efficient use of land and existing material assets.