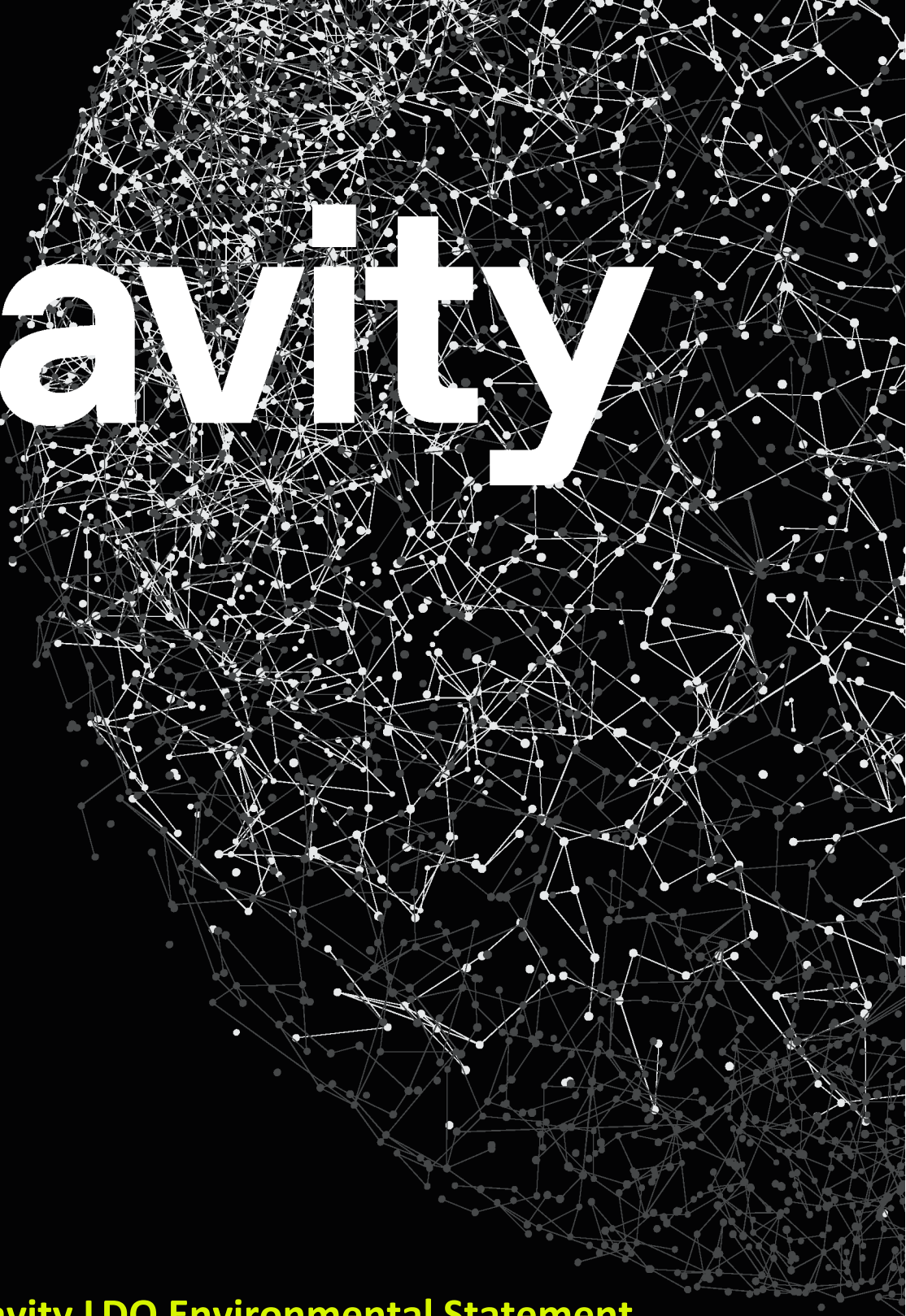
Gravity

Smart Campus



Gravity LDO Environmental Statement

Volume 1 – Chapters 1-6: Introductory Chapters

Gravity Local Development Order

Environmental Statement October 2021 Volume 1: Main Report

CONSULTATION DRAFT

On behalf of **This is Gravity** and **Sedgemoor District Council**

Project Ref: 49102 | Rev: V1 | Date: October 2021

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For and on behalf of Stantec UK Limited				

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V1	27.09.21	DRAFT ISSUE FOR COMMENT	JE	SN	SB
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Foreword

This is Gravity Ltd (Gravity), is proposed to be the UK's first commercial smart campus, creating a blueprint for a smarter, cleaner future - faster. It will deliver a new era of possibility by hosting and supporting companies who are committed to making a difference socially, economically, and environmentally, driving the UK's transition to a cleaner economy.

With its unique scale and immediate availability as a 616-acre enterprise zone, excellent connectivity to national and local infrastructure including Bristol port and airport, the Site is located at the heart of a South West innovation cluster comprising Bristol University's Smart Lab, the Bristol Robotics Lab, the National Composites Centre, the Institution of Advanced Automotive Propulsion (IAPPS), creating a centre of excellence in the UK for transport decarbonisation, electrification and innovation.

With dark fibre in place, and working with Cellnex, Gravity can offer digital connectivity as well as an accessible talent pool including four top-tier universities and a high performing college close by to meet workforce needs. With on-site water provision, national scale energy including renewable and low carbon energy infrastructure and energy management solutions, Gravity can provide occupiers with the ability to invest, transform and create a new era of green jobs driven by advanced manufacturing, as part of a 4th Industrial Revolution.

Gravity establishes the foundations for accelerating and transforming the economy through enabling a smart campus whilst simultaneously creating a new commercial environment geared to cutting greenhouse gas emissions, creating good jobs, integrating low carbon homes and realising positive social outcomes for local communities. Gravity will be a low carbon campus generating more than 4000 green collar jobs and potentially up to 7500 jobs, depending on end occupier, providing both a strategic economic stimulus to drive economic renewal, shaping and connecting to a green supply chain across the UK. Home to international business, start-ups and SMEs, Gravity will be a home for Clean Growth and green industries, creating the space to innovate and create sustainable solutions from energy solutions to smart homes and new smart mobility choices. Gravity is a UK destination for international occupiers and will drive the delivery of the Sedgemoor, Somerset, and Heart of the Southwest Local Enterprise economic, climate change, and Local Industrial Strategy: delivering transformational investment opportunities, unlocking connectivity through infrastructure, and bringing new higher value employment and skills opportunities to the Southwest as a whole.

Gravity is being taken forward through a Local Development Order (LDO) which is a route to planning permission. LDOs are a positive planning tool and a marketing tool for the locality and site. They create a more certain planning environment for investors and potential occupiers, and thereby make inward investment more attractive. They embody a fundamental shift on the part of local authorities from waiting for the market to come to them with a proposal, to initiating development by granting permission for the kind of development that they want to come forward on a site. The Gravity LDO is therefore informed by the market to be highly responsive in a national and international context and will help Sedgemoor, Somerset and the Southwest region, compete for scarce investment against other national and international competitors.

The function of an LDO is to accelerate delivery. They are about adopting a local solution to simplifying planning and provide local authorities with a flexible tool to address particular circumstances. Over 100 LDOs now exist across 80 authorities who wish to be proactive in attracting investment. The Gravity LDO will further demonstrate SDC's proactive approach to economic development and being 'open for business'. As such, in adopting the Gravity LDO, Sedgemoor will add a robust management tool for the EZ, to complement the Development Plan, to achieve corporate, economic, and planning policy objectives to the benefit of the local, regional, and national economy providing maximum benefit to the Sedgemoor community.

Contents

1 Introduction

1.1 Project Background

1.1.1 An Environmental Impact Assessment (EIA) has been managed by Stantec UK Limited (Stantec) on behalf of Gravity and Sedgemoor District Council (SDC) in relation to the Local Development Order (LDO) for a Site known as Gravity, to the east of Junction 23 of the M5, in Sedgemoor, Somerset (referred to hereafter as 'the Site') to grant a simplified, flexible planning permission capable of meeting market requirements for the Gravity Smart Campus and Community ("Proposed Development").

1.1.2 This Environmental Statement (ES) presents the findings of the EIA and identifies and assesses the likely significant environmental effects of the Proposed Development during demolition, construction and operation.

1.1.3 The 261.54 hectare site is within ownership of This is Gravity Ltd and is within the administrative boundary of Sedgemoor District Council (SDC) and the full site is a Government approved Enterprise Zone, designated to attract international inward investment. The Site is largely a brownfield regeneration site, being previously used as a single industrial use as an ordnance manufacturing facility. A previous consent (the 'Remediation Planning Consent') has approved site remediation and this is complete, and a second consent (the '2017 Planning Consent') has enabled the construction of a new link road as part of that consent, also complete (October 2021).

1.1.4 The LDO represents the next phase of the consenting process to re-imagine the Site within a new era of clean inclusive growth and this will facilitate the delivery of the Gravity Smart Campus and Community, establishing a planning regime for fast track responses and implementation to be highly responsive to international business needs.

1.1.5 The Proposed Development is framed to attract large scale advanced manufacturing facilities to the UK to accelerate progress towards achieving a net zero carbon economy, hosting new business to support transport decarbonisation and the shift to electrification. Gravity will be a key driver in the UK and regional economy to take positive action to address climate change.

1.1.6 An LDO is intended to grant planning permission for specific types of development within a defined area. LDOs streamline the planning process by removing the need for developers to make a detailed planning application to a Local Planning Authority. The implementation process is replaced by a fast track compliance process when individual proposals can be authorised within the LDO framework. LDOs create certainty for prospective occupiers and save time for those involved in the planning process, whilst ensuring that public interests such as an inefficient land-use and environmental protection are balanced. A simplified planning regime was a key part of the Memorandum of Understanding between the Government, the District and County Councils and the Heart of the South West Local Enterprise Partnership, to facilitate inward investment and job creation, and to enable local business rates retention from the Enterprise Zone to support delivery and locality transformation. The LDO responds to that commitment.

1.2 Terms and Definitions

1.2.1 For ease of reference the following terms have been used throughout the ES:

- **The Site** – the area within the LDO boundary at **Appendix 1.1, Volume 2**;
- **Proposed Development** – the development to be consented by the LDO;
- **LDO** – Local Development Order;

- **SDC** – Sedgemoor District Council, which will make the LDO;
- **This is Gravity Ltd (Gravity)** – landowner of the Site;
- **The 2013 HEP Application** – the hybrid planning application for the Huntspill Energy Park (HEP) which related to the majority of the Site;
- **2017 Planning Consent** – The planning permission for HEP received in November 2017 (reference number 42/13/00010). The boundary of the 2017 Planning Consent is shown at **Appendix 1.2, Volume 2**;
- **Remediation Planning Consent** - demolition of existing structures and remediation works for the Former Royal Ordnance Factory (ROF) site were subject to a separate planning application which was approved by SDC on 3 April 2012 (reference number 42/11/00017);
- **Advanced Manufacturing** - the use of innovative processes, practices and technologies to improve existing and create new products, increasing competitiveness and productivity across the manufacturing sector;
- **Huntspill Energy Park** – the name of the development approved by the 2017 Planning Consent;
- **Royal Ordnance Factory** – ROF – the former use of the land on which the 2017 Planning Consent was granted;
- **Within ROF fence** – Land within the Site boundary which is within the historic Royal Ordnance Factory site;
- **Outside ROF fence** – Land within the Site boundary that is outside the historic Royal Ordnance Factory site;
- **Gravity Link Road** – new road which connects the Site to the A39 and then to Junction 23 of the M5 to the west due to be completed in October 2021;
- **Enabling works** – demolition, land clearance, site preparation and construction processes; as described in part (a) of the Description of Development at **Section 4.2**;
- **The approved village enhancement scheme** – this was identified as mitigation for the 2017 Planning Consent and will be implemented one year from the opening of the Gravity Link Road; the scheme will improve linkages between Puriton to Woolavington and delivering traffic calming in both villages;
- **Approved Developments** – planning permissions in the vicinity that are partially built out and extant planning permissions with which there is the potential for significant adverse cumulative effects to occur with the Proposed Development. These have been agreed through Scoping with SDC and are factored into the 2032 baseline. The Approved Developments are outlined in **Appendix 1.3, Volume 2** and their locations shown on the map provided in **Appendix 1.4, Volume 2**;
- **Parameter Plans** – plans that establish parameters for the Proposed Development. These plans form the basis of the assessment in this ES. These are included in **Appendix 3.1a-g, Volume 2**;
- **Concept Plan** – an indicative plan which shows how key structural elements, such as green infrastructure and land uses, could be distributed across the Site within the

parameters set by the Parameter Plans. This is an indicative plan and has not been used as the basis of this ES. It is provided in **Appendix 1.5, Volume 2**.

- **Design Guide** – forms part of the LDO and identifies design principles for a deliverable scheme that responds to the Site's technical and environmental constraints and opportunities; the Design Guide has informed the assessment in this ES;

- **Compliance Form –** a form that enables applicants to demonstrate that proposals are in compliance with the specifications set out within the adopted LDO documents. This form is appended to the LDO.

- **Current State of the Environment** - the state of the environment in 2021, which includes part implementation of the 2017 Planning Consent (i.e. Gravity Link Road, ecological enhancements and site remediation completed);

- **2032 Baseline** - The current conditions at the Site and in the surrounding area which have been factored forward to predict likely conditions at the Site in 2032 to enable the effects of the LDO to be considered against a 'do nothing' scenario. This includes the 2017 Planning Consent (but excluding the safeguarded energy land uses), the Gravity Link Road and the Village Enhancement Scheme, approved/allocated developments in the vicinity and likely changes to the natural environment between now and 2032;

- **Safeguarded Land Uses** - these were identified in the 2013 HEP Application and include the below. They were considered as part of the HEP ES but were not consented.

  - **Energy generating uses (38.74 hectares – 95.7 acres):** dependent upon their energy output, applications were to be made to the Planning Inspectorate if 50MW output or greater, or to Sedgemoor District Council if lower than 50MW;

  - **Rail Reinstatement (5.4 hectares – 13.3 acres):** Land safeguarded to reinstate the redundant rail line from the north-west corner of the site and down the western boundary.

  - **Leisure use (11.7 hectares – 28.9 acres)**: in respect of:

    - Two rugby pitches, associated changing rooms, car parking and relocation of an existing football pitch;

    - Minor alterations to the layout of an existing fishing club;

    - A new skate park.

- **Embedded mitigation** – measures which are designed to be an inherent part of the Proposed Development and are set out in the Mitigation Checklist in Chapter 4 of the Design Guide;

- **Further mitigation** – measures which require further activity to be achieved, and form an inherent part of the Proposed Development through the Design Guide and management processes;

- **Impact** – in relation to the outcome of the Proposed Development (e.g. the removal or modification of habitat or a proposed improvement to reducing emissions to air);

- **Effect** – the consequent implication of an impact in environment terms (e.g. the loss of trees on site and of potential visual impact of the development, or an improvement in local air quality).

1.3 Existing Planning Consent within the LDO Boundary

1.3.1 Part of the Site, then known as Huntspill Energy Park, received hybrid planning permission for an Energy Park in November 2017 (the '2017 Planning Consent'). Prior to determination of that application, the Site secured Enterprise Zone status in 2015, becoming live from April 2017. Some elements of the 2017 Planning Consent, including the Gravity Link Road and the Remediation Planning Consent, have already been implemented with remediation complete and the road completing in October 2021.

1.3.2 The Site boundary for the 2017 Planning Consent, referred to as the 'Hybrid Planning Application Boundary' is shown on the plan in **Appendix 1.2, Volume 1**. As a comparison, this plan also shows the Site boundary, referred to on the plan as the 'Gravity Smart Campus and Community Boundary'. This plan also shows the Enterprise Zone boundary.

1.3.3 Background to the 2017 Planning Consent is provided in **Chapter 2**.

1.4 The Environmental Statement

1.4.1 This ES presents the findings of an EIA undertaken in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended), referred to as the 'EIA Regulations'. Particular provision for LDOs is made in Regulation 32 of the EIA Regulations.

1.4.2 Running concurrently with the design process, the EIA has sought to identify any likely significant environmental effects, adverse and beneficial, to identify appropriate design, construction and management measures and apply good practice to mitigate any significant adverse environmental effects. The EIA has also sought to determine the residual beneficial and adverse environmental effects remaining after mitigation measures have been incorporated.

1.5 Structure of the Environmental Statement

1.5.1 The ES comprises the following volumes:

- **Volume 1 – Main Report (this document);**
  - **Chapter 2:** describes the Site and Surrounding Area;
  - **Chapter 3**: summarises the Proposed Development;
  - **Chapter 4:** outlines the demolition and construction works and site management;
  - **Chapter 5:** provides the methodology adopted to undertake the EIA;
  - **Chapter 6:** summarises the planning and policy context;
  - **Chapters 7 to 16**: comprise the technical assessment chapters;
  - **Chapter 17:** provides an assessment of impact interactions;
  - **Chapter 18:** provides a schedule of mitigation and monitoring; and
  - **Chapter 19:** glossary of abbreviations used in the ES.
- **Volume 2 – Figures and Technical Appendices;** and
- **Non-Technical Summary.**

1.5.2 The results of the EIA are presented in this ES.

1.6 The Environmental Impact Assessment Team

1.6.1 The project team for this EIA is set out below. In accordance with Regulation 18(5)(b) of the EIA Regulations, a statement outlining the relevant expertise and qualifications of the competent experts appointed to prepare the ES is provided in **Appendix 1.6.**

EIA Coordination	Stantec
Economics	Stantec
Human Health, Social and Wellbeing	Stantec
Transport and Access	Stantec
Noise and Vibration	Stantec
Air Quality	Stantec
Biodiversity	Ecology Solutions
Water Environment	Stantec
Landscape and Visual	The Richards Partnership
Climate Change	Stantec
Cultural Heritage	Wessex Archaeology

1.7 Availability of this ES

1.7.1 Members of the public may view an electronic copy of the NTS, Volume 1: ES and Volume 2: Appendices online at https://www.sedgemoor.gov.uk/planning_online.

1.7.2 Members of the public may view a hard paper copy of the NTS, Volume 1: ES and Volume 2: Appendices (in whole or in part) at the following locations (subject to prevailing COVID-19 restrictions):

- **Sedgemoor District Council**, Bridgwater House, King Square, Bridgwater TA6 3AR – subject to the council being open (currently from 4th October 2021); or
- **The 37 Club**, 1 West Approach Road, Puriton, Bridgwater TA7 8AD – during opening hours.

1.7.3 A hard copy of the NTS, LDO and Design Guide has been provided to Puriton and Woolavington Parish Council.

1.7.4 A hard copy of the NTS is available for free upon request (please contact Sedgemoor District Council at customer.services@sedgemoor.gov.uk for further information) or via the Thisisgravity.co.uk website.

1.7.5 A hard copy of the full Environmental Statement can be made available at a cost of £450.

2 Site Description

2.1 Site History

2.1.1 The majority of the Site, formerly known as Huntspill Energy Park (HEP), received planning permission for an Energy Park in November 2017 (the '2017 Planning Consent').

2.1.2 Approximately 250 hectares (616 acres) of the HEP site was part of the former Royal Ordnance Factory (ROF) owned by BAE Systems. The ROF site was closed by BAE Systems in 2008. The Site was acquired by Gravity in 2017. Since 2017, Gravity has focused on remediation of the former ROF site, construction of the Gravity Link Road and the re-imagination the Site to facilitate a new era of clean and inclusive commercial growth which will deliver on climate action and create decent work. This has been achieved through a review of the UN Sustainable Development Goals to re-position the regeneration of the Site.

2.1.3 Prior to determination of the Huntspill Energy Park application (The 2013 HEP Application) the Site secured Enterprise Zone (EZ) status in April 2017. The EZ became live on the 1 April 2017 and runs for 25 years until 2042.

2.1.4 The development approved by the 2017 Planning Consent was defined by a Parameters Plan, which is provided at **Appendix 2.1**. This identified the scale, location and uses for those parts of the Site for which planning permission was sought as well as identifying areas safeguarded for energy generating uses, rail connection and leisure uses (which would be the subject of separate planning applications). A note setting out the Parameters established by the 2017 Planning Consent and Environmental Statement is provided at **Appendix 2.2.**

2.1.5 An ES was prepared for the 2013 HEP Application as follows:

- An Environmental Statement was submitted with the 2013 HEP Application in April 2013 (the '2013 ES');
- An Environmental Statement Update was submitted in October 2013 (the '2013 ES Update'); and
- An Environmental Statement Addendum was submitted in June 2017 (the '2017 ES Addendum').

2.1.6 The ES documented the EIA process which considered the likely significant effects of firstly, the development to be permitted by the grant of planning permission and secondly, the safeguarded areas included as part of the planning application. A realistic scenario was identified for the energy generating uses included in the safeguarded areas to allow the EIA process to assess the likely significant effects of these uses with the development which was permitted by the 2017 Planning Consent at the Site.

2.1.7 Demolition of existing structures and remediation works for the Former ROF site were subject to a separate planning application which was approved by SDC on 3 April 2012 (42/11/00017). These works were also considered in the ES prepared for the 2013 HEP Application as they were considered integral to the overall project.

2.1.8 A few buildings, including some buildings currently being used as site offices by Gravity, are still located on the Site. These will be demolished under the LDO as shown on the Existing Buildings to be Demolished Parameter Plan in **Appendix 3.1g**.

2.1.9 The majority of demolition and remediation works were completed in November 2020 (see **Section 17.2** for more details on site remediation).

2.1.10 Several elements of the 2017 Planning Consent have also been implemented as follows:

- The new road access onto the A39, referred to as the Gravity Link Road, including the Green Bridge. Construction of the road is ongoing and is scheduled to open in October 2021.
- An employment and skills plan which is part of the local labour agreement implementation has been agreed through the Gravity Link Road contractor.
- The Village Enhancement Scheme, an obligation within the Section 106 agreement, has achieved planning consent and is passing through the technical approval process with Somerset County Council in order to be delivered in accordance with the obligation. This will be in place by Autumn 2022, one year from the opening of the Gravity Link Road.
- Another obligation requiring the agreement of a Framework Local Labour Agreement (FLLA) has also been discharged with the FLLA being agreed and signed by This is Gravity Ltd and SDC in December 2020.
- Ecological works required as part of the demolition and remediation works have been undertaken, including the newt ponds constructed in the north-west corner of the Site; clearance of the majority of trees and vegetation from the development area; Great Crested Newt fencing and badger mitigation. These elements are therefore included in the ecology baseline for the EIA for the LDO. The ecology baseline is set out in detail in **Chapter 12 Biodiversity.**
- A number of pre-commencement planning conditions have also been discharged. These include those which relate to the delivery of the Gravity Link Road but also site wide conditions. At the time of writing this ES, the following site-wide conditions have been discharged:
    - Condition 12 - Remediation Works
    - Condition 13 - (Parcel Specific Contamination Assessment) (partially discharged at time of writing)
    - Condition 22 – Security Masterplan
    - Condition 23 – Operation & Maintenance Manual for Surface Water Drainage Infrastructure
    - Condition 24 – Ecological Management Plan Framework
    - Condition 29 – Strategic Design Code
    - Condition 30 – Assessment of Existing Surface Water and Effluent Disposal Infrastructure
    - Condition 31 – Strategic Surface Water Management Plan
    - Condition 33 – Ecological Reed Bed Assessment
    - Condition 34 - Ecological Mitigation and Enhancement Strategy
    - Condition 35 – Foul Drainage
    - Condition 36 – Strategic Landscape Masterplan

2.1.11 In addition, works to Junction 23 of the M5 have been completed by other parties and contributions have been made by This is Gravity Ltd to advanced transport modelling and assessment.

2.2 Site Location

2.2.1 The Site is located between the villages of Puriton and Woolavington, approximately 6km north east of Bridgwater. The Site lies approximately 2km to the east of Junction 23 of the M5 motorway. A Site Location Plan is included in **Appendix 1.1**.

2.3 Site Description

2.3.1 Gravity comprises 261.54 hectares (646.29 acres) of land, of which approximately 250 hectares (616 acres) was part of the former ROF which closed in 2008. The majority of the Site, associated with the ROF, is brownfield land hosting a primary industrial manufacturing use over the past 70 years. Land on the edges of the Site, in particular to the south and east, is currently greenfield agricultural land.

2.3.2 The Site includes four spurs from the main relatively square central Site area:

- To the north-west: which comprises the route of the former railway spur, crossing the M5 motorway, to join the Bristol-Exeter mainline railway;
- To the north, a spur runs from the central Site area to the Huntspill River and contains a large system of reed beds;
- To the east, the Site is linked to the B3141 Causeway by a narrow strip of land which is the current access track to the fishing lakes; and
- To the south, a large spur which is the route of the new Gravity Link Road connecting the central area of the Site from its south west end to the A39 and M5 Junction 23 via a route running to the east and south of the village of Puriton and linking in to the A39 immediately south of Puriton. This new access road is currently under construction due to open in October 2021.

2.3.3 An annotated site plan showing some of the Site features described in this section is provided at **Appendix 2.3.**

2.3.4 The area of the Site relating to the former ROF has been remediated to ensure that any residual contamination does not pose an unacceptable risk to the health of future occupants or the environment.

2.3.5 The Site is low lying and flat with levels across the Site varying between 4.5 to 7.3 metres above ordnance datum (AOD). The underlying geology is mapped as Langport Member, Blue Lias Formation, and Charmouth Mudstone Formation interbedded Limestone and Mudstone which are overlain, across most of the Site, by superficial Tidal Flat Deposits.

2.3.6 The local area is known as Puriton Level and is crossed by rhynes (drainage ditches). These provide the existing surface water drainage on Site, eventually discharging into the Huntspill River to the north or River Parrett to the west. Some of these rhynes pass through the Site, conveying flows from the upstream catchment, whilst the rhynes on site discharge into these.

2.3.7 Linking the Site and the Huntspill River to the north is a system of reed beds which historically provided treatment for the process effluent from the ROF. However, following the remediation of the Site, effluent is no longer discharged into the on-Site rhynes, ditches or reed beds. At its most northern point, a small, confined area of the Huntspill River National Nature Reserve (NNR) lies within the Site boundary.

2.3.8 Broadly, the Site comprises a brownfield site with areas of grasslands, woodland, scrub, hedgerows, tall ruderal, and ephemeral vegetation along with standing water, reed bed, wet and dry ditches, as well as buildings, hardstanding and significant infrastructure and utilities from the former use buried underground and subject to removal. There are also areas of disturbed / bare ground. Materials from the site are being processed and sorted for reuse.

2.3.9 There are eight Local Wildlife Sites (LWS) located, or partially located, within the Site boundary: Puriton Rhynes and Ponds; Borrow Pit, Puriton; Puriton Cowslip Field; Puriton Ash Ground; North Mead Drive Fields; Puriton Meadows and Rail Spur; Stoning Pound Field South and Stoning Pond Rhyne; and Woolavington Road and Fields North.

2.3.10 Newt ponds, constructed as mitigation for the Site remediation works, are located in the north-west corner of the Site. Other ecological mitigation works on site include Great Crested Newt fencing and badger mitigation.

2.3.11 Fishing ponds are located in the east of the Site, within the Puriton Rhynes and Ponds LWS, and these form part of the Gravity ownership, but do not fall within the Enterprise Zone designation.

2.3.12 In the south of the Site, in the area where the Gravity Link Road joins the former ROF Site, balancing ponds have been installed for the road.

2.3.13 The south east of the Site and along the southern boundary outside the ROF Site, contains a mix of scrub, hedgerows, tall ruderal and semi-improved grassland associated with the agricultural land use and relatively small fields separated by hedgerows. This area includes a remnant orchard in the south-east corner.

2.3.14 In the north-west corner of the Site, associated with the Puriton Meadows & Rail Spur LWS, are trees and shrubs and four ponds which contain Great Crested Newts.

2.3.15 There are some areas of agricultural land that are within the Site, in the north west and western parts of the Site, and along the southern boundary. Review of Natural England's Agricultural Land Classification Map South West Region identifies that this land is likely to be of Good to Moderate (Grade 3) agricultural value.

2.3.16 The Site is well served by utilities (gas, electricity, and water) and on the west edge also benefits from a (currently disused) link into the rail network, reinstatement of which is an integral part of the LDO. This will see the rail link be reopened for both passengers and freight, as shown on **Appendix 3.1b: Transport and Movement: Strategic Infrastructure Parameter Plan.**

2.3.17 There are National Grid overhead lines crossing the Site. Existing 133kV Pylons cross the Site in the south-east corner and also in the north-west corner. It should also be noted that whilst consented but not yet installed, Hinkley Point C Connection 'T' pylons (400kV) will pass along and within the eastern boundary of the Site, replacing the existing pylons in the south-east corner of the Site. The current programme of works sees these T pylons and overhead lines completed in Mid-2024.

2.3.18 A small substation, the Black Ditch 33kV Switch Station, is located in the north west of the Site, under the existing overhead line.

2.3.19 In terms of access, the Site benefits from the Gravity Link Road and the link to the B3141 Causeway as explained above. There is also an established access onto Woolavington Road in the form of a Y–shaped priority junction where the western and eastern approach roads link to form a single point of entry to the Site. Access by rail (currently disused) is gained by the spur to the west.

2.3.20 The new Gravity Link Road includes a landscape bund which has been included to provide visual and noise screening of the road to nearby residential properties. A 'green' bridge has also been installed to the south of Puriton to carry a public bridleway over the Gravity Link Road.

2.4 Environmental Context

2.4.1 The village of Puriton lies immediately to the south west of the Site and the village of Woolavington lies immediately to the south east. Beyond Puriton, approximately 2km west of the Site, lies junction 23 of the M5 motorway and the motorway runs in north-south orientation. Puriton and Woolavington contain the closest dwellings to the site.

2.4.2 As well as the M5 motorway, the closest roads are Woolavington Road which runs in an east-west direction between the villages of Woolavington and Puriton to the south of the Site, the B3141 Causeway which runs in a north south direction between the villages of East Huntspill and Woolavington to the east of the Site.

2.4.3 The Site lies within central Somerset, a low-lying area criss-crossed by a network of rhynes, running south from the Mendips to the Blackdown Hills.

2.4.4 The Huntspill River lies immediately to the north of the Site. It is essentially a large reservoir constructed to provide a water supply to the former ROF. Water levels are managed to be 3.5mAOD in the summer and 2.9mAOD in the winter.

2.4.5 Within 5km of the Site there are a number of internationally and nationally designated nature conservation sites. These are:

- Huntspill River National Nature Reserve (NNR) - located immediately to the north of the Site, with a small section (c.0.7ha) overlapping with the Site. This NNR consists of open water, lowland grassland, and small areas of woodland. It supports populations of Otter and Barn Owl. It is also designated due to its supporting and connecting habitat between the Severn Estuary Special Protection Area (SPA) located 2 km to the west of the Site and Somerset Levels SPA located 4 km to the east of the Site;

- Bridgwater Bay Site of Special Scientific Interest (SSSI) and NNR - situated approximately 2.4km to the west of the Site at its closest point. The SSSI forms part of the Severn Estuary Special Protection Area (SPA) and Ramsar Site. Part of the Bridgwater Bay SSSI also forms part of the Severn Estuary Special Area of Conservation (SAC). This area is designated for its important populations of wildfowl and waders, its coastal habitats and three annex II species of fish;

- Catcott, Edington and Chilton Moors SSSI is situated 3.1km to the east of the Site. This SSSI forms part of the Somerset Levels SPA and Ramsar Site, the latter being designated for its important assemblages of wintering wildfowl and waders including four Annex I species.

2.4.6 The Environment Agency flood maps (which do not take account of flood defences) indicate that the majority of the Site is in Flood Zone 3 (defined as land with a 1 in 100 or greater annual probability of fluvial flooding or with a 1 in 200 or greater annual probability of tidal flooding). Some small areas are located in Flood Zone 2 and 1, with medium and low probability of flooding respectively. The tidal reaches of the River Parrett pass within 5km west of the Site and tidal flood defences have been constructed along the Parrett Estuary which are effective in this location and will be supplemented by the Bridgwater Tidal Barrier, due for delivery by 2025 (target date at time of writing), as a comprehensive, long-term solution. Detailed flood modelling demonstrating low risk of inundation has been completed as part of the baseline and evidence base and it is important to note that there are no records of flood events having affected the Site since its construction.

2.4.7 The natural geology consists of silt/clay alluvium overlying interbedded mudstone and limestone of the Blue Lias. The upper part of the alluvium has been reworked due to construction of the ROF, and there are greater thicknesses of fill associated with areas of historical development and waste disposal. Localised areas of contamination are generally associated with the presence of fill materials however, as stated above, the Site has been remediated as part of a previous planning consent.

2.4.8 Groundwater levels in the alluvium and bedrock are typically 0.5 to 1.5 m below current ground level. The pattern of shallow groundwater flow is complex, but it is likely to be predominantly in the direction of the nearest surface water drain ('rhyne'). Deeper groundwater flow in bedrock is indicated to be in a northerly direction.

2.4.9 With regards to archaeology, recent investigations carried out along the route of the Gravity Link Road uncovered evidence of prehistoric activity in the form of a rectangular ditched enclosure which has been tentatively dated to the Early to Middle Bronze Age. The same investigations also uncovered several east to west orientated field boundary ditches from which a small quantity of Roman pottery was recovered and suggested the area was subject to intensive agricultural activity at the time. Additional excavations on the Site also uncovered a substantial curvilinear ditch dated by pottery to the Middle to Late Iron Age and a substantial masonry wall which through pottery finds has been dated to the Romano-British period, potentially to the 3rd or 4th century AD.

2.4.10 There are no listed buildings within the Site. The adjacent historic settlements of Puriton and Woolavington both contain churches which are medieval and Grade I Listed Buildings. Both villages also contain several Grade II Listed Buildings of more modern origin, most of which were originally farmhouses. There are two Scheduled Monuments in the wider area: Brent Knoll and Down End motte with two baileys.

2.4.11 The Site falls within three Landscape Character Areas: Levels and Moors (Levels), Lowland Hills (Polden Hills) and Levels and Moors (Clay Moors). To the south of the Site the ground begins to rise up more steeply to form the Polden Hills. From the Site centre, the Quantock Hills Area of Outstanding Natural Beauty (AONB) lie approximately 12km to the south-west of the Site and the Mendip Hills AONB approximately 14km to the north and north-east of the Site.

2.4.12 There are three solar farms located around and outside the Site boundary, to the west, north-west and north-east.

2.4.13 The Site is not within an Air Quality Management Area.

2.4.14 The site is not considered to be a sensitive area as defined by the EIA Regulations (Regulation 2).

3 The Proposed Development

3.1 Introduction and Plans

3.1.1 This chapter sets out the description of the Proposed Development, the Gravity Smart Campus and Community.

3.1.2 The Proposed Development is defined by a series of Parameter Plans to show the flexibility in the development consented by the LDO; as follows and provided in **Appendix 3.1a-g**:

- Land Uses;
- Transport and Movement: Strategic Infrastructure;
- Transport and Movement: Micromobility;
- Building Heights;
- Infrastructure and Utilities;
- Strategic Landscape; and
- Existing Buildings to be Demolished.

3.1.3 A Concept Plan has been prepared to provide a graphic representation of a scenario that could come forward within the Parameter Plans. This is provided at **Appendix 1.5**.

3.1.4 Whilst often an LDO is made prior to the commencement of any development on a Site, in this case there is already a planning consent that covers the majority of the Site. It is noted that the Gravity Link Road, approved by the 2017 Planning Consent, is due to be completed in October 2021. Gravity could implement further aspects of the 2017 Planning Consent once the LDO is made. This would be progressed through reserved matters applications and linked to existing conditions and obligations, should there be a strong market interest in those uses previously consented and in advance of the LDO being formally adopted and capable of being implemented in the timescales required.

3.1.5 On adoption, the LDO process will be implemented through a compliance process as set out within the LDO documentation, and aligned with those conditions and obligations, subject to market demands.

3.1.6 This chapter uses the Parameter Plans to describe areas of the Site.

3.2 Description of the Proposed Development

3.2.1 The description of development, is as follows:

(a) any operations or engineering works necessary to enable the development of the Site, including demolition, excavation and earthworks, the formation of compounds for the stockpiling, sorting and treatment of excavated materials, import of material to create development platforms, piling, and any other operations or engineering necessary for site mobilisation, office and worker accommodation, communications, drainage, utilities and associated environmental, construction and traffic management.

(b) the development of a smart campus including:

i. *commercial building or buildings with a total Gross External Area of up to 1,000,000m² which would sit within current Use Classes E (a)- (g), B2, B8 and sui generis floorspace uses and*

ii. *a range of buildings up to 100,000m² within Use Classes C1, C2, E (a) – (g), F, B8, including restaurants / cafes, shops, leisure, education and sui generis uses; and*

iii. *up to 750 homes in Use Class C3.*

together with associated infrastructure including restoration of the railway line for passenger and freight services, rail infrastructure including terminals, sidings and operational infrastructure and change of use of land to operational rail land, multi-modal transport interchange, energy generation, energy distribution and management infrastructure, utilities and associated buildings and infrastructure, digital infrastructure, car parking, a site wide sustainable water management system and associated green infrastructure, access roads and landscaping.

Commercial Land Use

3.2.2 The LDO will grant consent for a total of 1,000,000m² gross external area (GEA) of use classes E (a) – (g) (commercial, business and service), B2 (general industrial), B8 (storage or distribution) and Sui Generis.

3.2.3 The LDO will facilitate the creation of a minimum of 4,000, and up to approximately 7,500, jobs which will be delivered primarily from the Commercial land uses proposed within the LDO. However, jobs will also be generated through other land uses including leisure, sport, hotel, education and community uses.

3.2.4 The LDO is market-led and therefore flexibility is being sought for the commercial land use classes across the Site. There is the potential for one operator to occupy the whole of the Advanced Manufacturing part of the Site (orange hatched on the Land Uses Parameter Plan in **Appendix 3.1a**) with an Advanced Manufacturing facility. Alternatively, this part of the Site could consist of a series of smaller units with several operators.

3.2.5 Commercial use E (a) – (g) is also proposed within the green hatched area on the Land Uses Parameter Plan in **Appendix 3.1a.** Commercial land uses will come forward that will complement and sit alongside other land uses proposed within that area.

3.2.6 Commercial (employment generating) uses will be integrated within residential and leisure areas to encourage an integrated community and a live-work environment. These are the blue and purple hatched on the Land Uses Parameter Plan in **Appendix 3.1a**.

Rail Land Use

3.2.7 Rail land use relating to both passenger and freight rail, associated terminals and infrastructure is shown in the orange hatched area on the Land Uses Parameter Plan in **Appendix 3.1a**. The Parameter Plan shows a corridor for the rail infrastructure to allow for configuration of the infrastructure to accord with the requirements of an operator(s).

3.2.8 Passenger rail will enter the north west corner of the Site, and pass down the western side of the Site, terminating in a passenger station in the south west corner of the orange hatched area.

3.2.9 Freight rail will also enter the north west corner of the Site and then occupy the northern part of the orange hatched area to serve this commercial land use. It is anticipated that sidings will be provided at this location, along with associated infrastructure including mobile gantry

cranes and roads. The Building Heights Parameter Plan (**Appendix 3.1d**) shows a maximum height of 11 metres in this area to accommodate gantry cranes and associated infrastructure.

3.2.10 There is also the potential that the rail bridge over the M5 motorway will require replacement to facilitate the restoration of passenger and freight rail provision to the Site.

Sui Generis

3.2.11 Sui Generis land uses could also come forward within the orange and green hatched areas on the Land Uses Parameter Plan in **Appendix 3.1a**. An example of this use class could include an electric vehicle charging forecourt.

Sport and Leisure

3.2.12 The Proposed Development provides several opportunities for play areas, sport and recreation, including public sport, children's equipped play and teen provision. Opportunities for provision include:

- The pitches and facilities associated with the blue hatched area in the south west corner of the site, shown as blue hatched on the Land Uses Parameter Plan in **Appendix 3.1a**; and
- Leisure use such as gyms, cafes, community facilities, nursery and residential accommodation across the blue and green hatched areas.

3.2.13 The scope of the provision will of course be determined by future occupiers and provision may be driven by meeting the needs of the workforce on the campus. Opportunities to integrate and offer services to the Site and the wider community are captured in the Design Guide to enhance corporate environmental and social governance and to ensure community cohesion.

3.2.14 The blue and green hatched area also includes provision for community facilities under use class F, for example small shops, a hall or meeting place or outdoor sport and recreation use.

Education and Training

3.2.15 Education and training uses will be brought forward to respond to operator(s) demand and will be linked to the employment uses and workforce on Site, for example a campus training facility to deliver research, development and training specific to the demands of occupiers including the potential need for start-up and small business space. If demand requires, a nursery/day care facility will be provided.

3.2.16 If there is demand for early years, primary and/or secondary education as a result of the residential element of the Proposed Development, contributions to education (and health) will be through CIL, which will be reviewed and confirmed through the Compliance Form process (see Chapter 4 Mitigation Checklist in the Design Guide).

Hotel

3.2.17 The green hatched zone includes provision for a hotel, which would be provided to serve the business and operational needs of the Gravity Smart Campus and Community.

Residential and Associated Community Uses

3.2.18 Up to 750 dwellings will be provided to serve the Gravity Smart Campus and Community and to provide capacity in the housing market to support the jobs on Site and reduce impacts on

the local housing market. These homes will be tied to Gravity and will not be open market housing.

3.2.19 The homes will be designed to fit within the ethos of the smart campus, and will offer high specification accommodation that achieves net zero carbon commitments, reduced parking, and electric vehicle (EV) charging, supporting attractiveness to those who wish to adapt to a lower carbon lifestyle and achieve a better work life balance. The homes will be designed to attract and retain a skilled workforce and be targeted at Gravity's young professionals and key workers. They will therefore not compete with the open market housing market in nearby communities being of a style and nature to respond directly to the demand created by Gravity, rather than to respond to local market demand. The priority for local workforce development and sustainable connectivity will also support that the local community secures work opportunities on Site.

3.2.20 A Housing Statement for any phase of the Proposed Development which includes housing, setting out the number of dwellings, tenure/type of housing to be delivered, justification for requirement and location within the Site. This is secured through the Compliance Form process (see Chapter 4 Mitigation Checklist in the Design Guide).

3.2.21 Residential land uses are proposed within the green and purple hatched areas on the Land Uses Parameter Plan (**Appendix 3.1a**) and a balanced and appropriate mix of dwelling types and tenures will be provided to meet identified occupier needs.

3.2.22 Campus community uses are also expected to be brought forward within the green and purple hatched areas under the Use Class F. Examples are: a small shop, community space / halls, and will be provided to serve the Gravity Smart Campus and Community to meet on-site needs.

3.2.23 Wider community and locality uses are also proposed in the blue hatched area, such as for re-provision of a new 37 Club, which could be supported by other uses to support viability including a café, playground, cycle hire.

3.2.24 Sports pitches and other outdoor recreation is proposed and this will be confirmed by the future occupiers to meet workforce needs and for them to consider opportunities to open facilities to wider communities.

Energy Generation, Distribution and Management Infrastructure

3.2.25 The green hatched area on the Land Uses Parameter Plan (**Appendix 3.1a**) also includes energy generation land use. This energy generation will be designed to be compatible with surrounding uses in this area and could, for example, include roof-mounted photovoltaic solar panels and ground source heat pumps.

3.2.26 The lilac hatched area labelled 'Energy Distribution and Management Infrastructure' will include a connection into the overhead power lines via a substation to provide an energy supply to the Site, and its associated infrastructure. The Proposed Development will also include infrastructure to assist with site-wide energy management.

Landscaping and Green Infrastructure

3.2.27 The Proposed Development is underpinned by a Strategic Landscape Parameter Plan (**Appendix 3.1f**) which includes the retention, reinforcement and evolution of the existing landscape framework.

3.2.28 The Strategic Landscape Parameter Plan allocates areas on the Site for greenspace, structural tree and woodland planting, the Gravity Park (see below), placemaking nodes, landscape bund, planting and water attenuation areas. These areas are primarily located on

the edges of the Site but are substantial areas of greenspace, often exceeding 100 metres in width.

3.2.29 The Proposed Development includes a variety of pocket gardens and parks, offering outdoor recreation on the campus for the workforce and its residents and community. The land shown as blue hatched on the Land Uses Parameter Plan (**Appendix 3.1a**) located in the south west corner of the Site will accommodate buildings on only up to 50% of the zone area, with the remainder being blue and green infrastructure, a tree nursery, community uses, sports, leisure and associated infrastructure such as rail, road and cycle routes.

3.2.30 Within the 'Development zone' surrounded by a hatched line in the northern part of the area hatched orange on the Land Uses Parameter Plan, up to 50% of this zone will accommodate buildings and the remaining 50% will be associated infrastructure but will also incorporate some green infrastructure.

3.2.31 A 'Green Edge' (an east to west landscape corridor) will be provided along Woolavington Road to provide landscaping adjacent to the road and to achieve a campus environment and provide a biodiversity corridor. Several 'placemaking nodes' (Central Park, Gravity Green and Gravity Plaza) will be incorporated within the green hatched area and landscaped as appropriate. These are considered important focal points for this area that the development will respond to appropriately through landscape and built form. The location of these placemaking nodes is not fixed but illustrative locations are shown on the Strategic Landscape Parameter Plan in **Appendix 3.1f**.

3.2.32 Within the rail corridor, trees will be retained where possible, subject to the rail alignment and other necessary associated infrastructure. The existing landscape bund along the western Site boundary will be retained with existing trees also retained where possible, and with structural tree and woodland planting incorporated to the west of the bund.

3.2.33 Aa north to south biodiversity corridor will be achieved in the 400kV corridor. Landscaping within the Site will incorporate street trees and rhynes and be informed and shaped by the Design Guide. Opportunities to strengthen landscaping and improve the setting of leisure facilities such as the fishing lakes will be incorporated in the Design Guide.

3.2.34 Paths on Gravity land will be Permissive Pathways rather than Public Rights of Way. New pavements constructed on the existing highway land will become part of the highway owned and maintained by the Local Highways Authority.

Layout

3.2.35 As shown on the Land Uses Parameter Plan (**Appendix 3.1a**), the layout of the Proposed Development is designed to provide areas for commercial, energy distribution/management infrastructure, residential and associated community uses, leisure, education, hotel, energy generation, sport and leisure and community facilities.

3.2.36 Open space and biodiversity zones, including surface water attenuation features, watercourses, woodland, hedgerows and trees is also allocated on the Land Uses Parameter Plan, as well as a rail corridor for freight, passenger and associated infrastructure, and a passenger station.

Building Heights

3.2.37 Building Heights are shown on the Building Heights Parameter Plan (**Appendix 3.1d**).

3.2.38 The Building Heights Parameter Plan provides for buildings of up to 35 metres ridge height in the orange hatched area, scaling down to a maximum 23 metres ridge height in the green

hatched area, 12 metres ridge height in the purple hatched area and 11 metres ridge height in the blue hatched area.

3.2.39 Within the Advanced Manufacturing zone (shown orange hatched on the Land Uses Parameter Plan), an additional 25 metres is proposed for stacks relating to the end-use. Whilst is it most likely that an additional 10 metres is likely to be sufficient, an additional 25 metres is included as it is understood some commercial uses could require this height.

3.2.40 Flues may also be required in relation to Energy Generation land use and an additional 3 metres above adjacent building height is therefore required and shown on the Building Heights Parameter Plan. The height and number of flues associated with the Energy Generation will be determined by dispersion modelling.

3.2.41 Adjacent to the village of Puriton, in the area shaded pink on the Building Heights Parameter Plan, the ridge height is shown to be up to 11 metres, however, up to 50% of this area will accommodate buildings, and the remainder will be associated infrastructure such as green infrastructure, community uses, sports, leisure or associated infrastructure such as roads, footpaths and cycle routes.

3.2.42 With regards to finished floor levels, on the parts of the Site within the ROF fence, development will be from a finished floor level of 6.5 metres AOD. Outside the ROF fence, will be from up to 2 metres above existing ground levels, and be subject to an earthworks and foundation assessment.

Water Bodies and Drainage

3.2.43 The Site currently includes waterbodies and drainage systems. The Strategic Landscape Parameter Plan shows the existing water bodies, rhynes and Internal Drainage Board (IDB) rhynes that will be retained. These are primarily the fishing lakes on the eastern edge of the Site and the network of rhynes within the greenspace in the east, north and west parts of the Site.

3.2.44 The existing IDB rhynes in the north east and south west of the Site will remain in situ, as indicated on the Infrastructure and Utilities Parameter Plan. There is also an existing reedbed system in the north of the Site, which runs north to the Huntspill River which will also be retained.

3.2.45 In addition, there are two water attenuation areas that are to be delivered as part of the Gravity Link Road, in the south west part of the Site. A further area of water attenuation will be provided in the north of the Site, in the vicinity to the southern end of the existing reedbed system.

3.2.46 The existing rhynes, reedbeds and water bodies to be retained, as well as other rhynes to be incorporated, will be included in the site-wide Drainage Strategy which has been prepared for the LDO. This Strategy will also incorporate the use of sustainable drainage systems (SuDS) which will also allow for ecological and amenity benefits.

Operational Waste

3.2.47 Schedule 4 of the EIA Regulations states that this ES should include a description of the development, including "*an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases*".

3.2.48 An Operational Waste Management Strategy (OWMS) has been prepared for the operation phase to support the LDO and is provided at **Appendix 3.2**. This Strategy examines the relevant waste policy that needs to be considered and estimates the levels of waste expected

to be generated, in addition to proposing waste management strategies through the operational phases of the Proposed Development.

3.2.49 The Strategy seeks to minimise the negative environmental and carbon impacts associated with resource extraction, use and disposal through lifecycle analysis and circular economy thinking. Further information, including regarding the Gravity 4R's approach (Recover, Recycle, Repurpose and Reuse) can be found in the OWMS at **Appendix 3.2.**

3.2.50 Construction waste arisings will be covered in **Chapter 4**.

Access and Movement

3.2.51 Access and movement is shown on the Transport: Micromobility and Transport: Strategic Infrastructure Parameter Plans in **Appendices 3.1b & c**.

3.2.52 Flexibility is required for the internal transport, road and micromobility connections. As shown on the Parameter Plans, these locations are not fixed and will be located to respond to operator(s) requirements.

3.2.53 Within the movement hierarchy, pedestrian, cycle and other micromobility modes will take precedence. The Micromobility Parameter Plan shows a network of micromobility routes within the southern part of the Site. These will comprise:

- **Key Pedestrian/Cycle Connections** – Pedestrian and cycle connection that provide strategic connections within the Proposed Development;
- **Shared Pedestrian and Cycle Paths** – Paths that allows for simultaneous pedestrian and cycle movements. These would not include micromobility modes as set out below and are likely to be within development parcels in low key streets / spaces;
- **Micromobility Routes** – Designated routes for all forms of micromobility including cyclist, but also e-scooters, e-bikes, shared bikes and all other small, lightweight vehicles operating speeds typically lower than 15mph; and
- **Mobility Route –** Route with sustainable modes of travel; route to integrate into other street type(s); could include, for example, autonomous vehicles, electric scooters or bikes.

3.2.54 In addition to the above, the Village Enhancement Scheme is now consented and will be completed in 2022. This provides an off-road pedestrian and cycle route between the villages of Puriton and Woolavington, connecting through the Site.

3.2.55 The Transport: Strategic Infrastructure Parameter Plan shows the more strategic access and movement elements across the Site, which will comprise:

- **The Gravity Link Road** — construction of which is due to be completed in October 2021;
- **Primary Road and Main Access** – which will be from the Gravity Link Road in the south-west corner of the Site and include associated pavements / cycle paths and routes as well as drainage as part of previous planning consent;
- **Primary Road Corridor** – will be subject to centre line deviation limits of +/- 50 metres, which will accommodate HGV movements. It will also be used by other vehicles and have cycle and pedestrian connections alongside. It will include a green cross section to accommodate significant planting and drainage;

- **Secondary Access** - which could be provided from Woolavington Road along the southern boundary of the Site at several locations. This also includes the existing roads leading to the ROF site access, which will be retained;

- **Access from the east** - A further access point will be available from the B3141 Causeway to the east for pedestrian and cycle use only, and also emergency and operations use when required;

- **Indicative vehicular crossing** – Crossing points will be provided at various locations on all major routes on desire lines to ensure that active travel users are able to easily cross these routes and create a permeable network of active travel routes. Again, to respond to the required flexibility, indicative locations are shown;

- **Transport Corridor** – will be subject to centre line deviation limits of +/- 30 metres, and will be mixed use streets through the centre of the Proposed Development; they will have a higher degree of enclosure, have animated frontages where possible and public realm; and

- **Rail corridor** - Restoration of the railway line for both freight and passenger use could provide access by rail from the north-west of the Site to the mainline between Bristol and Exeter. A corridor for the rail route is provided on the Parameter Plans to enable the exact routing within the Site to be developed to respond to occupier(s) demand.

3.2.56 The Proposed Development will also include 'mobility hubs', which will allow people to switch between different modes of travel. Mobility hubs will typically include at least 2-3 modes of travel with at least one of them more strategic in nature, most likely located near to the passenger rail station, bus stop/interchange and main access to the Site in the south west corner, and will also include associated services at the hub.

Car Parking

3.2.57 Sustainable travel modes will be encouraged as much as possible and there will be a limited number of cars circulating within the Gravity Smart Campus and Community. Multi-storey car parking (MSCP) could be provided together with at-grade surface car parking within the area hatched blue on the Land Uses Parameter Plan, for people working at Gravity. These are expected to be located close to the Site entrance to limit traffic movements within the site and prioritise internal movement by sustainable modes. Temporary surface car parking may be provided prior to the availability of the MSCPs.

3.2.58 Car parking for people living at the Gravity Smart Campus and Community will be provided at a rate of no more than one space per dwelling with managed additional parking provided for visitors accessing the onsite facilities.

3.2.59 Heavy Goods Vehicle (HGV) parking associated with the core employment uses could be provided within the orange hatched area on the Land Uses Parameter Plan.

3.2.60 Electrical vehicle charging will be provided to encourage the transition to electric vehicles.

Sustainability

3.2.61 Sustainability is at the heart of the design and development of Gravity. Ambitions to achieve regeneration and place transformation are set out in the Clean and Inclusive Growth Strategy which was developed taking into account a full review of the UN Sustainable Development Goals. The review resulted in the determination of key themes and priorities to shape the approach to the LDO.

3.2.62 Gravity will host and support companies who are committed to making a difference socially, economically, and environmentally, driving the UK's transition to a cleaner economy.

3.2.63 Specific measures relating to sustainability are detailed further in the technical **Chapters 7 to 16**.

3.3 Strategies supporting the Proposed Development

3.3.1 There are a number of Strategies that shape the ambition and approach to the LDO including the Gravity Clean and Inclusive Growth Strategy and Environmental, Social & Governance (ESG) Policy, and technical documents which inform the design and implementation of the proposed development including the Digital Vision, an Energy Strategy, a Water Strategy and a Utilities Strategy.

3.3.2 The Clean and Inclusive Growth Strategy, available at www.thisisgravity.co.uk, creates a route to delivering clean and inclusive economic growth at Gravity, creating a smart campus and integrated community that supports the 4th Industrial Revolution. Key themes are established, from an evaluation of the UN Sustainable Development Goals relevant to Gravity, with over 50 priorities being defined to help translate ambition into strategy and delivery. The Gravity ESG Policy, available at www.thisisgravity.co.uk, flows from this and links to a monitoring and reporting regime to communicate progress and outcomes. Early work on place shaping will seek to enable an integrated live, work, play community with recognition of wellbeing and mental wealth as a valuable asset, and to enhance self-awareness within the future workforce.

3.3.3 The Digital Vision, available at www.thisisgravity.co.uk, creates a route map to underpin transformation and the step change needed to attract high value occupiers and invest in infrastructure fit for the future, aligned with national and local policy and strategy objectives to transform the way we work and operate.

3.3.4 The Energy Strategy, submitted with the LDO, demonstrates that adequate energy provision and connectivity is planned to support the delivery of Gravity and the scenarios to be set out and consented within the Gravity LDO. The Energy Strategy includes details on associated phasing, management and implementation plans which cover any transitionary and short-term solutions with suggested five-year time horizons, considering potential uses / demands on Site and evolving solutions without being technology specific.

3.3.5 The Proposed Development will also include a Gravity Skills Charter, submitted with the LDO, to foster social value during construction and in operation, through local employment opportunities, local training and workforce development, improving resilience, young people's engagement and the creation of pathways to work, apprenticeships, and improved choices to enable local connectivity from the community to the opportunities provided by Gravity.

3.3.6 Similarly, a Gravity Business Charter, submitted with the LDO, will seek to stimulate business and supply chain opportunities.

3.3.7 A Gravity Locality Investment Plan, submitted with the LDO, has also been developed as part of the enterprise zone implementation plan to plan phasing of infrastructure and priorities for investment of business rates to enable effective implementation and site mobilisation to ensure delivery as a priority, to maximise the benefits that Enterprise Zone status can delivery for the locality.

3.4 Embedded Mitigation

3.4.1 Embedded mitigation has been provided in the technical **Chapters 7 to 16** to reduce environmental effects. This is secured through the Mitigation Checklist in Chapter 4 of the

Design Guide. Some of the key embedded mitigation which forms part of the Proposed Development is:

- A Framework Demolition and Construction Environmental Management Plan (FDCEMP) to mitigate effects during the demolition and construction phase;
- All flood vulnerable development will be located outside of the modelled flood extents, as inherent mitigation against tidal flooding;
- A surface water management strategy to control outflows to receiving systems and manage surface water sustainably within the Site;
- Vegetation retention, tallest built form located in the central part of the Site, making the most of existing landscape features, Woolavington and Puriton Edge, Woolavington Road green edge, landscape buffer, structural tree planting, community open spaces, east-west landscape corridor; and
- A pre-commencement programme of trial trenching will be undertaken to further establish the presence and significance of any as yet unknown archaeological remains.

3.5 Consideration of Alternatives

Overview

3.5.1 Regulation 18(3)(d) of the EIA Regulations requires an ES to include "a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment". This is expanded at paragraph 2 of Schedule 4 of the EIA Regulations which requires an ES to include “a description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects”.

3.5.2 This legal requirement is expressed in very general and high-level terms, requiring only the inclusion of “reasonable” alternatives and an "indication" of "main" reasons. Although a full description of alternatives and a full assessment of their likely environmental effects are not required, sufficient detail should be provided to allow for a meaningful comparison between the alternatives and the Proposed Development.

3.5.3 It is a matter for the developer to decide whether to consider alternatives and which alternatives it intends to consider. The EIA Regulations do not expressly require that an applicant considers alternatives, although it is widely encouraged at the policy level, both European and domestic, and is an implicit feature of the EIA Regulations.

3.5.4 The consideration of alternatives in this ES complies with the requirement for the inclusion of reasonable alternatives and has regard to the guidance in the PPG on EIA which states (similarly to the EIA Regulations) *“Where alternative approaches to development have been considered, the Environmental Statement should include a description of the reasonable alternatives studied which are relevant to the Proposed Development and its specific characteristics and provide an indication of the main reasons for the choice made, including a comparison of environmental effects”.*

3.5.5 The following provides an outline of the reasonable alternatives considered in relation to the Proposed Development and the main reasons for choosing the Proposed Development in preference to them, as well as a comparison of environmental effects.

3.5.6 It should be noted that, given the flexibility being sought through this LDO, information provided within this 'Consideration of Alternatives' section is proportionate to the level of detail on the Parameter Plans.

No Development

3.5.7 Bridgwater Vision sets out a long-term strategy for the town until 2060, and identifies the Site as a transformational opportunity for the area. This is important to provide opportunities for permanent employment beyond the temporary construction jobs at Hinkley Point C and to respond to the economic restructuring in the area and the priorities to address and reduce out commuting, and to increase the proportion of higher value employment.

3.5.8 The Council's Corporate Strategy 2020 – 2021 identifies Growth & Infrastructure as one of the three priority themes to deliver their corporate objectives. In particular, the priority to grow the economy of Sedgemoor will be achieved by ensuring supply of employment land, encouraging businesses to locate to Sedgemoor and working to increase the skill level of the workforce.

3.5.9 The Council's Economic Development Strategy 2020 – 2050 explains that by 2050 Sedgemoor will be a clean growth and energy link on the M5 "Innovation Highway" which connects an environmental, health and marine digital hub to the south and a high-tech transport, cybersecurity, health, and data-driven hub to the north. The Strategy identifies the prominence of the Gravity site as the key project within Sedgemoor District and states that it offers further long-term opportunity for the transformation of Sedgemoor's economy. Importantly the Strategy also notes that Gravity will create an inclusive environment.

3.5.10 The Sedgemoor Core Strategy was adopted in September 2011 and, although now superseded by the new Local Plan, included an allocation for an 'Energy Park' on the Gravity site (Policy P1 Bridgwater), with priority given to industrial uses including renewable or low carbon energy generation and other energy-related or complementary uses, including green technologies, supply components and support services. In order to elaborate and provide greater detail on policies within the Core Strategy relating to the 'Energy Park', SDC also adopted the Puriton Energy Park SPD in March 2012.

3.5.11 Prior to determination of the Huntspill Energy Park application (The 2013 HEP Application) the full 616 acre Site secured Enterprise Zone (EZ) status in April 2017. The EZ came into existence on the 1 April 2017 and runs for 25 years until 2042. As such the priority and importance of enterprise zones are embedded as growth hubs are embedded within the Heart of the South West Local Enterprise Partnerships (HotSWLEP) policies and plans.

3.5.12 Planning permission was granted for the HEP in 2017 (The 2017 Planning Consent) therefore given there is already a planning permission in place to develop the Site, no development is not a reasonable alternative. No development would fail to deliver the agreed ambition of the enterprise zone to attract international investment, in conjunction with the councils and the HotSWLEP.

3.5.13 In addition, it does not accord with Sedgemoor District Council's desire to see the site developed, nor does it accord with policy and would not help to meet the employment and wider economic needs of the area. In addition, there is a strong driver to accelerate and transform the economy through enabling a smart campus whilst simultaneously creating a new commercial environment geared to cutting greenhouse gas emissions, creating good jobs, integrating low carbon homes and realising positive social outcomes for local communities.

Alternative Sites

3.5.14 As noted above, the Site is highlighted in several Local Development Plan documents and is within the control of the Developer, therefore no other sites have been considered.

3.5.15 In addition, the 2013 HEP Application made use of a brownfield site, which has subsequently been remediated through the Remediation Planning Consent and a new access provided by way of the Gravity Link Road. Use of an alternative site would not have led to the former ROF site being remediated and would not capture the potential boost to the local and national economy through bringing the Site back into beneficial use.

3.5.16 The Site has been remediated to a commercial use standard and it would be unlikely that it could be economically further remediated to be returned to a more natural state, therefore using this Site for the Proposed Development is a logical option that can be taken forward by the Developer and in accordance with policy.

Alternative Consenting Mechanisms

3.5.17 Consideration has been made to progressing a series of outline and reserved matters applications for development at the Site.

3.5.18 However, the following limitations have been identified for the 2017 Planning Consent:

- The approach was based on more traditional planning and economic development rather than a more proactive and agile planning strategy that would offer a simplified planning regime, to attractive international business, that would be needed to align with the EZ status;
- It sets out an approach that would secure a large-scale industrial park underpinned by fossil fuels that does not align with the Clean and Inclusive Growth agenda, the Government's Industrial Strategy or the response to climate change;
- The masterplan attached to the consent seeks to secure a traditional plot based approach rather than a cohesive campus;
- The scale and range of uses is not consistent with the current global market needs in a post Brexit context, specifically in terms of accommodating large scale advanced manufacturing;
- A significant part of the site is only safeguarded for development and does not benefit from consent;
- Land safeguarded for energy generation has not attracted market interest and instead the energy strategy for the site in partnership with E.ON will focus on a low carbon site wide solution that does not require large allocations of land for generation;
- As such there is potential for the delivery of a greater development area and the potential for securing more and higher value jobs and businesses;
- The extent of the planning consent does not align with the extent of the full Enterprise Zone. The consent does not provide a simplified form of planning which could enable business rates generation and retention; and
- No rail restoration was included previously, and no provision made to include homes to facilitate more sustainable lifestyle choices.

3.5.19 As a consequence, Gravity recommended the preparation of an LDO on the basis that their function is to accelerate delivery and attract international tenants through a simplified and agile planning process which can provide greater flexibility and in turn be proactive in securing investment and maximising economic benefits. SDC subsequently agreed through an Executive decision in July 2020 that Gravity will be taken forward through an LDO.

3.5.20 LDOs are a positive planning tool and a marketing tool for the locality and site. They create certainty in the planning environment for investors and potential occupiers, and thereby make inward investment more attractive. They embody a fundamental shift on the part of local authorities from waiting for the market to come to them with a proposal, to initiating development by granting permission for the kind of development that they want to come forward on a site.

3.5.21 In addition, the function of an LDO is to accelerate delivery. They are designed to enable the implementation of a local solution by simplifying planning and providing local authorities with a flexible tool to address particular circumstances.

3.5.22 In comparison to the outline and reserved matters approach, an LDO will save time and reduce the administrative planning requirements for SDC. It will also enable the economic benefits of the Site to be expedited.

3.5.23 The preparation of this ES for the LDO has allowed for likely significant effects for the Proposed Development as a whole to be considered and appropriate mitigation for the whole Proposed Development to be identified.

Alternative Forms of Development

Introduction

3.5.24 This section sets out the alternatives considered for the Proposed Development as the design has progressed, in relation to types and quantum of uses. It also outlines key design considerations in relation to the Parameter Plans. The key alternatives considered are outlined, and explanations are provided in relation to decisions made along with a comparison of environmental effects.

3.5.25 Alternatives and flexibility within this mix were considered in relation to commercial (employment), education and residential provision. These are further explained below.

3.5.26 All other potential uses, such as leisure, hotel, sport, community facilities, will be brought forward in response to demand arising from the occupier(s).

3.5.27 The 2017 Planning Consent included land safeguarded for energy generating uses, leisure use and the re-instatement of a rail head. The leisure uses and rail-head reinstatement are retained and refined in the LDO, however the energy generating uses have been removed as the technology proposed at that time (Energy from Waste, a Peaking Plant and a Biomass Combined Heat and Power facility) is no longer compatible with Gravity's Clean and Inclusive Growth Strategy.

3.5.28 The Parameter Plans have been developed to respond to emerging environmental and other constraints and opportunities associated with the Site. They show how the largest facility that has been identified, through market enquiries, can be accommodated on the Site. This therefore ensures that the greatest potential environmental effects are considered within the ES. It is considered that the largest facility will give rise to the greatest environmental effects, including for the following reasons:

- The tallest building will have the greatest Zone of Theoretical Visual Influence, which has been assessed in the landscape and **Chapter 14: Landscape and Visual**;
- The largest footprint will have the greatest impact on the existing Site drainage network, which has been assessed in **Chapter 13 Water Environment**;
- Whilst the largest building may not necessarily generate the greatest number of jobs (and therefore people movements), the land use mix has sought to identify the greatest

number of jobs arising, assessed in **Chapter 7 Economics** and **Chapter 8 Health, Social and Wellbeing.**

LDO Boundary

3.5.29 The 2013 planning application boundary comprised a total area of 219.5 ha (542 acres) including the access road area which lies outside of the Enterprise Zone area.

3.5.30 The Enterprise Zone boundary comprises an area of 249.4 ha (616 acres) and the overall LDO area, including all land in the control of This is Gravity Ltd, totals 263 ha (650 acres). This includes the additional of the Gravity Link Road and fishing lakes for placemaking, and also land for reinstatement of the rail line.

3.5.31 The LDO boundary is therefore wider than the EZ boundary. The additional land is shown by the blue, green and purple hatched area on the Land Uses Parameter Plan in **Appendix 3.1a.** Previous baseline information has been updated to include all land within the LDO boundary.

3.5.32 The additional environmental effects of extending the Site area have been assessed in the ES. These are primarily linked to loss of trees and hedgerows, bringing development closer to the existing settlements of Puriton and Woolavington, a minor adverse effect on the setting of the Grade II listed Manor Farmhouse in Puriton and a potential impact on buried archaeological features. None of these effects have been identified within the ES as being significant.

3.5.33 However, the inclusion of this land will also enable the co-location of additional land uses including sports and leisure, residential, education and community uses alongside the commercial uses, to provide an integrated Smart Campus.

Land Use

Commercial

3.5.34 As a result of the 2017 Consent, more than 4,000 jobs would be provided. The Proposed Development will generate up to 7,500 jobs which reflects the transition to a 24/7 smart campus with potentially three shift patterns per day.

3.5.35 The LDO is market-led and therefore flexibility is being sought for the employment land use classes and building heights across the Site. There is the potential for one end user to occupy the whole of the hatched yellow part shown on the Land Uses Parameter Plan in **Appendix 3.1a**, alternatively this part of the Site could consist of a series of smaller units operated by different occupiers.

3.5.36 The broad location of the commercial land use within the Site has remained consistent with where it was proposed to be located in the 2017 Planning Consent: on the site of the former ROF, on what is now the central and northern part of the Site, adjacent to the rail link. Commercial land use in this area is likely to be larger scale, such as an Advanced Manufacturing (AM) facility.

3.5.37 Recognising the need for a market-led approach, an AM Study was undertaken in Autumn 2020, which looked at large scale AM facilities worldwide, such as gigafactories, electric vehicle and alternative fuel assembly plants, additive manufacturing, agritech, verticulture, hydroponics and data centres. This Study started to draw out the international demand and requirements for larger AM units, which started to inform the team's understanding of the types of occupier the Site might need to accommodate to achieve its potential as a UK and international leading clean growth smart campus.

3.5.38 The AM study was presented to the Gravity Delivery Group and the slides are available on the Thisisgravity.co.uk website.

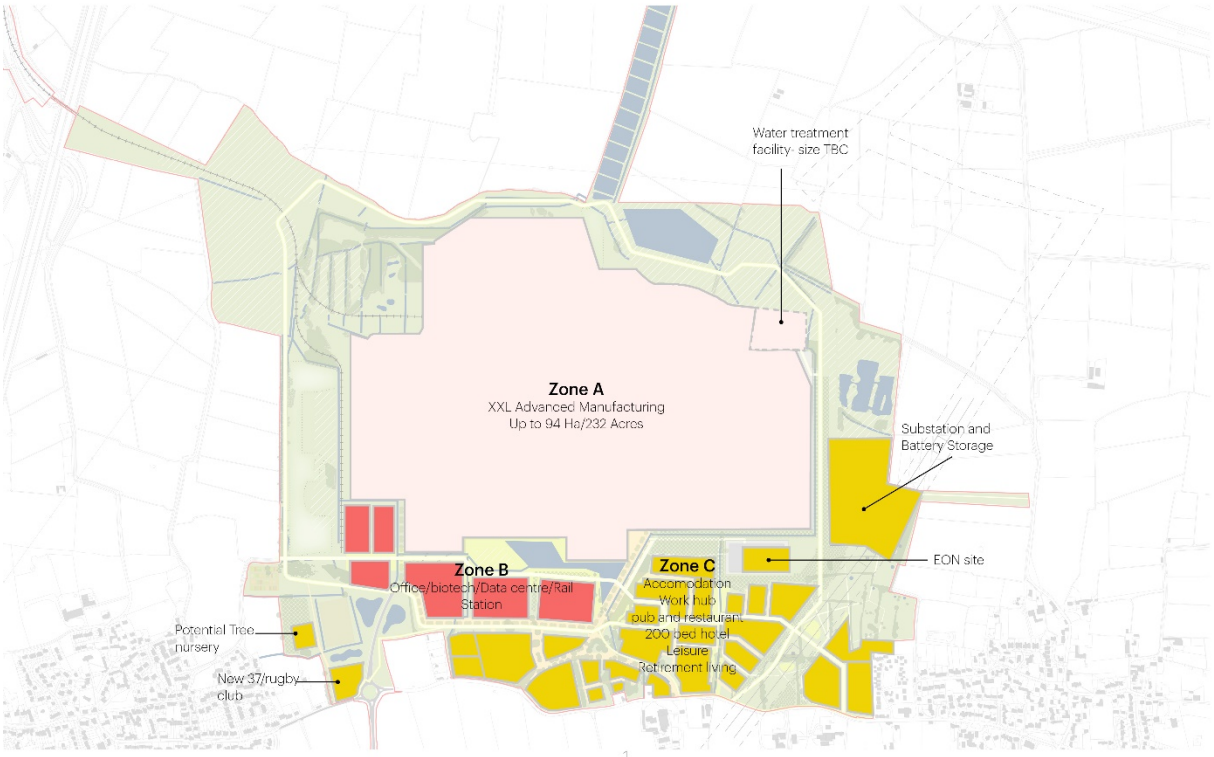
3.5.39 This AM study also identified maximum build footprint and building height for the environmental assessment for the LDO.

3.5.40 Examples of precedents reviewed to help determine the largest plot sizes include:

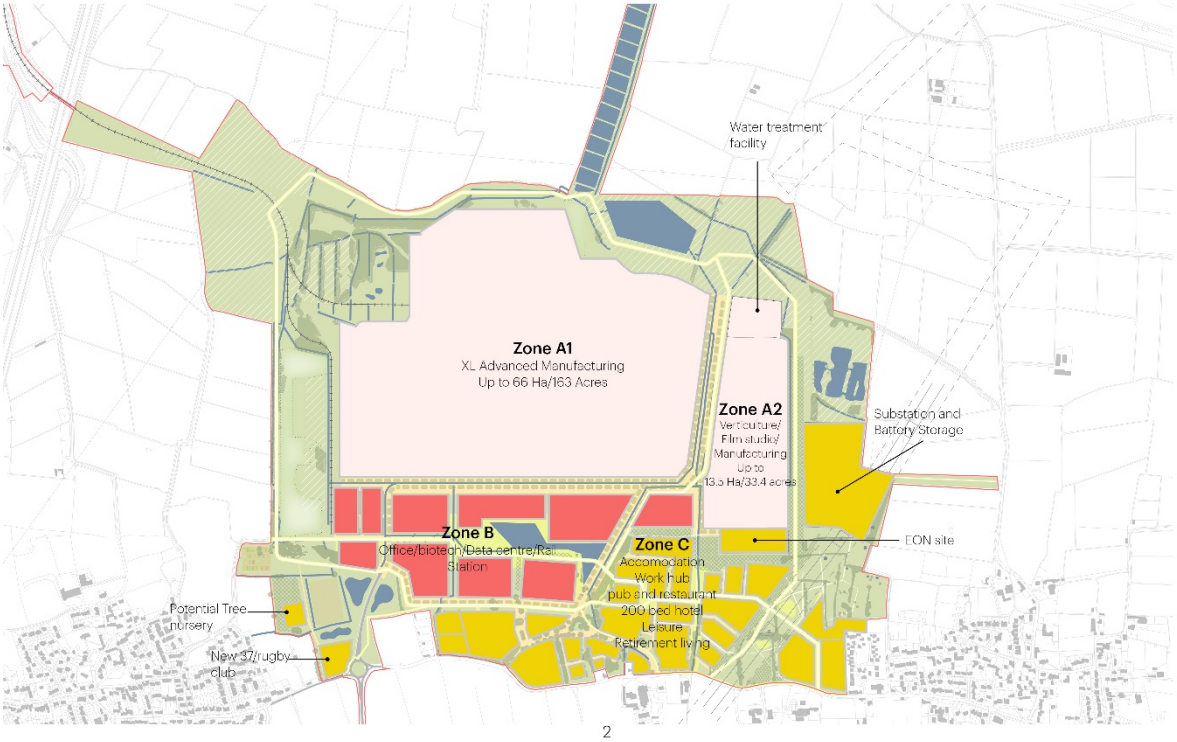
- Tesla Gigafactory 3, China, 4.5m sqft building footprint, 3 storeys, 30m total height;
- Tesla Gigafactory 1, Nevada, 1.9m sqft building footprint, 3 storeys, 30m total height; and
- Tesla Gigafactory 4, Berlin (Ph1), 3.2m sqft building footprint, 3 storeys, 24.3m total height.

3.5.41 Different land use scenarios were considered, based on current market interest. A range of occupier requirements ranging from a known Gigafactory requirement through to a mix of smaller units which reflected known market requirements at the time were considered. This was refined down to three scenarios, as follows:

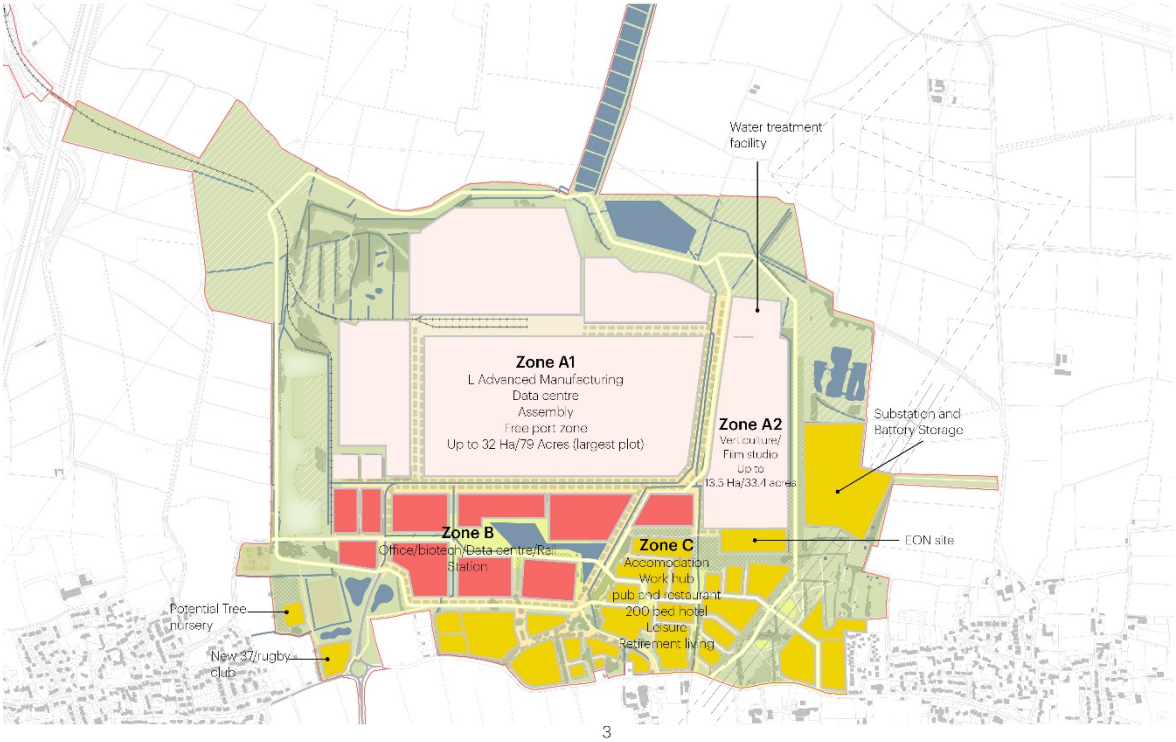
- **Scenario 1** - based around securing a very large AM facility that takes up the majority of the Site's commercial development area.



- **Scenario 2** - based around securing a large AM facility that takes up a large proportion of the commercial area in the northern part of the Site.



- **Scenario 3** - based around securing multiple companies that require large plots of up to c32 Ha in size.



3.5.42 This scenario testing has focussed on market enquiries from several potential end-users. As set out above, this has ranged from one very large AM facility that occupies the whole Site, to several separate plots accommodating different end-users.

3.5.43 All scenarios were driven by a response to context, for example positioning the smaller and lower buildings to the southern edge where there is greater proximity to the community and locating larger AM facilities in the central and northern part of the site. All scenarios sought to work with and positively integrate the site landscape and achieve connectivity with adjacent communities.

3.5.44 A major inquiry for a large-scale AM plant was received in March 2021, which highlighted the sorts of use that the Site might need to accommodate and provided further detailed market intelligence on likely occupier requirements. Subsequently a capacity study was prepared to show how this potential occupier could be accommodated on the Site. This 'real world' enquiry highlighted the scale of what LDO and scheme parameters assessed under the EIA needed to be capable of accommodating.

3.5.45 It was concluded, following further work on the implications of meeting this potential occupier's requirements, that preparation of the LDO would proceed on the basis of a single development scenario with parameters developed to accommodate a large AM facility reflecting market demands and requirements in the context of the UK transition to a clean growth future (Scenario 1). Other smaller scale scenarios (broadly represented by Scenarios 2 and 3) would be possible within the development envelope established by the parameters for this scale of use.

3.5.46 The decision to progress with a large flexible plot meant that some site features such as the Local Wildlife Sites (LWS) towards the centre of the Site and to the northern and eastern edge would preclude occupiers that were commensurate with the Gravity ambition and market demand, for example a large battery or EV plant. In addition, it was concluded that a drainage

solution was required that would allow for a large, unencumbered AM facility, so parameters were developed to allow through-drainage to circumnavigate the main plot. **Biodiversity is assessed in Chapter 12** and **Water Environment in Chapter 13**.

3.5.47 Within the southern part of the Site (hatched green on the Land Uses Parameter Plan in **Appendix 3.1a**), commercial land uses will come forward through market demand, within the parameters set out on the Parameter Plans. This part of the Site is an interconnected series of plots with a mix of commercial, education, energy generation, amenity and accommodation space, creating a hub of activity to maximise opportunities for interaction, collaboration and learning. Commercial land use within this part of the Site will be designed to be in keeping with the scale, form and use of surrounding proposed buildings and uses.

3.5.48 During the development of these plans, energy infrastructure was added (see below under 'energy infrastructure').

3.5.49 The indicative employment mix which has been used to test the Proposed Development in this ES has been informed by commercial advice on the current market; enquiries by potential occupiers (as seen on the plans above) and the aspirations of the LDO.

3.5.50 It is considered that, overall, land take will be similar across the three scenarios resulting in comparable environmental effects with regards to land take. However, Scenario 1 could lead to the greatest landscape and visual effects given that the very large AM facility would be very large both in height and massing. Scenario 1 would also require the greatest modification to the existing drainage layout, however, does not result in significant environmental effects.

3.5.51 All three scenarios allow for the retention of existing trees and greenspace on the Site boundaries, as well as enhancement of these areas. The ability of the landscaping to mitigate significant landscape and visual effects of the proposed buildings would vary depending on the scale of buildings.

3.5.52 The generation of 7,500 jobs will bring many people to the Site. This is mitigated by the potential for onsite accommodation to be provided, however this will still result in an increased trip generation compared with the extant consent. This is expected to be comparable across the 3 scenarios.

Education and Training

3.5.53 Education and training provision will be introduced on Site to respond to demand and will be linked to the employment uses of the Site. For example, campus training facilities and centres will be constructed and used to deliver the skills required to upskill the local workforce for careers in AM, in collaboration with local higher education providers.

3.5.54 Notwithstanding the flexibility sought through the LDO, no significant alternatives to this land use have been considered through the design development.

Residential

3.5.55 The 2017 Planning Consent and early design iterations for the Proposed Development did not include a residential element. However, the Proposed Development now includes the provision of up to 750 dwellings to serve (and thus be tied to) Gravity and these will not take on the characteristics of typical open market housing. The residential element is proposed to be provided within the purple hatched area shown on the Land Uses Parameter Plan in **Appendix 3.1a**.

3.5.56 The provision of up to 1,300 dwellings was considered in the early design stages. The rationale for the introduction of dwellings to the Proposed Development and the reasons why the numbers have been reduced to 750 during the design process and the location within the Site of the residential element are as follows:

- On-site accommodation is considered necessary to be able to attract the most forward-thinking companies to the Site. The intention is to provide a step change in terms of the level of housing quality in the surrounding area, as well as introducing a wide range of housing typologies that are specifically tailored towards the Site's requirements. Accommodation will be seamlessly integrated into the Smart Campus and a critical mass of people residing on-site will ensure a level of vibrancy that will help to sustain social infrastructure.

- Accommodation on site will support the key principle of retaining employees within Sedgemoor, allowing them to live sustainably, living and working in close proximity to one another which will, in turn, reduce trips on the highway network.

- The number of dwellings has been refined during the design development as the housing mix has been better refined and broadened to include lower density executive homes and smaller units to support employees in the early stages of their career. The total anticipated area for accommodation has also reduced to allow for a greater proportion of leisure and community at the south of the Site.

- Dwellings are located in the southern part of the Site to ensure residents are located within the area with most activity, near to the mobility route to ensure the dwellings are within an easy commute to the places of work, as well as being near to amenity and facilities such as shops, restaurants and leisure uses on and off site.

- The location of dwellings in the southern part of the Site was also considered most appropriate as it is in proximity to existing residential properties in the adjacent villages, albeit retaining a buffer to avoid coalescence. This has the added effect of embedding a lower density scale as a buffer between the existing residents of the adjacent villages and the commercial and manufacturing premises proposed further to the north.

3.5.57 Homes will be purpose designed to meet the needs of the workforce and will embrace Modern Methods of Construction (MMC) and drive a new standard for placemaking.

3.5.58 This residential element is assessed within this ES. Additional traffic arising as a result of residential land use is assessed within the Transport Assessment and appropriate mitigation has been identified, including mobility hubs. Given that the residential element is being designed and provided to target workers at Gravity and will be brought forward on the basis of occupier requirements, it is anticipated that the majority of trips will be within the Site. Had the assessed housing been typical open market housing, this would have introduced a greater number of trips, with its associated noise and air quality impacts.

3.5.59 Therefore, there will be a lesser environmental effect of 750 dwellings as compared to 1,300 dwellings, through a reduced number of trips and through co-habitation of employees with non-site employees and their families. The decision to provide dwellings of a character and typology targeted to serve Gravity and the needs of its occupiers, rather than typical open market housing, will further reduce trip generation. In addition, 750 dwellings as compared to 1,300 will result in a reduced demand on local services.

Community and local centres

3.5.60 The core purpose of the Smart Campus is to provide large scale AM. Given the rail access to the north and the large-scale nature of the buildings located to the north of the Site, and the likely need for security for the commercial land uses, the community land uses were located on the southern part of the Site from the outset.

3.5.61 Community uses have been deliberately located close to existing villages to ensure inclusivity. These facilities also provide a positive 'front door' appeal to the Proposed Development and the sensitive nature of the south of the Site lends itself to these less industrial land uses.

Community uses will be designed to sit alongside leisure uses in the south of the Site to start to build up a compelling offer for visitors and residents.

3.5.62 Community provision was not considered suitable further north into the Site as it would diminish flexibility for AM and would feel peripheral in relation to the existing villages.

3.5.63 Location of the community uses in the south of the Site also enables them to be integrated fully with the passenger station, the residential areas, the Village Enhancement Scheme route (connecting the two villages through the Site) and other sport, leisure, education and hotel uses that are also proposed in this southern part of the Site. Alternative locations within the Site were not considered for this land use given these facts and local characteristics.

3.5.64 If demand requires, a nursery/day care facility and potentially other educational facilities will be provided for use by the occupiers and workforce on Site. For the same reasons as set out above for community uses, these will also be located in the southern part of the Site and other alternative locations within the Site were not considered for this land use.

Energy infrastructure

3.5.65 The design process has identified an important site for energy infrastructure beneath and adjacent to the 400kV powerlines on the eastern edge of the Site as additional connectivity and a substation is required for the Proposed Development. This was included in response to Western Power Distribution (WPD) advice regarding the size of the substation required to service the Site and a requirement for battery storage.

3.5.66 It is located partly under the 400kV pylon corridor which helps to make efficient use of land, as any build development is restricted under powerlines for health and safety. This location has the additional benefit of being in a peripheral location away from the main body of the Site.

3.5.67 This location under the powerlines does correspond to Great Crested Newt habitat, however the need for proximity to the powerlines necessitated this location for this vital piece of infrastructure. Therefore, suitable mitigation for Great Crested Newts will be provided (see **Chapter 12 Biodiversity**).

3.5.68 For these reasons, other alternative locations within the Site were not considered for this land use.

3.5.69 The 2017 Consent included land safeguarded for energy generating uses. There is no longer market interest in delivering these safeguarded areas, nor is this compatible with Gravity's Clean and Inclusive Growth Strategy. The Energy Strategy for Gravity enshrines a definitive move away from fossil fuels and therefore a reduction in emissions that could contribute to climate change and therefore this type of energy generation was not considered to be an appropriate alternative form of development.

Railway line

3.5.70 The reintroduction of the railhead is considered important in creating sustainable transport choice and to reduce the reliance on road-based transport into the Site. It was safeguarded within the 2017 Planning Application along the western edge as shown on the Land Uses Parameter Plan (**Appendix 3.1a**), albeit as a combined freight/passenger spur.

3.5.71 The Proposed Development comprises a split between the passenger and freight spurs so that the passenger spur retains the western alignment and enjoys close proximity to Puriton and the smart community in the south of the Site. The Proposed Development also includes the potential for an additional spur to connect into the AM zone in the north of the Site. This allows the freight to be repositioned away from the sensitive south of the Site and it increases the marketability of the AM plot.

3.5.72 A number of rail alignments within the Site were considered during the design development process in discussion with Network Rail to ensure that corridors were in compliance with NR track standards. These were limited within the Site given the route connecting into the existing network is already defined and the bridge over the M5 is also in place. As such, the rail corridor, as shown on the Land Uses Parameter Plan (**Appendix 3.1a**), has been retained to ensure that there is sufficient scale and flexibility to accommodate both occupier and Network Rail requirements. The plan below shows one potential configuration:

Other design aspects

Building Heights

3.5.73 Consideration of the distribution of density and building heights has progressed through the design process in collaboration with the project landscape architects and masterplanners.

3.5.74 Market facing appraisal and direct potential market enquiries have demonstrated the broad range of building heights that could be required at Gravity. The AM Study found that buildings can be up to 30m high, but that also some industries can require up to 40m clearance. Building heights have also been carefully considered to respond to site levels, proximity to existing settlements and intended uses.

3.5.75 A strategy that allowed for the tallest buildings at the front of the Site would have an overbearing impact on the surrounding villages and would increase the risk of perceived coalescence and was therefore discarded. Concerns around coalescence of the Site with the adjacent villages of Puriton and Woolavington has been raised through public consultation.

3.5.76 This overall approach to scaling down height from north to south within the Site has also arisen from landscape and visual appraisal work concluding that the northern part of the Site can more readily accommodate greater height, due to greater distance from the nearby communities and the previous land use as the ROF. Lower height towards the south of the Site and in particular fronting onto Woolavington Road is more in keeping with the scale of existing development in the nearby communities and giving a sense of community scale development in the southern part of the Site.

3.5.77 The proposed building heights in the south of the Site accord with the principles established in the Puriton Energy Park SPD (2012) of lower building heights close to Puriton and Woolavington. The south of the Site is also generally higher at ground level and is also locally prominent and allowance for taller buildings generally increases as the Site falls to the north.

3.5.78 The Building Heights Parameter Plan (**Appendix 3.1d**) therefore provides for buildings of up to 35 metres ridge height in the northern part of the Site , scaling down through a maximum 23 metres ridge height in the more central area and down to 12, 11 and 9 metres progressively to the south of the Site.

3.5.79 The maximum 35m ridge height for AM has resulted from market facing appraisal and direct potential end-user enquiries.

3.5.80 Within the part of the Site that is proposed to have buildings up to 35m, an additional 10 metres on top of the 35m is proposed for stacks. An additional 3 metres above adjacent building height is proposed for any Energy Generation use across the Site. No alternatives have been considered in relation to stack/flue heights as these are typical height requirements for the land use types shown on the Land Uses Parameter Plan.

3.5.81 The height and number of flues associated with Energy Generation will be determined by dispersion modelling (this is typically 3m higher than adjacent building height).

3.5.82 Adjacent to the village of Puriton, the Building Heights Parameter Plan shows the ridge height to be up to 11 metres, however, only up to 50% of the zone will accommodate buildings, and the remainder will be associated infrastructure such as green infrastructure, community uses, sports, leisure or associated infrastructure such as roads, footpaths and cycle routes.

3.5.83 The distribution of height and massing across the Site is considered to create a legible separation of the zones whilst providing an integral Smart Campus. This distribution has also been developed to reflect the importance of sunlight and daylight into key areas, in particular dwellings and play spaces.

3.5.84 Alternatives considered include the provision of taller buildings in some parts of the Site, but it was considered that a maximum should be set (as above) which was considered appropriate to remain in keeping with existing built development on the southern settlement edge of Puriton and Woolavington.

Biodiversity

3.5.85 Biodiversity Net Gain has been a principal design driver for the Proposed Development and is a key element in ensuring that Gravity alleviates its impacts on biodiversity and provides social and environmental benefit to existing and future occupiers.

3.5.86 The Strategic Landscape Parameter Plan (**Appendix 3.1f**) has been driven by the market facing approach to the LDO whilst seeking to integrate site assets and achieve strong placemaking.

3.5.87 The approach taken is pragmatic and has focused on retaining, where possible, the key features of the Site's landscape character including waterbodies, trees and rhynes. Habitat creation and enhancement, including structural tree and woodland planting are among a number of design considerations that are embedded in the Design Guide.

3.5.88 A 'Green Edge' will be provided along Woolavington Road to reflect a campus feel and placemaking nodes (Central Park, Gravity Green and Gravity Plaza) will be incorporated within the area shown green hatched on the Land Uses Parameter Plan and landscaped as appropriate. Within the area shown blue hatched on the Land Uses Parameter Plan, 50% will be blue and green infrastructure, community uses, sports, leisure and associated infrastructure.

3.5.89 Within the rail corridor, trees will be retained where possible, subject to the rail alignment and other necessary associated infrastructure. The existing landscape bund along the western Site boundary will be retained, with existing trees also retained where possible, and with structural tree and woodland planting incorporated to the west of the bund. No alternatives as such have been identified for the biodiversity elements of the Proposed Development, which has followed the principles of habitat retention where possible whilst delivering a market-led scheme.

Drainage

3.5.90 A number of drainage solutions were considered throughout the design development process. These solutions were largely dictated by the size of the AM facility.

3.5.91 Consideration was made of the retention of the long north-south ditch that would provide a direct conveyance route through the Site. However, this conflicted with the need to retain flexibility for a large northern plot.

3.5.92 In addition, options to culvert underneath the large northern plot were considered, however this option was considered to pose a high level of constraint on potential development and also a potential for challenges to ongoing maintenance of any culverts under such large buildings, see **Appendix 13.2: Surface Water Drainage Strategy**.

Access and Movement

3.5.93 The approach to access and movement for the Proposed Development has evolved with the design of the proposals and has also been influenced by the wider delivery and strategy proposals relating to the Gravity Link Road.

3.5.94 Access and movement is shown on two Parameter Plans: Transport: Micromobility and Transport: Strategic Infrastructure.

3.5.95 The access and movement framework is essential to supporting the overall Smart Campus approach and to support the Clean and Inclusive Growth Strategy, in particular to de-carbonise transport, minimise transport impacts on the strategic and local road network, establish multi-modal transport infrastructure including the rail restoration, encouraging micromobility blending community and campus movement and providing corridor infrastructure to enable autonomous movement.

3.5.96 Construction of the Gravity Link Road and the green bridge connecting Puriton to the south is due to be completed in October 2021. In addition, the Village Enhancement Scheme is now consented and will be completed in 2022. The Transport Parameter Plans have evolved to build upon transport and access opportunities from these developments.

3.5.97 The primary access (all transport modes) to the Site for vehicles will be from the Gravity Link Road in the south-west corner. Secondary access (all transport modes) will be provided from Woolavington Road along the southern boundary of the Site.

3.5.98 Restoration of the railway line for freight and passenger use will provide access by rail from the north-west of the Site. As stated above, no alternatives to this access were considered as this is the route of the previous rail line. A corridor for the rail route is provided on the Parameter Plans to enable the exact routing within the Site to be developed to respond to market demand. The Transport: Strategic Infrastructure Parameter Plan shows that the southern part on the railway line in the Site terminates in a passenger station which will be accessible to local residents, including residents of Puriton and Woolavington.

3.5.99 Further access will be available from the B131 Causeway to the east for emergency/operations/pedestrian/cycle only. No alternative to this route was considered as this utilises an existing access route that will be improved as required.

3.5.100 Various options have been considered for the internal transport, road and micromobility connections. As indicated on the Parameters Plans, these locations are not fixed and will be located to respond to end-user requirements, insofar as those requirements are in keeping with Gravity's objective of clean and inclusive growth.

3.5.101 Crossing points will be provided at various locations on all major routes on desire lines to ensure that pedestrians and cycles are able to easily cross these routes and create a permeable network of active travel routes, but again are shown as 'indicative' on Parameter Plans.

3.5.102 In conclusion, the Proposed Development maximises transport and access opportunities, including opportunities for active travel, from the approved route of the Link Road. Final locations and design of all transport and movement features will be determined through market demand and end-user requirements and designed and implemented in accordance with requirements as set out in the Design Guide.

Conclusion

3.5.103 The Parameter Plans for the Proposed Development have been based on the requirements of national and local policy and the design brief set by Gravity. Its objective is to meet the market demand whilst taking into account environmental conditions, public consultation, viability considerations and by responding to the constraints and opportunities of the Site.

3.6 Post LDO Adoption

3.6.1 Once the LDO is adopted, development within the Site will proceed in accordance with the LDO documents: the Local Development Order itself and the accompanying Design Guide.

3.6.2 An Application for Compliance Form will be completed by a prospective applicant and submitted to the local planning authority and a Certificate of Compliance will be issued by the local planning authority if the application is determined to be compliant with the parameters of the LDO. Otherwise the local planning authority will provide written advice on how to proceed.

3.6.3 A requirement of the LDO is that Gravity will submit a Position Statement to SDC on each anniversary of the date of the LDO. The Position Statement will provide details of extant development consented under the Order at the date of its submission and shall include details such as a list of Certificates of Compliance granted during the previous 12 months; details on the number of market and affordable housing dwellings, and non-residential uses completed and under construction, detail on S106 contributions and an updated plan showing the above.

3.6.4 The LDO will require formal reporting to enable a plan, monitor and manage approach to the enterprise zone board, and monitor effects and direct mitigation through dedicated management teams on transport, as well as environmental and social value creation. Mitigation planning and the delivery of mitigation via partners and statutory bodies will be informed by the Locality Investment Plan (LIP) and secured via the section 106 agreement.

3.6.5 The LDO will require occupiers to develop their own Environmental and Social Governance (ESG) policies and prepare an annual ESG report on progress.

3.6.6 In order that the regeneration benefits of the LDO are secured, SDC as the local planning authority will review progress with the LDO on the 5th anniversary of its adoption to be able to fully reflect on the continued suitability of the LDO in the light of any changes to planning policy. This review is secured by way of a condition attached to the LDO.

4 Demolition Construction and Site Management

4.1 Introduction

4.1.1 This chapter provides information on the demolition and construction of the Proposed Development and the management of the construction phases on Site.

4.2 Demolition and Construction Works and Programme

4.2.1 Construction of the Proposed Development will be market-led and will therefore respond to occupier requirements (within the parameters of the LDO and/or extant planning permissions). There is the potential that the commercial element of the Site is taken forward by one occupier developing an advanced manufacturing facility. Alternatively, the commercial element could be brought forward by several occupiers.

4.2.2 It is anticipated that the construction of the Proposed Development will be completed on a phased basis, with elements being occupied whilst other phases are being constructed.

4.2.3 The phased nature of the construction of the Proposed Development means that environmental effects during demolition and construction will vary temporally and geographically through the construction period.

4.2.4 The completion of the Gravity Link Road will greatly assist the provision of a dedicated access to service construction.

4.2.5 The construction programme is not available at this time. It is anticipated that construction will commence in 2022 and be complete by 2032. Therefore, while construction is anticipated to last for up to around 10 years, it is not anticipated that any area of the Site or surrounding area will experience construction effects during all, or even the majority, of that time. Construction effects also typically vary in magnitude depending on the processes occurring at any one time (e.g. earth movements are more likely to lead to significant environmental effects than internal fit out of a building).

4.2.6 The EIA has been mindful of how the phased delivery of the development may lead to significant environmental effects (e.g. occupiers of earlier phases being affected by construction of later phases) and this is documented in the technical assessment chapters. However, due to the type of effects and their temporary nature, specific scenario testing of phases within the EIA has not been included. It is considered that the ES provides a conservative assessment of the likely significant effects of the Proposed Development during demolition and construction.

4.2.7 The majority of demolition of the former ROF Site has been undertaken through the Site demolition and remediation works that were completed in November 2020 under the Remediation Planning Consent. However, there are a limited number of buildings remaining that will require to be demolished to accommodate the LDO. These are shown on the Existing Buildings to be Demolished Parameter Plan in **Appendix 3.1g**.

4.2.8 Embedded mitigation through the landscape management plan will be delivered early in the construction period to provide structural landscaping in the short term which will embed and develop to provide an exceptional setting for occupiers as well as provide advanced mitigation to reduce visual impact effects in later years.

4.3 Construction Management

4.3.1 All of the demolition and construction operations carry with them a range of issues to be dealt with in their design, preparation and execution.

4.3.2 Best practice in construction management is already being implemented and will continue to be so to minimise the potential environmental effects and disruption that could be caused by the construction works. This has and will continue to minimise potential disruption to affected communities, services and habitats.

4.3.3 Key demolition and construction activities are likely to include:

- Establishment of construction compound(s) and welfare facilities;
- Temporary workforce accommodation for contractors for up to 200 workers;
- Demolition of the remaining buildings;
- Vegetation clearance, earthworks and soil preparation to prepare the Site for construction activities;
- Construction of infrastructure including internal access routes, highway improvements, railhead reinstatement, access works and drainage;
- Formation of open space, with associated landscaping;
- Construction of building foundation, structure, cladding and glazing and internal walls and partitions;
- Installation of fixtures, fitting and building service;
- Utility diversions, upgrades and connections; and
- Soft landscaping.

4.3.4 The construction works will be confined to the Site, apart from those that will be undertaken within the boundaries of the highway where the new accesses will be provided.

4.3.5 Construction compounds within the Site will be sited giving consideration to the environmental and visual effects of development as well as a practical solution to allow the development to proceed.

4.3.6 The sound environmental management of the demolition and construction works will be delivered through principles set out in the Framework Demolition and Construction Environmental Management Plan (DCEMP). The Framework DCEMP is provided at **Appendix 4.1**. The Framework DCEMP will be taken forward for each phase by the Principal Contractor for that phase.

4.4 Construction Traffic

4.4.1 Traffic will be generated during construction of the Proposed Development as a result of bringing plant and materials to the Site and due to construction personnel accessing the Site. This will utilise the completed Gravity Link Road.

4.4.2 **Chapter 9 Transport and Access** sets out additional details on construction traffic and management.

4.4.3 Management of construction traffic, deliveries and personnel access will be managed through principles set out in the Framework DCEMP.

4.4.4 Routes for construction traffic involved in the delivery / removal of equipment and materials to and from the Site are set out in the DCEMP.

4.4.5 Movements of large or abnormal loads will be agreed in advance with SDC, other relevant highway authorities and the Police in order to ensure compliance with regulations and advance notification for neighbours.

4.5 Construction Waste

4.5.1 Schedule 4 of the EIA Regulations states that this ES should include a description of the development, including "*an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases*".

4.5.2 The demolition and construction works will be undertaken in accordance with legal requirements, and it is proposed that waste will be minimised by moving waste up the waste hierarchy, avoiding waste during construction, diverting as much waste as possible from final disposal to more sustainable waste management options.

4.5.1 A Framework Site Waste Management Plan (SWMP) has been prepared for the demolition and construction phase to support the LDO and is provided at **Appendix 3.3**. The SWMP will help resource efficiency principles to be incorporated, where consideration is given to designing out waste, reducing waste generated on-site as well as reuse, recycling, and recovery of waste. Estimated waste arisings from the construction of buildings has been calculated using established national SmartWaste benchmarks based on the Building Research Establishment's (BRE) Smart Waste Benchmark Data (BRE, 2017).

4.5.2 Detailed assessments of waste arisings for the construction stage will be undertaken within a separate detailed SWMP, when more details are known on the construction process for each phase prior to works commencing on site.

5 Assessment Methods

5.1 Introduction

5.1.1 This Chapter describes the process by which the EIA has been carried out. It includes a discussion of the relevant regulations, the EIA process, consultations and the over-arching assessment methods applied. Details of the technical method followed for each topic are presented in each of the **Chapters 7-16** as appropriate.

5.2 EIA Regulations

5.2.1 The EIA for the proposed LDO is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) ("the EIA Regulations"). The EIA Regulations transpose the provisions of European Council and Parliament Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU ("the EIA Directive"). To ensure that the provisions of the EIA Regulations would continue to be implemented in the same way or an equivalent way following the exit of the United Kingdom from the EU at the end of the transition period, appropriate amendments were made by The Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018. There has been no substantive change to EIA requirements as a result of the departure of the UK from the European Union.

5.2.2 Regulation 32 of the EIA Regulations provides for amendments to be made to the EIA process so as to ensure that the requirements of the EIA Directive are met where a local planning authority proposes to grant planning permission by local development order.

5.2.3 Environmental information comprises the ES, including any further or other information, any representations made by the bodies required to be notified by the EIA Regulations and any other representations duly made by any other person about the environmental effects of the Proposed Development.

5.2.4 Regulation 18 and Schedule 4 of the EIA Regulations detail the required information for inclusion in an ES. For ease of reference Regulation 18 and Schedule 4 are presented in **Appendix 5.1**.

5.3 The EIA Process

5.3.1 In general terms the main stages in the EIA are as follows:

- Screening – determining the need for EIA;
- Scoping – identify significant issues, determining the scope of the EIA;
- Establishing Baseline – drawing together and reviewing existing available data and undertaking surveys to determine the existing and future baseline conditions;
- Assessment and iteration – assess likely significant effects of development, both adverse and beneficial, evaluate alternatives, provide feedback to the design team on potential adverse impacts, modify development or impose parameters, incorporate mitigation (including potential monitoring and long-term management), assess effects of mitigated development;
- Preparation of the ES; and

- Consultation on the ES.

5.3.2 Review of environmental information – The steps required to be taken by SDC in examining the environmental information, reaching a reasoned conclusion on likely significant effects, integrating that conclusion into the decision on adoption of the LDO, including whether it is appropriate to impose monitoring measures. Environmental information comprises the ES, including any further or other information, any representations made by the bodies required to be notified by the EIA Regulations and any other representations duly made by any other person about the environmental effects of the Proposed Development.

5.4 Screening

5.4.1 Regulation 32 (2) requires that a local planning authority must not make a local development order unless it has prepared information as per Regulation 6 (2) in accordance with Regulation (4).

5.4.2 A Screening Opinion outlining the description of development and likely significant effects of the development was adopted by SDC on 23rd June 2021 (application no 99/21/00127) identifying that an EIA is required for the LDO.

5.5 Scoping

5.5.1 An EIA Scoping Report was prepared to document the proposed scope and approach to the EIA, in line with Regulation 15 of the EIA Regulations (reference 42/21/00021). This is provided in **Appendix 5.2**. Statutory consultation with relevant statutory and non-statutory bodies was undertaken from 29th June 2021 to 3rd August 2021 on the Scoping Report to inform assessments being undertaken for this ES.

5.5.2 An EIA Scoping Opinion was issued by SDC on 27th September, planning reference 42/21/00021. This is provided at **Appendix 5.3.**

5.5.3 **Section 4** of each of the technical chapters (**Chapter 7-16**) provides information on the consultation undertaken that is relevant to that topic and has considered the information provided in the Scoping Opinion. As a result, this ES has been prepared to fulfil the requirements of the adopted Scoping Opinion.

5.6 Consultation

5.6.1 In addition to consultation to agree the scope of the EIA, consultation with relevant statutory and non-statutory bodies has been undertaken throughout the EIA and design process (provided in **Section 4** of each of the technical chapters, **Chapter 7-16**).

5.6.2 As part of the EIA process, consultees have been consulted to agree the detailed scope of the assessment, to provide information, to discuss assessment methods and findings, and/or agree mitigation measures and design responses.

5.6.3 A Gravity LDO Delivery Group was established in October 2020 to drive forward the LDO and facilitate ongoing collaboration. The Delivery Group has continued throughout the EIA process on a monthly basis and includes key statutory consultees; SDC, SCC, Highways England, Environment Agency, Natural England, and Network Rail. The proposed approach to the EIA has been discussed and agreed with the Delivery Group.

5.6.4 There are also several sub-groups to the Delivery Group, including the Transport, Utilities and Environmental Sub-Groups, which have facilitated further consultation where required.

5.6.5 The approach by Gravity has been to have open dialogue throughout the process with the community and business with an on-site direct point of contact and regular parish council

liaison including engagement in the Villages Together project. Comprehensive public consultation has also been carried out in advance of the LDO and ES being submitted for formal consultation (see the Gravity Smart Campus Local Development Order document for more information) as well as wider engagement with key stakeholders and the business sector across the South West. Regular dialogue with the Department of International Trade has enabled the team to refine the Proposed Development to align with market demands.

5.6.6 The feedback from all aspects of the consultation set out above was analysed and a number of key themes emerged, namely: Quality of Employment Opportunities for Local People; Gravity Vision for Clean Growth; Sustainable Smart Mobility & Connectivity; Protection of Homes for Local People; Community Facilities; An Enhanced Natural Environment and Local Road Safety. Information on responses to these themes is provided in Section 3.4 of the Gravity Smart Campus Local Development Order document.

5.6.7 Statutory and public consultation will also be carried out on the LDO documents, including this Environmental Statement, during the LDO consultation period in Autumn 2021.

5.7 Assessment Scenarios

Introduction

5.7.1 An LDO tends to be made prior to the commencement of any development on a site, however in this case, there has already been some development that has been implemented within the Site, such as the site remediation and the Gravity Link Road. To ensure that the EIA is clear, consistent and transparent, the following approach to the assessment of the Proposed Development has been followed.

Environmental Baseline

5.7.2 As a general principle, environmental effects are assessed by comparing the predicted state of the environment without the Proposed Development, with the state of the environment with the Proposed Development for a particular year. This necessitates predicting how current conditions at the Site may change without the LDO being made and implemented.

5.7.3 The year 2032 has been identified as the assessment year for operational effects for the majority of the technical assessments included in the ES. This year has been identified as it is the end of the current Local Plan period and a date by which it is reasonable to assume that the development approved by the LDO will have been delivered.

5.7.4 The climate change assessment considers the assessment year (2032) as well as 25-year intervals up to 2099, as this is the final year available in the UKCP18 climate projections dataset.

5.7.5 As required by the EIA Regulations, the ES describes the relevant aspects of the current state of the environment at the Site and in the surrounding area.

5.7.6 The current conditions at the Site and in the surrounding area have been factored forward to predict likely conditions at the Site in 2032 to enable the effects of the LDO to be considered against a ‘do nothing’ scenario.

5.7.7 The following elements are therefore included in the 2032 Baseline:

- The implemented 2017 Planning Consent. This is based on the note setting out the Parameters established by the 2017 Planning Consent and Environmental Statement provided at **Appendix 2.2**. The safeguarded land uses are not included in the 2032 baseline as they have not been granted consent (i.e., they were safeguarded only and would require a new planning permission or consent to progress).

- The approved village enhancement scheme was identified as mitigation for the 2017 Planning Consent and will be implemented one year from the opening of the Gravity Link Road, i.e., by autumn 2022. Therefore, this is factored into the 2032 baseline.

- Landscaping associated with the Gravity Link Road, which is due to be implemented from October 2021.

- Other existing and approved development in the surrounding area. This includes development that has been allocated in the Local Plan 2011-2032. These developments, either allocated, approved or considered likely to have been approved and implemented by 2032 are shown in the table in **Appendix 1.3** and on the plan at **Appendix 1.4**. Schemes that have been scoped out of the 2032 baseline, and the rationale for so doing, have also been included in the table in **Appendix 1.3.** The review undertaken to identify these developments included all development within 3km of the Site and developments subject to EIA within 5km of the Site as significant cumulative effects are unlikely beyond these zones. Note that no EIA developments within 5km are proposed to be scoped in, therefore the plan at **Appendix 1.4** shows the 3km buffer only.

- Likely changes to the natural environment between now and 2032. This includes natural changes such as growth in vegetation and establishment of habitats, especially of landscaping implemented as part of the 2017 Planning Consent. It also includes anthropogenic changes such as changes to climate, air quality and human behaviours where there can be a high degree of confidence that such changes will occur (for example the transition towards electric vehicles on the basis of clear Government policy on the phasing out of internal combustion engines and the increase in bus services to avoid private vehicle usage as promoted in the recently published national bus strategy). Each chapter outlines as appropriate how these changes have been considered in establishing the 2032 baseline.

5.7.8 The approach set out above is consistent with the EU's *Guidance on the preparation of the Environmental Impact Assessment Report* (2017), which states:

"The state of the environment and the nature of impacts such as pollution rates or emission limits change over time, and this has to be accounted for in the Baseline assessment. In addition, the Baseline should consider Projects in the vicinity that exist and/or that have been approved (see Part B section 1.4.3 on Cumulative Effects). The Baseline should, therefore, be dynamic, going beyond a static assessment of the current situation. This is especially important for issues where there is considerable uncertainty, such as climate change, or for longer-term developments, such as large infrastructure Projects."

5.7.9 A range of Site surveys and data collection exercises have been used to establish environmental conditions at the Site and in the surrounding area to provide a basis for the subsequent assessment work. The surveys undertaken are reported in each of the technical chapters. These also build upon the work undertaken for previous planning applications at the Site.

5.7.10 It should be noted that some of the technical surveys and assessments on which the EIA is based are too detailed and lengthy for incorporation into Volume 1 of this ES. In such instances, the technical survey and assessment reports are provided in full as an appendix to this ES (Volume 2), with a relevant summary and the reference for the full survey or assessment provided in the ES. The geographical scope of these appended surveys and assessments has been based on the likelihood for significant effects.

Assessment Assumptions

5.7.11 The following assumptions have been used to ensure that the EIA has assessed the likely significant effects of the Proposed Development. A generic list is provided, followed by a list under the heading of each technical chapter in this ES.

- The Proposed Development will be constructed in accordance with:
    - The details and parameters documented in **Chapter 3**;
    - The works and programme documented in **Chapter 4** and in accordance with a FDCEMP (**Appendix 4.1**); and
    - The Parameter Plans (**Appendix 3.1a-f**).
- A Gravity Locality Investment Plan, submitted with the LDO, has been developed as part of the enterprise zone implementation plan to monitor the development and manage the phasing of infrastructure to mitigate the development as it comes forward, if required, and to support its efficient implementation. It is anticipated that the construction of the Proposed Development will be completed on a phased basis, however, given the market-led nature of the LDO, no detail on potential phasing is available at this time.
- Temporary accommodation will be required during the demolition and construction phase for up to 200 workers.
- Regarding the potential for stacks, the assumption is an additional 25m is permitted for stacks, above the 35m ridge height (up from 2m above existing ground level) and for flues, the assumption is 3m higher than the adjacent building height, both as shown on the **Building Heights Parameter Plan, Appendix 3.1d.**
- Development under/adjacent to the power lines – the area under the power lines within the 'Energy Distribution and Management Infrastructure' are shown on **Appendix 3.1a: Land Uses Parameter Plan** will only be used for energy infrastructure. i.e. sub-stations and batteries etc. The ES addresses the constraint posed by the power lines and not affecting either the power lines or leading to effects/risks from development in the vicinity of them.
- There is no education provision (primary or secondary) within the Site, and provision will be made within existing schools as required. There are nursery and health centre uses for site occupiers and the workforce.
- A campus training facility will be provided on Site to provide training, learning and development facilities for the occupiers and to train their workforce with the skills required for their operations.
- As noted in **Section 3.2, Description of the Proposed Development,** the development will provide 1,000,000 sqm commercial building or buildings. For the purposes of the EIA, it has been assumed that this will be delivered as the following mix of use classes:
    - 1,000,000 sqm advanced manufacturing uses
- As also noted in **Section 3.2**, 100,000 sqm within use classes C1, C2, E (a) – (g), F and B8 will be delivered. For the purposes of the EIA, it has been assumed that this will be delivered as the following mix of use classes:
- 35,000 sqm E(g) [formerly B1b] uses (assumed R&D)
- 15,000 B8 (AdvMan complementary goods in / despatch space))
- 7,500 sqm E(g) [formerly B1c] uses (assumed industrial processes)
- 7,500 sqm E(g) [formerly B1a] uses (assumed incubator space)

- 35,000 sqm of other supporting land uses

- The inclusion of B8 use within the 100,000 sqm identified in part b) (ii) of the Description of Proposed Development (**Section 3.2**) has been made to provide flexibility to accommodate potential uses that are complementary to Advanced Manufacturing occupiers, such as data centres, in other suitable and appropriate locations across the Site. The B8 uses proposed are not the 'traditional distribution type' use, but rather those directly related to the operation and supply chain of Advanced Manufacturing or the potential arrival and despatch of materials and products of Advanced Manufacturing processes.

- Residential – up to 750 homes to meet the needs of the campus and related workforce.

Economics Assumptions

COVID-19

The additionality assumptions presented have been adjusted to take account of the increased competition for contracts which may arise as an implication of the COVID-19 pandemic on the labour market.

Labour Market Study Area

5.7.12 The Labour Market Study Area is consistent with the combined borders of Sedgemoor and the former Taunton Deane Council. This geography was identified as the M5 Corridor Functional Economic Market Area (FEMA) within the Housing Market Areas and Functional Economic Market Areas in Somerset report (2015).

5.7.13 It is acknowledged that the report is several years old and that there are many linkages between local and regional economies in the South West, however the M5 Corridor FEMA nonetheless provides robustly defined boundary which will aid the collection and analysis of statistical data.

Capital Expenditure

5.7.14 The capital expenditure to deliver the floorspace quantum set out in the Description of Development has been estimated using RICS Build Cost Information Service (BCIS).

5.7.15 BCIS data has been rebased to Q3 2021 values for Sedgemoor. The mean build cost per square meter for mixed commercial developments (£3081) and advanced factories/offices – mixed facilities (£1499) have been used as they best fit with the parameters of development described for the Site. In addition, 750 homes are to be delivered on site for use by employees of the Proposed Development. The England average home size of 67.7 sqm has been used, along with the mean build cost per square metre in Sedgemoor (£1,281), to estimate the capital expenditure required to deliver the housing units.

5.7.16 Consequently, the estimated capital expenditure to deliver the floorspace quanta is:

- 100,000 sqm commercial x BCIS cost per square meter for mixed commercial developments (£3081) = £308,100,000

- 1,000,000 sqm advanced manufacturing x BCIS cost per square meter for advanced factories/offices – mixed facilities (£1499) = £1,499,000,000

- 750 homes x average home size of 67.7 sqm x BCIS cost per square metre for housing = £65,043,000.

5.7.17 Therefore, the total estimated capital cost of the Proposed Development is £308,100,000 + £1,499,000,000 + £65,043,000 = £1,872,142,000.

5.7.18 No discount for scale of development has been applied to the cost estimates, as the floorspace quanta may come forward in a mix of unit sizes and specifications depending on what the market delivers.

5.7.19 The robustness of the calculations estimating the capital expenditure are limited by the level of specificity regarding the Proposed Development. It is understood that the Proposed Development will be market-led, and therefore the parameters set out in the Description of Development provide the basis for estimating total build cost. Options for modular and more efficient construction methods are being considered by potential occupiers and therefore costs and in turn labour required for construction may be reduced. Costs and construction methods will be refined at such a time when there is more clarity on the preferred occupier, design and specification.

Worker productivity and Gross Value Added

5.7.20 Figures for Gross Value Added per head have been sourced from the Office for National Statistics Annual Business Survey. The most current available data is from 2017, and therefore these values have been uprated by the ONS GDP Deflator[1] to bring them to 2021 prices.

5.7.21 The GVA per head for the various types of employment supported by the demolition / construction and operation phases of the Proposed Development are summarised in **Table 5.1** below.

	GVA per-employee	
	2017	2021
Construction	£60,664	£65,711
Manufacturing	£63,792	£69,099
Professional, scientific & technical	£55,688	£60,320
Services	£42,708	£46,261

Table 5.1 showing GVA per head

Construction Employment

5.7.22 The calculation of construction employment is calculated by taking the capital investment required to deliver the infrastructure and assets as set out in the Description of Development and dividing that figure by the amount of turnover within the construction industry required to support a single worker.

5.7.23 Data from the Annual Business Survey revealed that the level of turnover required to support one construction worker in the South West region was £151,953 in 2017. This has been adjusted by the ONS GDP Deflator to uprate the figure to 2021 values, resulting in a turnover of £164,595 to support one construction worker.

5.7.24 The estimates of construction employment are limited by the robustness of the build cost data. Current market data has been sourced from BCIS to estimate the capital expenditure, however this may be refined in the future when formal cost estimates have been obtained based on detailed designs and specifications for floorspace and the infrastructure for individual plots.

Net Construction Employment

5.7.25 Only a proportion of total construction employment would occur within the Labour Market Study Area due to mobility of labour, competition from externally located construction firms and supply

[1] The GDP Deflator value to translate 2017 prices into 2021 prices is 1.083194909

chains. To take account of these factors, the additionality assumptions detailed in **Table 5.2** below have been used to convert the estimated gross construction employment from the Proposed Development.

5.7.26 The additionality factors are set out in **Table 5.2** below.

Additionality factor	Value	Rationale
Deadweight	9%	The 2017 Hybrid Consent for Huntspill Energy Park will be delivered in absence of the Proposed Development coming forward. The Huntspill Energy Park ES estimated a build cost of £148.1 million in 2012, and uprating this to 2021 prices results in an estimated capital expenditure of £174.2 million. This level of expenditure could support an estimated 1,060 PYE construction jobs, which is approximately 9% of the gross employment supported by the Proposed Development. This therefore represents the deadweight.
Leakage	45%	The scale of the Proposed Development means that the construction labour market within the Labour Market Study Area is unlikely to be able to absorb the full requirement of labour, thereby necessitating the acquisition of resources from a wider area
Displacement	60%	The scale of the Proposed Development and the target sectors is likely to demand a diverse range of skills and capabilities. This is anticipated to result in opportunities which pay higher wages, thereby displacing existing construction workforce participants as they seek to maximise the returns on their labour
Multiplier	2.45	ONS National multiplier for construction
Adjusted Multiplier	1.72	The national multiplier has been adjusted by 75% to translate the impacts to a regional level, and then that figure is then adjusted by 50% to estimate the impacts specific to the Labour Market Study Area. This is done through the formula: $\left[\left[\left[National\ multiplier\ (2.45) - 1\right] * 0.75\right] * 0.5\right] + 1 = adjusted\ multiplier$
Total additionality	34.4%	The total additionality is the factor by which gross jobs are adjusted to estimate the level of net additional jobs resulting from the Proposed Development. The total additionality figure is calculated through the following formula: $(1 - deadweight) * (1 - displacement) * (1 - leakage) * adjusted\ multiplier = total\ additionality$

Table 5.2 Construction Additionality

Operational Employment

5.7.27 The calculation of operational employment is done by taking the total floorspace delivered within a given use classification (i.e. B8 – storage and distribution) and dividing the area by an employment density figure sourced from Employment Densities Guide (3rd edition). Where use classifications are not covered within the Employment Densities Guide (3rd edition), such as advanced manufacturing uses, custom figures have been derived using a combination of market research and previous project experience.

5.7.28 A summary of the employment densities used within the assessment is presented in **Table 7.6** below. **Table 7.6** provides a breakdown of the 1,000,000 sqm of advanced manufacturing space and a breakdown of the 100,000 sqm of supporting commercial floorspace.

Use	Floorspace (sqm)	Employment Density	Gross Jobs
Advanced Manufacturing			
Advanced manufacturing	1,000,000	164	6,100
Manufacturing Support Space			
R&D	35,000	60	585
Industrial Processes	7,500	47	160
Storage/Distribution	15,000	80	190
Other supporting uses	7,500	60	125
Total	**65,000**		**1,060**
Supporting & Ancillary uses			
Nursery	1,000	6	55
Hotel/conference centre	8,500	3*	65
Sports/leisure centre	8,000	n/a	50**
Gym	7,500		
Retail/café	750	15	50
Health Centre	750	33	25
37 Club***	2,500	n/a	0
Various other	6,000	60	100
Total	**35,000**		**345**
Grand Total	**1,100,000**		**7,505**

*Hotel employment density is the number of beds per worker
**The Employment Density Guide recommends 40-50 employees per gym. Assumed to be managed/operated as a single facility with the sport/leisure facilities with upper estimate used.
***existing facility with not net increase in employees anticipated

Table 7.6 Operational Employment Density Assumptions

Key business sector: manufacturing

5.7.29 The Description of Development states that the maximum parameters for development are one million sqm of manufacturing floorspace. As the Proposed Development is being taken forward through a market-led approach, the specific developments which will come forward on the Site are not yet known. To that end, a series of assumptions have been made regarding the most likely sectors which will occupy the Site, and their proportion of the total floorspace. It is understood that it is priority at local, regional and national levels to support advanced manufacturing. There are already existing advanced manufacturing hubs for the chemicals industry at Grangemouth and at Humberside, so it is unlikely that Gravity would compete with these clusters.

5.7.30 Within the South West there is established expertise within aerospace and advanced engineering. Therefore, an assumption has been made that Gravity will be developed to complement and diversify existing strengths, but also reposition the South West for new growth sector opportunities in advanced manufacturing, particularly around low carbon transport and associated supply chains.

5.7.31 It is anticipated that 1,000,000 sqm will be dedicated to advanced manufacturing uses. Market research of existing advanced manufacturing facilities, specifically related to vehicle manufacturing, has revealed an average employment density which equates to one job per 149 sqm of floorspace. With the continued progression and integration of automation technology in manufacturing, it is assumed that the Proposed Development will have slightly lower density than existing facilities (10%). This equates to an employment density of one job per 164 square metres.

Key business sector: professional, scientific & technical

5.7.32 The Description of Development notes that the maximum parameters for development include up to 100,000 sqm of commercial space. Due to the market-led approach of the Proposed Development, the specific nature of the development which will come forward within this

floorspace is not yet known. It is understood that this floorspace will host supporting and ancillary functions to the manufacturing space.

5.7.33 For the purposes of this assessment, it has been assumed that 65,000 sqm of the commercial space will be dedicated to uses supporting the manufacturing elements, hosting a range of professional, scientific and technical employment (see **Table 7.9**). The weighted average of the employment densities across the various uses equates to one job per 61 sqm.

Net Employment

5.7.34 To assess the scale of net additional jobs likely to be generated or supported by the Proposed Development, additionality factors based on the characteristics of the Labour Market Study Area were applied to predicted gross employment. Appropriate economic appraisal guidance[2] and professional judgment based on similar economic impact assessments have been used to estimate values for:

- **Deadweight**: what would happen in the absence of the Proposed Development;
- **Leakage:** the proportion of employment opportunities accessed by people living outside the Study Area;
- **Displacement:** the proportion of Proposed Development benefit accounted for by a reduction in benefit elsewhere;
- **Multipliers:** to estimate further economic activity associated with additional income and supplier purchases.

5.7.35 The additionality factors adopted in this assessment are detailed in **Section 7.7 Assessment of Likely Effects** within the Economics Chapter (**Chapter 7**).

Human Health, Social and Wellbeing Assumptions

5.7.36 The Proposed Development will provide up to 750 private housing units. It is assumed the majority of residential dwellings will be occupied by employees of the Proposed Development.

Transport and Access Assumptions

5.7.37 Traffic growth factors for the weekday AM and PM peak hours have been derived for Sedgemoor using TEMPro. To avoid any double counting of traffic within the assessment, the default planning assumptions were adjusted to remove housing associated with four committed development sites explicitly assessed using respective TA vehicle trip generations. It was also necessary to ensure that the planning assumptions reflected the housing and jobs growth targets / trajectories set out in the SDC Adopted Local Plan. Jobs associated with the 2017 Planning Consent were not included in the Local Plan targets so no adjustment in this regard was required. All growth factors were however adjusted with the National Traffic Model database as is standard practice.

5.7.38 An appraisal of the likely trip generation has been undertaken based upon the scale of development proposed and assumed delivery programme, and it is estimated that peak construction activity would be in 2024. The appraisal has been based on a 5 day working week.

5.7.39 To represent a worst-case assessment, additional HGV movements associated with constructing the rail improvements have been included whilst the assessment has also not

[2] HM Treasury's Green Book appraisal guidance

taken into account potential opportunities to reduce HGV movements with subsequent freight transfer from road based HGV to rail movements.

5.7.40 It is estimated that the peak construction period could generate approximately 425 HGV two-way movements per day (18-hour period); a comparable estimate to the 2017 Planning Consent is approximately 349 HGV two-way movements per day (18-hour period).

5.7.41 These HGV movements are expected to be distributed onto the local road network with 90% of the HGV movements via the M5 junction 23 (70% north / 20% south), 5% onto the A39 and 5% onto the A38 toward Bridgwater.

5.7.42 It is also estimated that there would be up to 1,714 two-way trips from construction works generated per day (18-hour period); a comparable estimate to the 2017 Planning Consent is approximately 1,125 two-way movements per day (18-hour period).

5.7.43 This has assumed that approximately 85% of these workers would drive to work (single occupancy) with the balance car sharing or using alternative modes of transport. These trips have been distributed onto the local road network consistent with assumptions for operational employees for the HEP trip forecasting.

5.7.44 Since the LDO is a market facing, flexible consent in terms of actual land uses implemented, Gravity has been assessed for a most likely outcome 'Core Gravity' scenario which reflects the land uses and operations as below:

- Gravity will provide up to 1,000,000 sqm of Advanced Manufacturing floorspace creating 6,098 jobs, 65,000 sqm of supporting employment uses and 35,000 sqm of supporting ancillary uses, creating another 1,402 jobs combined.
- The site will operate on a 24/7 basis for 365 days per annum. A three-shift system for the advanced manufacturing will operate between 06:00-14:00, 14:00-22:00 and 22:00-06:00. The supporting ancillary uses are expected to operate around a similar basis to the three-shift advanced manufacturing activity on site.
- 90% of advanced manufacturing type jobs are assumed to work the three-shift system, with the remaining 10% assumed to work 09:00-17:00 hours.
- The advanced manufacturing is assumed, based on a first principles assessment which is set out in the TA, to generate circa 445,000 units output per annum, and HGV movements have been estimated on this basis.
- 750 residential units with an assumed split of 10% 1 bed, 20% 2 bed, 50% 3 bed and 20% 4 bed.
- Allowances have been made for trip internalisation on the basis that the Smart Campus will encourage cross visitation (supply chain) between land uses and therefore the site will achieve a level of self-containment which in turn will minimise external trip making. These details are set out in the TA.

5.7.45 The scenario assumptions around a supporting transport strategy and transport mitigation measures are summarised below:

- a package of incentives to encourage cycling and enhanced infrastructure including the A38 corridor scheme and A39 route to Bridgwater Station.
- incentives for employees / residents to use public transport / and or cost on the employee for parking on site.

- Enhanced main A38 corridor bus services and bespoke, dedicated, Demand Response Transit (DRT) minibus / e-bus services for employees geared to align with shift patterns, funded by the Locality Investment Plan and overseen or commissioned by the transport authority or occupier.
- Incentivised car share system.
- Associated trip internalisation factors.
- Comprehensive package of transport planning measures and monitoring (as set out in more detail in the FTP) to achieve the core target modal share of 65% car driver.

5.7.46 For the purposes of the EIA, it has been assumed (as a worst case in terms of traffic impact) that the potential passenger and / or freight rail facility may not be delivered. It is however expected that this facility will be in place and could lead to reductions in staff and freight traffic movements although such reductions are not accounted for in this assessment.

5.7.47 The assessment undertaken assumes that the provision of the Gravity Link Road will lead to some redistribution of local traffic flows in and around the village of Puriton. The redistribution assessment has been based on traffic using the most logical route post opening of the Gravity Link Road scheme.

Noise and Vibration Assumptions

5.7.48 Normal demolition and construction hours are assumed to be Monday to Friday between 08:00 to 18:00 and Saturday 08:00 to 13:00. It is assumed no demolition or construction work will take place on Sundays or Bank Holidays. For any works outside of these times, agreement with the local authority will be required.

5.7.49 It is assumed that outdoor incident noise levels in external areas used for amenity (i.e. gardens/balconies) are only of concern during the daytime hours, as people are unlikely to make frequent use of the outdoor amenity areas during night-time hours.

5.7.50 The details of the types of construction methods and plant likely to be used during the construction phases are yet to be finalised. Therefore, at this stage in the scheme's design, it is not possible to state precisely where plant will operate and for how long during the working day. However reasonable assumptions have been made to inform the assessment of construction noise presented in this assessment.

5.7.51 The assessment assumes that the construction activities are distributed across the Site in accordance with the parameter plans.

5.7.52 The Proposed Development also includes temporary housing for construction personnel. As it is not yet known where these will be located, a worst-case scenario has been assumed. The lowest ambient level presented in **Table 10.17** in **Chapter 10: Noise and Vibration** has been assumed.

5.7.53 At this stage in the design, it is not confirmed if piling activity or other significant vibration generating activities will be required during the construction of the Proposed Development. It has been assumed that piling will be required for the construction of the proposed commercial and industrial uses. It has also been assumed that if piling is required in the vicinity of residential dwellings, auger piling will be used.

5.7.54 All noise generating activities have been assumed to be operational 24 hours per day.

Trains

For the purposes of the noise assessment undertaken and to determine parameters for that assessment, the following assumptions have been made regarding rail provision:

Freight

- A total of 6 trains in and out (12 movements) during the daytime (07:00 – 23:00);
- A total 4 trains in and out (8 movements) during the night-time (23:00 – 07:00);
- Freight Class is Locomotive Diesel Class 60 with 30 tread braked 4 axle tank wagons, with a total length of 750 metres; and
- Freight train speed is 20kph.

Passenger

- A half hourly train for passengers during the daytime, dropping to one at night;
- Train type is Class 166 DMU; and
- Train speed is 100 kph.

Rail Infrastructure

Plant

5.7.55 We will assume the following plant and %on-time. On time is defined as the percentage of time during a typical hour that the plant would be emitting noise.

Plant	Height (m)	On time (%)
Gantry Crane – Movement (drive, trolley and Hoist Motors	18	75
Gantry crane – broadband alarm	3	75
Gantry crane – spreader impact	6	75
Gantry crane – container placement	6	75
Reach stacker	1.5	100
Telehandler	1.5	100

Air Quality Assumptions

5.7.56 The year 2032 has been identified as the assessment year for operational effects. Therefore, to take account of uncertainties relating to future year vehicle emissions and background pollutant concentrations to provide a conservative assessment, the assessment has been carried out utilising 2030 emission factors and background concentrations combined with traffic data from 2032 (which includes full development flows). This is considered a conservative assumption of emissions in the future.

5.7.57 Emissions from the onsite energy plant and industrial plant have been modelled using the Breeze AERMOD atmospheric dispersion modelling programme. At this stage the exact emission parameters from the onsite plant are not known, details on the modelling methodology, model input parameters and assumptions are summarised in **Appendix 11.4** of **Chapter 11: Air Quality.**

5.7.58 The model assumes that emissions from the energy plant are released from the same flue. At this stage the height and location of the flues are not know and therefore the flue has been modelled at heights of 3m, 10m and 25m from the roof height of the building (35m) as set out in the parameter plans.

5.7.59 The assessment has been undertaken assuming that there will be no reduction in baseline deposition in the future, as this is not accounted for within the APIS website predictions. Reductions in baseline deposition are likely to occur because of improvements in background pollutant concentrations in the future, partly from reductions in vehicle emissions.

5.7.60 The APIS data does not include future year predictions and therefore on a conservative basis, the APIS baseline is assumed constant for the future year assessments.

5.7.61 The IAQM guidance states that trackout may occur for distance of up to 500 m from large sites. As the demolition and construction traffic routing is currently unknown, the worst-case assumption has been made that all main roads may potentially be used by HGVs leaving the Site entrance(s).

5.7.62 Energy plant assuming a NOx emission ceiling of 5g/s, industrial plant assuming a NOx emission ceiling of 10g/s.

Biodiversity Assumptions

5.7.63 It is important to note that the Site boundary represents a greater area of land compared to the boundary of the 2017 Planning Consent. As such, the LDO boundary contains areas that fall outside of the 2017 Planning Consent. Where areas fall outside of the 2017 Planning Consent, but within the Site, they are considered to be unchanged from their current state (as described within the 2020 survey work), except where reasonable changes can be predicted. As part of this, it is assumed that current land uses and management (e.g., farming practices such as cattle grazing) would continue.

5.7.64 Overshadowing will occur primarily in the northern areas of the Proposed Development where the buildings are tallest. Such effects are likely to be more pronounced on the immediately adjacent road, rail and hardstanding, however on a precautionary basis, it has been assumed that at least some shading of grassland over and above baseline will occur.

Water Environment Assumptions

5.7.65 In the absence of observed/recorded gauge data for watercourses on the Site, the hydraulic model used to assess floodplain extents is not calibrated and is therefore based upon a number of assumed parameters. As a result, there is a degree of uncertainty associated with the design flood levels. However, the modelling analysis has been undertaken in accordance with guidelines set out by the EA and using industry-standard methods. In addition, model sensitivity testing has been undertaken to understand the potential impact upon design flood levels caused by variation of model input parameters. On this basis, the flood levels estimated using the model are considered to be sufficiently robust to inform the FRA and preparation of this chapter of the ES.

5.7.66 It is assumed that Environmental Designations for the 2032 baseline will remain the same as the current state of the environment.

5.7.67 It assumed that the hydrogeology of the Site for the 2032 baseline will remain as per the same as the current state of the environment and that no DEFRA or EA designations have changed.

5.7.68 It is assumed that the Site will not be designated as a Source Protection Zone (SPZ) prior to 2032 based on Site and study area is currently not being designated.

5.7.69 Owing to the planning requirement to implement a Surface Water Management Strategy to serve the development and manage rainfall on site, it is assumed that surface water flood risk on site for the 2032 baseline scenario will be very low (<0.1% AEP).

5.7.70 Given that the underlying geology and hydrogeology will remain unchanged when compared to the current state of the environment, it is also assumed that the groundwater flood risk in the 2032 baseline will remain the same.

5.7.71 It is assumed that for the 2032 baseline condition, flood risk from reservoirs is to remain unchanged from the current state of the environment.

5.7.72 It is not possible to predict the status of the Huntspill for the 2032 baseline, however for the purpose of the assessment assuming the Huntspill achieves Good status by 2027 and maintains that to 2032 would form the basis of a conservative approach to assessing impacts. This approach is based on the Proposed Development being designed to support the objective to improve the status of the Huntspill.

5.7.73 In the 2032 baseline, the Site will still benefit from the existing surface water abstraction licences from the Huntspill River and King's Sedgemoor Drain. However, the 2017 Planning Consent did not propose utilising these abstractions to supply non-potable water to the Site, therefore for the purpose of the 2032 baseline condition it will be assumed that abstractions from the Huntspill River or King's Sedgemoor Drain no longer take place, despite the licences still being valid.

Landscape and Visual Assumptions

5.7.74 The 2017 Planning Consent includes planting proposals with 11 years of growth (planting has been assumed to be completed in winter 2021).

5.7.75 The vegetation clearance required in the north west corner of the Site for the rail yards (the extent of which is uncertain at this time but a worst case is assumed of clearance of the whole woodland area within the rail corridor and potential replacement of the rail bridge over the M5) and the introduction of the large scale construction equipment and emerging large scale built form of the Proposed Development which would occupy parts of the skyline in places and be perceived as a prominent feature in the landscape.

5.7.76 It is assumed that the National and District Level landscape character area background will not change between 2021 and 2032.

Assumptions in the Preparation of the 2032 Baseline

5.7.77 For the baseline 2032, in agreement with the arboricultural consultant's advice, it is assumed that tree growth for the planting proposals as part of the 2017 Planning Consent would be approximately 6-10m in the 11 years from 2021 to 2032. For existing vegetation present on the Site in 2021, tree growth would be assumed to be approximately 7.5-8m in 11 years, to a maximum height of 21 m, although in reality some species could be taller.

5.7.78 In 2032, it is assumed that:

- The extant 2017 Planning Consent for Huntspill Energy Park would have been constructed, along with the maturing planting proposals (in place for 11 years);
- The approved Village Enhancement Scheme would be completed, providing an off-road permissive path between the villages of Puriton and Woolavington for walkers and cyclists;

- Two emerging residential Approved Developments (one on the edge of Puriton and one at Woolavington) would be completed (maximum heights assumed at 11.5m for 2-2.5 storey houses which are referenced in the applications for both sites); and

- The Hinkley connection project pylon run would be complete.

Assumptions for the Proposed Development

5.7.79 For stacks and flues, given that the final details of stacks and flues is unconfirmed at this stage, our working assumption is that they would be located on the large commercial unit(s) and the EON site. There are two scenarios within the assessment; stack heights of up to 10 m above the height of the commercial unit(s) are normally required in such facilities, however, in some, exceptional circumstances, stacks of up to 25 m are required, plus or minus 2 m from existing ground level. Therefore, it is assumed that 10 m stack heights are the most likely but 25 m are also assessed, plus or minus 2 m from existing ground level (as shown on the building heights plan). The number of stacks cannot be fixed at this stage. It is assumed that stacks would include a medium intensity red aviation light located as close as possible to the top of the structure.

5.7.80 In agreement with the arboricultural consultant's advice, tree growth within structure planting is assumed to be between 8-11.5m in 15 years.

Climate Change Assumptions

5.7.81 It is assumed that the buildings of HEP will need to comply with the 2013 Building Regulations at the Reserved Matters stage.

5.7.82 As the 2017 Planning Consent required implementation of a Surface Water Management Strategy to serve the development and manage rainfall on site, it is assumed that surface water flood risk on site for the 2032 baseline scenario will be very low. Risk from groundwater and reservoir flooding also remains unchanged from the current state of the environment.

Cultural Heritage Assumptions

5.7.83 Data used to compile this assessment consists of information derived from a variety of sources, only some of which have been directly examined for the purposes of this study. The assumption is made that this data, as well as that derived from other secondary sources, is reasonably accurate.

5.7.84 For the basis of this assessment, a conservative scenario has therefore been assumed whereby any below ground archaeological remains will be entirely lost.

5.8 Cumulative Effects

5.8.1 Given the approach as set out above, approved developments (or those considered likely to have been approved and implemented by 2032) are factored into the 2032 baseline, and therefore the assessment of likely significant cumulative effects with these developments is inherent to the assessment and is not reported separately.

5.9 Assessing Effects

Assessing Demolition and Construction Effects

5.9.1 The EIA has assessed the likely significant environmental effects that could occur during demolition and construction. The assessment of likely significant environmental effects during the construction phases has been based on available information and reasoned judgements

based on professional experience to enable the likely significant environmental effects to be identified.

5.9.2 Construction effects are likely to be temporary and intermittent, i.e. works will not occur in one location throughout the entire duration of the construction works. It should be noted however that construction works are considered to be temporary, however they could continue throughout the life of the LDO (up to 2032). The potential duration and intermittency of effects is identified as appropriate in the ES **Chapters 7-16** based on the information provided in **Chapter 4**.

5.9.3 In judging the significance of demolition and construction effects, it has been assumed that the DCEMP will be implemented to adequately address mitigation measures in relation to demolition and construction effects identified within **Chapters 7-16**.

Assessing Operational Effects

5.9.4 To provide an assessment that is generally consistent between topic chapters, the EIA has focused on assessing the likely significant environmental effects of the overall Proposed Development as shown on the Parameter Plans. This includes the assessment of both the beneficial and adverse effects of the proposed development.

The Risk of Major Accidents and/or Disasters

5.9.5 The Council agrees that the probability of natural disasters and major accidents can be scoped out of the ES. In respect of major accidents and disasters, those cited in the ES Scoping Report related to potential accidents during construction, a major flood event, road traffic accidents and pollution incidents. The Scoping Opinion requested that a clear cross-reference should be included in the ES to the relevant topic where the relevant information in relation to these potential risks are covered. These are as follows:

- Construction impacts – see **Chapter 9 Transport and Access; Chapter 10 Noise and Vibration;** and **Chapter 11 Air Quality;**
- A major flood event – see **Chapter 13 Water Environment;**
- Road traffic accidents - see **Chapter 9 Transport and Access**;
- Pollution incidents - see **Chapter 4 Demolition, Construction and Site Management;** and **Chapter 13 Water Environment**.

5.10 Uncertainty and Limitations

5.10.1 The prediction of future effects inevitably involves a degree of uncertainty. In addition, given the flexibility required for this market-led LDO, the assessment is based on Parameter Plans and therefore there will be uncertainty on the detail of the nature of development being proposed. Where necessary, the technical chapters describe the principal factors giving rise to uncertainty in the prediction of likely significant environmental effects and the degree of the uncertainty.

5.10.2 Confidence in the predictions has been achieved by employing accepted assessment methodologies. Uncertainty inherent within the prediction has been described. The ES has sought to provide a robust assessment of the likely significant effects of the Proposed Development through the assessment of the Parameter Plans which show the maximum parameters of Proposed Development.

5.10.3 The COVID-19 global pandemic has had some implications for collecting and interpreting baseline data. Where applicable, this has been highlighted in the technical chapters, with

information provided on the proposed approach to address the implications and how these have been agreed with consultees (**Chapter 7-16**).

5.11 Mitigation

5.11.1 The incorporation of mitigation measures, which are measures to avoid, minimise or compensate for likely significant adverse effects, is an integral part of the design and EIA processes.

5.11.2 The EIA Regulations require an ES to contain: *"A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment".*

5.11.3 A hierarchy of methods for mitigating significant adverse effects have been be followed; these are, in order of preference:

- **Avoidance** – designing the Proposed Development in such a way that avoids effects on the environment (e.g., avoiding siting large scale commercial development in close proximity to existing residential communities.);
- **Reduction** – design the development or employ construction methodologies such that significant effects identified are reduced (e.g. deployment of strategic landscaping to reduce visual impact); and
- **Compensation** – providing off-site measures to compensate for harm where onsite mitigation has not been possible or sufficient (e.g., financial contributions towards local infrastructure managed through the locality investment plan via business rates retention and recycling into implementation and delivery).

Embedded Mitigation

5.11.4 There is a distinction between mitigation that is incorporated or 'embedded' into the design of the development (embedded mitigation) and mitigation that is subsequently identified to prevent, reduce, or offset any remaining significant adverse effects (further mitigation). Embedded mitigation may include, for example, the range and or colour of materials in large scale buildings to mitigate visual effects, or incorporation of sustainable drainage attenuation.

5.11.5 Embedded mitigation evolves through the iterative design process and early consideration of the likely significant impacts is essential to incorporating suitable embedded mitigation measures.

5.11.6 As part of the design process that informed the LDO, suitable mitigation measures were incorporated into the Proposed Development to mitigate potentially significant environmental effects. This mitigation is termed "embedded mitigation" and has been considered within each of the assessments in this ES.

5.11.7 The Design Guide identifies design principles for a deliverable scheme that responds to the Site's technical constraints and opportunities. Mitigation set out in this ES has been incorporated into the Design Guide.

Further Mitigation

5.11.8 Further mitigation measures are defined as those which require additional activity to be achieved to either reduce environmental impacts and/or to support achieving local and national policy requirements, are identified through carrying out assessments and inform management plans to be operationalised, and do form part of the scheme development. For

example, this will include specific measures to control environmental effects through construction environmental management or travel plans.

5.11.9 Further mitigation measures have been identified through the EIA process. Such mitigation is identified in this ES along with how they are proposed that they be secured, for example the Design Guide.

5.11.10 The embedded mitigation and further mitigation for the Proposed Development is set out in **Section 7** and **Section 9** respectively within each topic chapter.

Enhancement

5.11.11 The EIA Regulations do not require an Environmental Statement to document any enhancement measures that may be delivered by a developer or a development. However, it is valid to capture and report on positive outcomes that are sought to meet the policy tests of the local planning authority, for example in responding the climate change, economic development, Bridgwater Vision and the requirement to agree local labour agreements.

5.11.12 As such any enhancement measures delivered by the Proposed Development are not identified in this ES (or relied upon in judging the significance of effects) unless such enhancement measures are a fundamental part of the Proposed Development that are consented as part of the LDO (enhancing public transport accessibility through the reinstatement of the rail head, economic transformation, positive climate action, employment and skills).

5.12 Residual Effects

5.12.1 Residual effects are the likely significant environmental effects that remain after mitigation measures have been incorporated and secured through the LDO process. Therefore, the mitigation proposed by the development will ensure that the identified unmitigated effects will not occur in practice. These are fully described in the ES.

5.12.2 To provide an objective assessment of residual effects the significance of residual effects has been determined and is identified in the ES. This allows for comparison of likely significant effects between topics and also strengthens the assessment of impact interactions.

5.13 Significance Criteria

5.13.1 The EIA Regulations require that the ES describes likely significant effects of the Proposed Development. However, there is no legal definition of a likely significant environmental effect and interpretations differ. In accordance with the European Commission's Guidance on Scoping (2017), this ES will provide information on those effects that will influence decision-making or those where there is uncertainty about their magnitude. This approach is consistent with best practice for EIA in the UK.

5.13.2 The significance of an effect is typically the product of two factors: the value of the environmental resource affected and the magnitude of the impact, while consideration may also need to be given to the likelihood of an effect occurring. A significant effect may arise as a result of a slight impact on a resource of national value or a severe impact on a resource of local value. In addition, the accumulation of many non-significant effects on similar local resources geographically spread throughout the scheme may give rise to an overall significant effect on a receptor. An example of this might be the loss of ecological habitat of low value at many locations.

5.13.3 This approach to assessing and assigning significance to an environmental effect relies upon such factors as legislative requirements, guidelines, standards and codes of practice, consideration of the EIA Regulations, the advice and views of statutory consultees and other

interested parties and expert judgement. The following questions are relevant in evaluating the significance of likely environmental effects:

- Which risk groups are affected and in what way?
- Is the effect reversible or irreversible?
- Does the effect occur over the short, medium, or long term?
- Is the effect permanent or temporary?
- Does the effect increase or decrease with time?
- Is the effect of local, regional, national, or international importance?
- Is it a positive, neutral, or adverse effect?
- Are health standards or environmental objectives threatened?
- Are mitigating measures available and is it reasonable to require these?

5.13.4 Specific significance criteria have been prepared for each specialist topic as appropriate, based on the above and the generic criteria set out in **Table 5.1**.

5.13.5 Effects that are described as 'substantial, 'major or 'moderate' are determined to be *significant*; and effects that are described as 'minor' or 'negligible' are determined to be *not significant*.

	Level of Effect	Criteria
Significant	**Substantial**	These effects are assigned this level of significance as they represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites and features of national or regional importance. A change at a county scale site or feature may also enter this category.
	Major	These effects are likely to be important considerations at a district scale and may become key factors in the decision-making process.
	Moderate	These effects, while important at a local scale, are not anticipated to be key decision-making issues.
Not significant	**Minor**	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process.
	Negligible or No Effect	These effects are imperceptible, or within normal bounds of variation, or in the margins of forecasting errors. Such effects should not be considered by the decision-maker.

Table 5.1 Significance Criteria

5.14 Impact Interactions

5.14.1 **Chapter 17** provides the assessment of impact interactions, i.e. receptors being affected by more than one environmental effect and therefore potentially being subject to a more significant combined effect than the individual effects reported in each of the topic chapters.

5.14.2 The approach adopted for the assessment is in accordance with the methodology set out above, with further details provided in **Chapter 17**.

5.15 Monitoring

5.15.1 The 2017 EIA Regulations introduce the requirement for the monitoring of significant residual adverse environmental effects and that a schedule of proposed monitoring should be set out in an ES.

5.15.2 Each chapter of the ES therefore identifies the proposed monitoring arrangements, which should be proportionate, for any residual significant adverse effects identified. A summary of mitigation and monitoring requirements identified in each topic chapter is provided in **Chapter 18**.

6 Planning Policy Context

6.1 Introduction and Background

6.1.1 The Gravity Site has a long contextual history. The Site was shut by BAE Systems in 2008, following sole occupation and operation as a manufacturing facility of national importance. Sedgemoor District Council (SDC) took the opportunity to ensure that the Site would deliver maximum benefit on its redevelopment, in accordance with an economic development led strategy to transform the local economy. This was necessary due to a number of industrial closures at the time, resulting in significant employment loss. Economic evaluation at the time, and indeed since, has illustrated the low value – low wage nature of the Sedgemoor economy and the employment reliance on sectors which are at risk in the future from decline and employment loss due to economic restructuring as well as advances in automation and robotics. It is therefore vital to consider the Site as part of a wider local, regional and national policy and delivery context.

6.2 Key Local Policy and Strategy Context

6.2.1 From a locality perspective it is important to note SDC's corporate priority for inward investment and growth, as well as the drive for transformation through SDC's economic development strategy, most recently refreshed in September 2020, and the Bridgwater Vision within which Gravity is identified as a key transformational project. In this context these economic led considerations and the relevant economic development policies associated with them should be afforded significant weight within the assessment of the scheme.

6.2.2 SDC's Corporate Strategy 2020 – 2021 identifies Growth & Infrastructure as one of the three priority themes to deliver all their corporate objectives. In particular, the priority to grow the economy of Sedgemoor will be achieved by ensuring supply of employment land, encouraging businesses to locate to Sedgemoor and working to increase the skill level of the workforce. Gravity will support the delivery of all of these objectives. Similarly, objectives such as working toward carbon neutrality by 2030, delivering the housing programme, creating additional leisure opportunities and creating a clean and healthy environment to promote wellbeing are also all aligned with Gravity's own vision and objectives, particularly through the Clean and Inclusive Growth Strategy.

6.2.3 SDC's Economic Development Strategy 2020 – 2050 explains that by 2050 Sedgemoor will be a clean growth and energy link on the M5 "Innovation Highway" which connects an environmental, health and marine digital hub to the south and a high-tech transport, cybersecurity, health, and data-driven hub to the north. The Economic Development Strategy identifies the prominence of Gravity as the key project within the District and states that it offers further long-term opportunity for the transformation of Sedgemoor's economy.

6.2.4 The Strategy confirms Gravity's vision is wholly aligned with the UK and local industrial strategies and the Build Back Better plan for growth, in aiming to drive productivity through the delivery of an internationally leading innovation campus that is underpinned by clean growth. The Strategy confirms that Gravity will support high-value business across: low carbon energy generation; manufacturing; electric vehicles; robotics; artificial intelligence, data analytics, R&D and the creative industries. Importantly the Strategy also notes that Gravity will not only create an inclusive environment, with leisure facilities and amenities accessible to both employees and the wider local community, but its development will ensure design and economic activity that does not compromise the quality of the natural environment.

6.2.5 Somerset's Climate Emergency Strategy, developed jointly by the five Somerset local authorities, sector experts and external partners, was formally adopted by all five Somerset Councils in November 2020. The aim of the strategy is to reduce carbon emissions in the county and make Somerset a county resilient to the inevitable effects of Climate Change. The

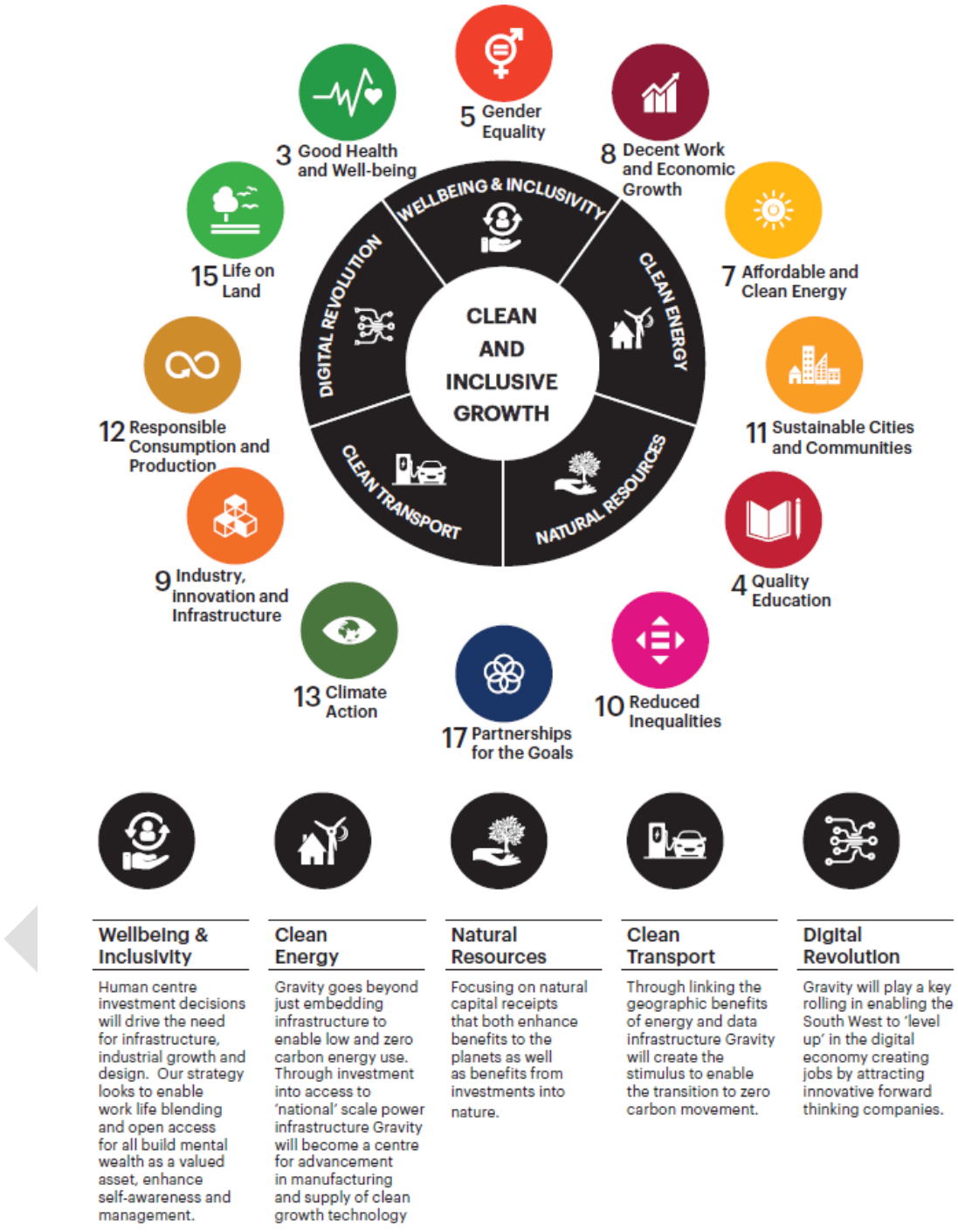
strategy sets ambitious goals for Somerset to become a carbon neutral county by 2030 and also outlines what the five Councils intend to do to address the most important issues around the Climate Emergency. The declarations made within the Climate Emergency Strategy include achieving carbon neutrality by 2030 and building resilience for, or adapting to, the impacts of a changing climate. The Strategy describes many objectives which are aligned with Gravity and describes a number of benefits linked to delivering development in this way across economic, social, and environmental areas.

6.2.6 From a wider perspective, the temporary nature and impact of nationally significant infrastructure projects (NSIPs), including Hinkley Point C and its Connection Project, in creating investment and confidence in the locality, and drawing in labour from the wider region, is relevant to the ambition and transformational nature of the Gravity site in securing long term and positive change to sustain employment into the future. Whilst NSIPs are linked to the local plan through the need for mitigation, these projects effectively sit within a parallel planning regime. Nonetheless, their presence and impacts on the locality and its economy is a key factor to consider in the economic assessment to ensure legacy and continuing benefit as well as labour force transition.

6.2.7 The Gravity site was designated as an Enterprise Zone (EZ) in 2015, becoming live in April 2017 and operational as an EZ in April 2017. At that point the local authorities (Sedgemoor District Council, Somerset County Council) and the Heart of the SW LEP signed an MoU with government regarding the priorities for delivery of the site and linked to an Implementation Plan. That Implementation Plan originally indicated that delivery should commence on the site in early 2020, so delivery is already behind schedule meaning the delivery of the proposed LDO is also a priority in terms of the delivery of the EZ.

6.2.8 Gravity is also ensuring that the project's journey aligns to global standards including the UN Sustainable Development Goals (UNSDG) through embedding Environmental and Social Governance (ESG) practices into the Gravity Clean and Inclusive Growth Strategy. Evaluation of the UN SDGs has resulted in 12 goals being identified as highly relevant and applicable to Gravity, and these have been organised into five key themes as set out below in **Figure 6.1**.

Figure 6.1: Five Key Environmental and Social Governance Themes



6.2.9 This section sets out the various local policy documents which consider and have influenced the planning process for the Site and summarises the planning history of the Site.

6.3 Policy Hierarchy

6.3.1 The Sedgemoor Development Plan is made up of the Sedgemoor Local Plan 2011-2032. It is supported by a suite of Supplementary Planning Documents (SPDs) and other adopted strategies and guidance. The Sedgemoor Local Plan sets out the policy framework for future

development in the District, including provision of housing, employment, retail and other facilities and infrastructure. It was adopted in February 2019. It therefore forms part of the development plan for the District and is a main consideration in the determination of planning applications with appropriate weight therefore being afforded to those policies ahead of any out of date or older policy documents. A neighbourhood plan is currently in preparation following designation, but this is at a relatively early stage in preparation with consultation on a draft still to take place.

6.3.2 The Local Plan relates to the whole District and provides a strategy for delivering growth up to 2032. Below the Local Plan sit a number of adopted SPDs, including an SPD relating to the Site itself to which limited weight should now be afforded, strategies (including the Sedgemoor Transport Investment Strategy 2050, for example) and guidance. The National Planning Policy Framework (the Framework) is also a key material consideration in decision making in Sedgemoor. Specific to the topic of waste is the Somerset Waste Core Strategy, which covers the entire county. The Local Plan and pertinent associated considerations for the Gravity LDO, starting with the national context and the Framework, are set out below.

6.4 Build Back Better: our plan for growth

6.4.1 The aim of the UK Industrial Strategy was to boost productivity by backing businesses to create good jobs and increase the earning power of people throughout the UK with investment in skills, industries and infrastructure.

6.4.2 In the 4 years since the strategy was published, the UK's business and economic environment has changed. Creating and supporting jobs remains the Government's central economic focus, but helping to drive growth in existing, new and emerging industries is also a priority. This is why the policy approach transitioned the Industrial Strategy into the Plan for Growth and its related strategies in March 2021.

6.4.3 The plan to build back better takes a transformational approach, tackling long-term problems to deliver growth that creates high-quality jobs across the UK and makes the most of the strengths of the Union. The plan states that we must retain our guiding focus on achieving the people's priorities: levelling up the whole of the UK, supporting our transition to net zero, and supporting our vision for Global Britain. Sedgemoor is itself identified as a Tier 1 priority area for levelling up.

6.4.4 The Plan states that this will be achieved by building on three core pillars of growth, across infrastructure, skills and innovation. These pillars are heavily focused on levelling up, linked to the Government's 10 Point Plan for a Green Industrial Revolution and driving long-term productivity improvements.

6.4.5 Gravity is particularly well placed to support these objectives, which are well aligned with the Clean and Inclusive Growth Strategy and the objectives therein. In particular a number of the Gravity 50 objectives set out within the Clean and Inclusive Growth Strategy are directly aligned with the Government's 10 Point Plan.

COP26

6.4.6 The Government acknowledges that the threat of climate change demands a step change in both the breadth and scale of ambition globally, as well as domestically. In November 2021, the UK will host the UN's annual climate change conference, COP26, in Glasgow, where the UK's leadership in tackling climate change, including in transport, will be showcased on a global stage. The Government has committed that the UK will continue to work with all to increase climate action, build resilience and cut emissions. They state that at COP26 they will bring together governments, cities, industry, businesses, and civil society to deliver shared high ambition and accelerate the shift to a zero-carbon future.

Clean Growth Strategy

6.4.7 Sitting beneath the Build Back Better Plan are 4 Grand Challenges focused on the global trends which will transform our future, of which Clean Growth is one. Clean growth means growing our national income while cutting greenhouse gas emissions. Achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK's Industrial Strategy. It will increase our productivity, create good jobs, boost earning power for people right across the country, and help protect the climate and environment upon which we and future generations depend.

6.4.8 In addressing the Clean Growth Grand Challenge Government state that it is the intention to maximise the advantages for UK industry from the global shift to clean growth – through leading the world in the development, manufacture and use of low carbon technologies, systems and services that cost less than high carbon alternatives.

6.4.9 The move to cleaner economic growth – through low carbon technologies and the efficient use of resources – is one of the greatest industrial opportunities of our time. By one estimate, the UK's clean economy could grow at four times the rate of GDP. Whole new industries will be created and existing industries transformed as we move towards a low carbon, more resource-efficient economy. The UK has been at the forefront of encouraging the world to move towards clean growth and the UK Government is determined to play a leading role in providing the technologies, innovations, goods and services of this future.

6.4.10 The Gravity Vision and various associated Strategies, including the Clean and Inclusive Growth Strategy, are focused on addressing this Clean Growth Grand Challenge whilst delivering an exemplar project and template for future development to support the UK in addressing the core elements of the Strategy whilst delivering transformational growth and supporting levelling up objectives.

Decarbonising Transport: A Better Greener Future

6.4.11 Transport is the largest contributor to UK domestic greenhouse gas (GHG) emissions, responsible for 27% in 2019. International aviation and shipping are not included in this figure. Domestic GHG emissions from transport have been broadly flat for the last 30 years, even as those of other sectors have declined. Better engine efficiency has been made up for by increasing numbers of journeys; the growth of electric and hybrid vehicles has been made up for by the growth in diesel and petrol SUVs. The UK must deliver a step change in the breadth and scale of our ambition on transport emissions to reach net zero. The measures we use to decarbonise transport must also deliver the vast wider benefits available during this change, improving air quality, noise, health, reducing congestion and delivering high-quality jobs and growth for everyone right across the UK. The need to limit global warming to well below 2°C and to pursue efforts to limiting to 1.5°C means the UK Government is committed to moving as far, and as fast, as possible. The document, Decarbonising Transport: A Better Greener Future sets out the Governments plans to deliver on these commitments.

6.4.12 "Decarbonising Transport: Setting the Challenge", published in March 2020, brought together existing work to reduce emissions across all forms of transport, and for the first time laid out the scale of the additional reductions needed to deliver transport's contribution to legally binding carbon budgets and delivering net zero by 2050. Sixteen months on, Decarbonising Transport sets out how the UK will deliver those emissions reductions and the associated benefits that will be realised from it across the UK. In preparing this document Government have engaged extensively with a large range of stakeholders to inform development of the plan including through virtual workshops, written contributions, online feedback, and the Net Zero Transport Board.

6.4.13 Given the rate of technological advancement and uncertainty in the precise mix of future zero emission solutions, and the probability of significant changes in travel behaviour over the

years ahead, the plan cannot precisely plot each individual step to fully decarbonising transport modes over the next 30 years. It does however set out a series of actions and timings that will decarbonise transport by 2050 and deliver against carbon budgets along the way. The government has committed to stretching carbon reduction targets up to the end of the Sixth Carbon Budget in 2037 and by 2050. As the largest emitting sector, transport will need to make a sizeable contribution if these targets are to be met. Depending on progress in the sector at some point(s) this may require additional targeted action (such as steps to reduce use of the most polluting cars and tackle urban congestion) to enable these targets to be met. The plan states that the Government will regularly review progress against targets, continue to adapt and take further action if needed to decarbonise transport. They will publish reports on progress and review the pathway at least every five years.

6.5 Planning for the Future White Paper

6.5.1 The Planning for the Future White Paper, published in August 2020, described the challenge we face in the planning process as one which is an inefficient, opaque process delivering poor outcomes. The Paper describes that the planning system is central to our most important national challenges: tackling head on the shortage of beautiful, high quality homes and places where people want to live and work; combating climate change; improving biodiversity; supporting sustainable growth in all parts of the country and rebalancing our economy; delivering opportunities for the construction sector, upon which millions of livelihoods depend; the ability of more people to own assets and have a stake in our society; and our capacity to house the homeless and provide security and dignity.

6.5.2 However, the Paper describes that it is too complex given the planning system we have today was shaped by the Town and Country Planning Act 1947, which established planning as nationalised and discretionary in character. Since then, decades of reform have built complexity, uncertainty and delay into the system. It also notes that planning decisions are discretionary rather than rules-based with nearly all decisions to grant consent undertaken on a case-by-case basis, rather than determined by clear rules for what can and cannot be done. This makes the English planning system and those derived from it an exception internationally, and it has the important consequences of increasing planning risk, pushing up the cost of capital for development and discouraging both innovation and the bringing forward of land for development.

6.5.3 The Paper notes that planning system needs to be better at unlocking growth and opportunity in all parts of the country, at encouraging beautiful new places, at supporting the careful stewardship and rebirth of town and city centres, and at supporting the revitalisation of existing buildings as well as supporting new development. Part of the response to these challenges is to consolidate other existing routes to permission including simplified planning zones and enterprise zones to ensure efficiency in the delivery of important development, such as Gravity.

6.6 National Planning Policy Framework

6.6.1 At a National Level planning policy is set out within the National Planning Policy Framework, revised in July 2021 (the Framework). The Framework explains that the purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The Framework continues to explain that in order to achieve this aim the planning system has three overarching objectives; an economic objective; a social objective and an environmental objective. The framework must be read as a whole including footnotes and it is very clear that the UK Government Industrial Strategy forms a key part of it.

6.6.2 The Framework states, at paragraph 81, that significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs

and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future. This is particularly important where Britain can be a global leader in driving innovation, namely in the Grand Challenge areas set out within the Industrial Strategy (including artificial intelligence and big data; clean growth; future mobility), and in areas with high levels of productivity, which should be able to capitalise on their performance and potential. Planning policies should:

> a) set out a clear economic vision and strategy which positively and proactively encourages sustainable economic growth, having regard to Local Industrial Strategies and other local policies for economic development and regeneration;
>
> b) set criteria, or identify strategic sites, for local and inward investment to match the strategy and to meet anticipated needs over the plan period;
>
> c) seek to address potential barriers to investment, such as inadequate infrastructure, services or housing, or a poor environment; and
>
> d) be flexible enough to accommodate needs not anticipated in the plan, allow for new and flexible working practices (such as live-work accommodation), and to enable a rapid response to changes in economic circumstances.

6.6.3 At paragraph 83 the Framework also states that planning policies and decisions should recognise and address the specific locational requirements of different sectors. This includes making provision for clusters or networks of knowledge and data-driven, creative, or high technology industries, and for storage and distribution operations at a variety of scales and in suitably accessible locations.

6.6.4 It explains that these objectives should be delivered through the preparation and implementation of plans and the application of the policies in the Framework and that planning policies and decisions should play an active role in guiding development towards sustainable solutions. The Framework contains a presumption in favour of sustainable development which should be applied to both plans and planning decisions.

6.6.5 Under the heading of 'tailoring planning controls to local circumstances' at paragraph 51, the Framework explains that local planning authorities are encouraged to use Local Development Orders to set the planning framework for particular areas or categories of development where the impacts would be acceptable, and in particular where this would promote economic, social or environmental gains for the area.

6.6.6 In the context of building a strong and competitive economy the Framework states that planning policies and decisions should help create the conditions in which businesses can invest, expand, and adapt. The Framework explains that planning decisions should recognise that Sites to meet local business and community needs in rural areas may have to be found adjacent to or beyond existing settlements, and in locations that are not well served by public transport. In these circumstances it will be important to ensure that development is sensitive to its surroundings, does not have an unacceptable impact on local roads and exploits any opportunities to make a location more sustainable (for example by improving the scope for access on foot, by cycling or by public transport). Of particular relevance here, the use of previously developed land should be encouraged where suitable opportunities exist.

6.6.7 Importantly in the context of Gravity, significant weight should also be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. The approach taken should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future. This is described as being particularly important where Britain can be a global leader in driving innovation.

6.7 Bridgwater Vision

6.7.1 In 2009 SDC, working alongside a range of partners, published the first iteration of the Bridgwater Vision. The aim of the Bridgwater Vision was to develop a 'spatial' vision for Bridgwater in order to bring about transformation and help to create distinctiveness with a re-vitalised image and economic base, effectively repositioning the town over the subsequent 50-year period to 2060. The Vision for Bridgwater set out in the Bridgwater Vision explains that, *'In 2060 Bridgwater will be an energy conscious town known for its ambitious approach to sustainability and low carbon living. Bridgwater will be seen as a place that has been re-energised into a confident town…'.*

6.7.2 This first iteration of the Bridgwater Vision describes the Gravity Site as one of the key characters areas to deliver that Vision and one of the key transformational projects within the area, also reflected within the Local Plan. It explains that the Gravity Site will be a significant employment area linked to a renewable, low carbon energy source. It continues to describe that the employment area would benefit from on-Site rail links, a bespoke travel plan service for workers from Bridgwater town centre and the promotion of cycle tracks and footpaths through the Site providing links to Puriton, Woolavington and Bridgwater, encouraging greater use of non-vehicular transport modes.

6.7.3 The Bridgwater Vision also explains that opportunities to incorporate other uses on the Site would also be explored including leisure uses, key worker / specialist / market housing and areas of open space for recreation. Under a specific section of the report on housing on the Gravity Site the Bridgwater Vision states that housing development in this area would be dependent on the long-term future of the Site and that potentially new housing development could be linked to key worker accommodation, linked to specific employment opportunities on the Site.

6.7.4 In 2015 the Bridgwater Vision was refreshed to provide an update on the successes delivered over the intervening 6-year period. The story was positive with many successes and progress made toward delivering a number of the identified objectives and outcomes. Gravity continued to be identified as a priority, maintaining detail on SDC's ambitions for the Site, although it did state that at that point there was significant uncertainty about the future of this Site. The concept of Huntspill Energy Park was described, and the Vision anticipated it could be a significant employment development for B1 (business) and B2 (general industrial) energy related uses for the town linked to a renewable low carbon energy source.

6.7.5 The refreshed Vision explained that the then owner, BAE Systems, was considering initial ideas for potential energy uses, but that the Site could also provide a unique opportunity to the support services and industries related to a new generation of nuclear investment, possibly to accommodate foreign direct investment to supply components. Again, housing on the Site, or in its wider locale, was also considered dependent on the long-term future of the Site.

6.7.6 Both iterations of the Bridgwater Vision were adopted as a material consideration in the planning process and the transformational / priority schemes identified within it (including Gravity) are directly referenced in the Local Plan as a result. Given the clear direction given in the Framework that that significant weight should be placed on the need to support economic growth and productivity, the economic benefits that this transformational project will deliver should be afforded significant weight.

6.8 Sedgemoor Local Plan 2019

6.8.1 The current Sedgemoor Local Plan was adopted in February 2019 and does not contain any specific allocation at the site as it was considered to be a commitment, given planning consent was granted at the site (42/13/00010) in November 2017. The site is however still referenced positively within the Local Plan, in a number of places. Those relevant policies and policies

which relate to the site and aspects of it should be afforded the most weight in the planning policy consideration of the LDO.

6.8.2 Policy B1 supports and protects the transformational projects set out within the Bridgwater Vision with the Gravity site specifically mentioned as one of those projects under the 'Local Projects' banner. Policy B16 identifies the transport projects which are required to support the delivery of the Local Plan objectives and priorities for Bridgwater. Included within the list of priority transport schemes is the Gravity access road and reinstatement of the rail head at Gravity.

6.8.3 The Major Infrastructure Projects policies within the Local Plan also makes reference to the Gravity site. For the purposes of the Local Plan, Major Infrastructure Projects (MIP's) are defined as those infrastructure projects that would require Environmental Impact Assessment (EIA) as set out in Schedules 1 and 2 of the EIA Regulations 1999 (except predominantly residential schemes), and include those defined as Nationally Significant Infrastructure Projects (NSIP's) in the Planning Act 2008. In particular, energy generation at Gravity is identified as a potential MIP, given the significant areas of the site safeguarded for energy generating uses and the lack of any consent / detail regarding the specifics of that energy generation and its overall scale. This is no longer relevant to the proposition at Gravity through this LDO process however.

6.8.4 The approach taken in the Local Plan to consider the site as a commitment meant that the jobs to be delivered at the site did not have to be assessed in terms of any impact upon housing need within the locality, or to put it another way, the site under the current consent could deliver approximately 4000 jobs but there are no new homes planned to accommodate the workforce.

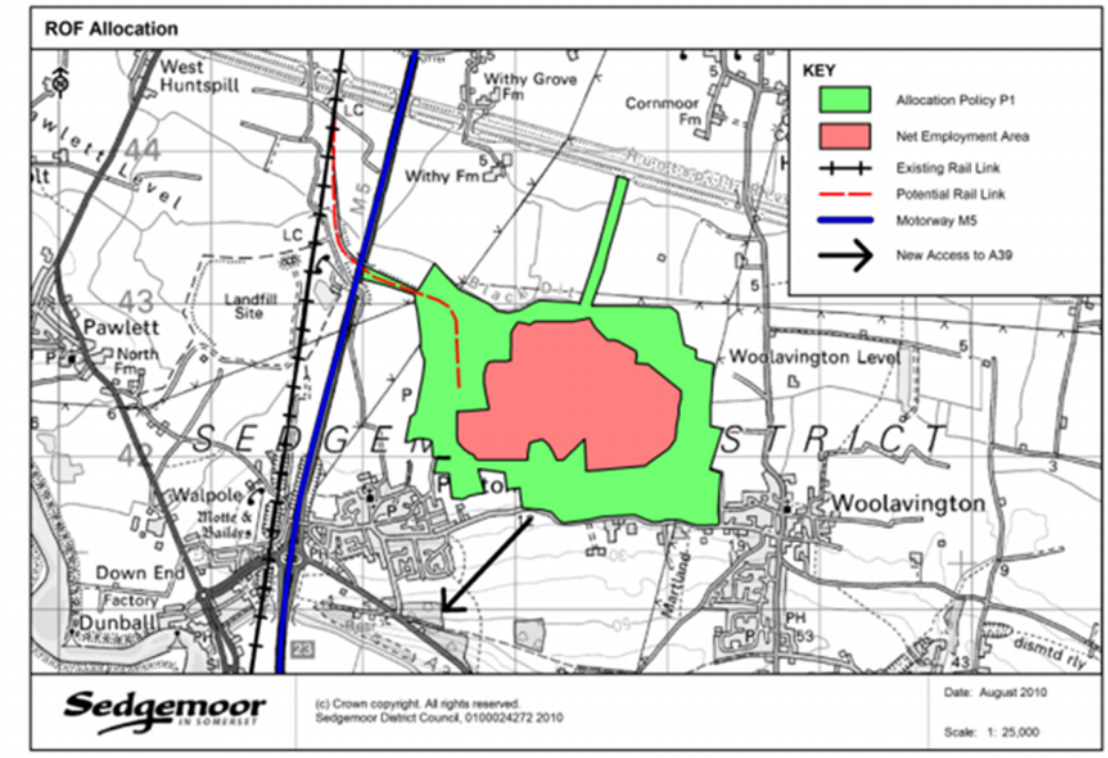
6.9 Core Strategy

6.9.1 The Sedgemoor Core Strategy was adopted in September 2011 and, although now superseded by the new Local Plan and of limited weight in terms of the planning considerations of the LDO, included an allocation for an 'Energy Park' on the Gravity site (Policy P1 Bridgwater), with priority given to industrial uses including renewable or low carbon energy generation and other energy-related or complementary uses, including green technologies, supply components and support services. This allocation was based upon assumptions made at the time regarding the opportunity the Site presented, without any market interface, and identified approximately 90 hectares of developable employment land for a range and mix of employment uses. **Figure 6.2** below is the allocation as identified within Sedgemoor Core Strategy. At this time, SDC's application for EZ status had not been made.

Figure 6.2: Site allocation plan included within SDC Core Strategy 2011

ROF Allocation Policy P1

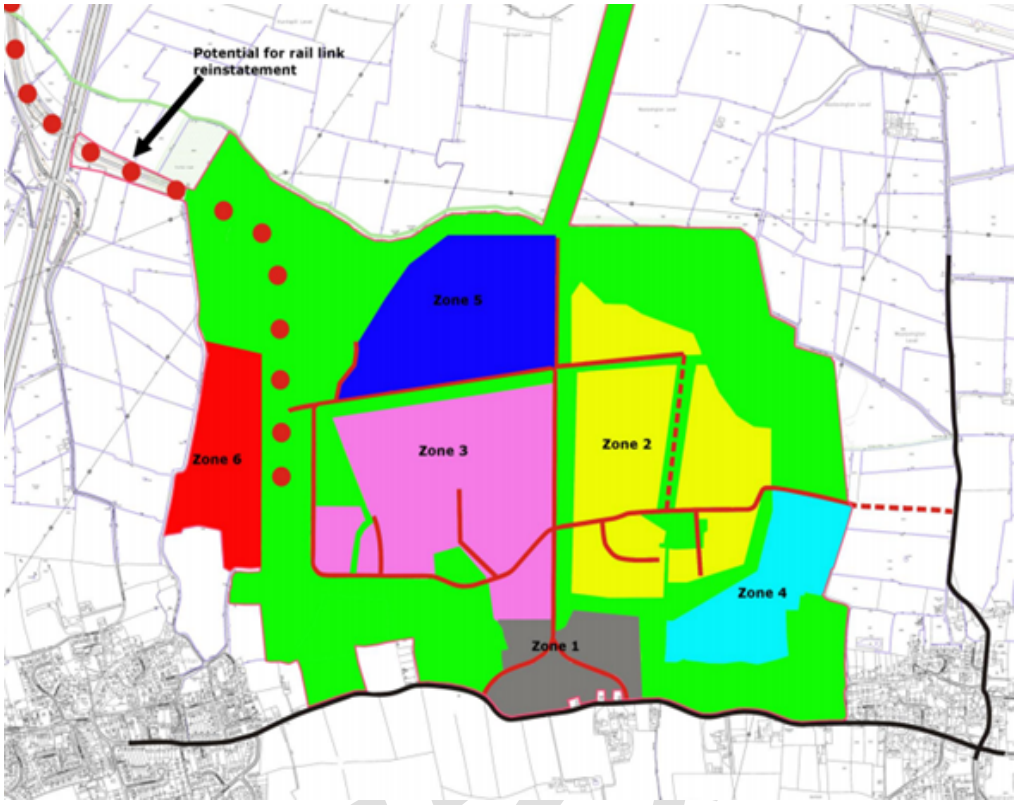
Map 13.2 ROF Allocation



6.10 Puriton Energy Park SPD

6.10.1 In order to elaborate and provide greater detail on policies within the Core Strategy relating to the 'Energy Park', SDC adopted the Puriton Energy Park SPD in March 2012. The SPD explains that the Site covers an area of 171 hectares within the enclosed security fence and that BAE Systems owned another 104 hectares of farmland surrounding the Site, outside the security fence. Therefore, the whole area the SPD covers is 275 hectares, which includes the now constructed solar farm to the west of the Site. This solar farm is no longer connected to Gravity. **Figure 6.3** below is an extract from the SPD and indicates the proposed developable areas and potential uses within each of those zones, as set out within the SPD.

Figure 6.3: Developable areas and use zones set out within the SPD.



Zones and Uses Key

- Zone 1 (Grey) – Commercial, community and recreational uses
- Zone 2 (Yellow) – Manufacturing, research and development
- Zone 3 (Pink) – Manufacturing, research and development, energy storage and logistics
- Zone 4 (Light Blue) – Green buffer
- Zone 5 (Dark Blue) – Major energy production
- Zone 6 (Red) – Solar Power Generation

6.10.2 The SPD provided a framework for assessing planning applications for the Site and focused on the main development objectives required to deliver the Energy Park. The SPD was informed by technical studies to gain an understanding of Site constraints and opportunities. The SPD is clear to stress that it does not set out full details of how the Site will be redeveloped, for example detailed building plans, road layouts and known end users. Instead, it sets out high level parameters against which detailed schemes submitted to SDC will be assessed. The SPD is therefore described as high-level planning tool that sets out the important requirements and considerations that should be borne in mind when preparing planning applications. Importantly, the SPD clearly states that it does not set out what the Site will ultimately look like or who will occupy it, which it states is the role of subsequent planning applications.

6.10.3 The SPD has been used at Gravity to date in order to inform the Strategic Design Code already approved for the existing hybrid consent at the site (42/13/00010) under Condition 29 attached pursuant to that consent.

6.10.4 Notwithstanding this, since 2012, much has changed in terms of the national policy and political context, with a new Framework, a stronger focus on EZ delivery, Industrial Strategy

and Clean Growth, The SPD is therefore somewhat outdated in places, however, does provide some valuable input in terms of design principles.

6.11 Relevant Sedgemoor Local Plan Policies

6.11.1 The following policies within the Sedgemoor Local Plan 2011-2032 are relevant to each of the topics covered in this scoping report.

Topics currently proposed to be scoped into EIA	
Topic	**Relevant Local Plan Policies**
Economics	S2 – Spatial Strategy for Sedgemoor CO3 – Brownfield Sites in the Countryside B1 – Bridgwater Vision Transformational Projects B7 Employment D15 Economic Prosperity D16 Safeguarding Existing Employment Land and Buildings ***Other relevant strategies/considerations:*** Sedgemoor Economic Development Strategy 2050 Bridgwater Vision
Health, Social and Wellbeing	S2 – Spatial Strategy for Sedgemoor B1 Bridgwater Vision Transformational Projects B14 Education B17 Servicing Facilities D2 Promoting High Quality and Inclusive Design D5 Housing Mix D6 Affordable Housing D7 Care Homes and Specialist Accommodation D25 Protecting Residential Development D27 Education Provision D28 Health and Social Care D34 Outdoor Public Recreational Space and New Residential Areas
Transport and Access	S3 Infrastructure Delivery S4 Sustainable Development Principles

	B16 Transport D13 Sustainable Transport and Movement D14 Managing the Transport Impacts of Movement ***Other relevant strategies/considerations:*** Sedgemoor Transport Investment Strategy 2050
Noise and Vibration	D24 Pollution Impacts of Development D25 Protecting Residential Amenity
Air Quality	S4 Sustainable Development Principles D24 Pollution Impacts of Development
Biodiversity	D20 Biodiversity and Geodiversity D21 Ecological Networks D23 Bat Consultation Zones D29 Protection and Enhancement of Existing Green Infrastructure Resources
Water Environment	S5 Mitigating the Causes and Adapting to the Effects of Climate Change B15 Flood Defence D1 Flood Risk and Surface Water Management
Landscape and Visual	D19 Landscape D22 Trees and Woodland D29 Protection and Enhancement of Existing Green Infrastructure Resources D30 Green Infrastructure Requirements in New Development
Climate Change	S4 Sustainable Development Principles S5 Mitigating the Causes and Adapting to the Effects of Climate Change
Archaeology and Cultural Heritage	D26 Historic Environment
Topics currently proposed to be scoped out of EIA	
Ground Conditions and Contamination	D24 Pollution Impacts of Development
Lighting	D24 Pollution Impacts of Development D25 Protecting Residential Amenity
Arboriculture	D22 Trees and Woodland

	D29 Protection and Enhancement of Existing Green Infrastructure Resources D30 Green Infrastructure Requirements in New Developments
Waste	Somerset Waste Core Strategy
Sustainability and Energy	S4 Sustainable Development Principles S5 Mitigating the Causes and Adapting to the Effects of Climate Change