Gravity

Smart Campus

Gravity LDO Environmental Statement

Volume 2 – Appendices

Appendix 3.2 Operational Waste Management Strategy

Gravity Local Development Order

Operational Waste Strategy

CONSULTATION DRAFT

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

Project Ref: 332310102 | Rev: DRAFT | Date: October 2021

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1 Introduction

1.1 Background

1.1.1 Sedgemoor District Council (SDC) intends to make a 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 Stantec UK Limited (Stantec) has been appointed by This is Gravity (herein "the Client") to produce an Operational Waste Strategy (herein the Strategy) to support the LDO.

1.2 The Purpose of the Strategy

1.2.1 This Strategy sets out the principles for how waste will be managed during the operational phase. It includes details of the measures to be taken during occupation in order to: minimise the amount of waste generated; re-use or recycle suitable waste materials generated; minimise the pollution potential of unavoidable waste and treat and dispose of the remaining waste in an environmentally acceptable manner.

1.2.2 It examines the relevant national and local waste policy that needs to be considered and estimates the levels of waste expected to be generated, in addition to proposing waste management strategies throughout the operational phases of the Proposed Development.

1.2.3 This approach is supported by the Mineral and Waste Policy Team at Somerset County Council (SCC) in their response to the ES Scoping Report, who stated that "*the clear objective to ensure waste and materials are managed effectively is supported".*

1.2.4 The detailed design and makeup of the Proposed Development is yet to be determined, and as such more detailed solutions will evolve, using the principles outlined in this Strategy, through the development phases.

1.2.1 This Strategy focuses on how waste is managed in the operational phase of the Proposed Development. Construction waste is considered in the Framework Demolition and Construction Environmental Management Plan (FDCEMP) which has been prepared to support the LDO, provided in **Appendix 4.1 of the Environmental Statement (ES)**, as well as the Site Waste Management Plan (SWMP), provided in **Appendix 3.3 of the ES**.

1.2.2 Wastewater is considered in **Chapter 13 - Water Environment** of the ES.

1.3 Site Location and Description

1.3.1 The Site comprises 261.54 hectares (646.29 acres) of land, of which approximately 250 hectares (616 acres) was part of the former Royal Ordnance Factory (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.

1.3.2 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 a result, there is very limited operational waste currently being generated on the Site.

1.3.3 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 A**.

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1.3.4 The Site is within ownership of This is Gravity Ltd and is within the administrative boundary of Sedgemoor District Council (SDC).

1.3.5 The Somerset Waste Partnership (SWP) is the waste collection and disposal authority, responsible for the household waste in their respective areas (Mendip, Sedgemoor, Somerset West, Taunton and South Somerset).

1.4 The Proposed Development

1.4.1 This is Gravity Ltd, known as 'Gravity', is proposed to be the UK's first commercial smart campus. The Site will include up to 1,000,000m^2 of floor space allocated to advanced manufacturing and a further 100,000m^2 of commercial buildings. In addition, the amenity zone in the south of the Site is expected to comprise restaurants, cafes, shops, leisure, and higher education facilities.

1.4.2 The different commercial operations that occupy the Site will each generate varied waste and recycling streams. The goal within Gravity will be to minimise all waste arisings in line with the Waste Hierarchy and to manage the remaining waste streams as efficiently as is practical to maintain the resource value of the waste for as long as possible.

1.4.3 Residential dwellings are also proposed on Site, producing household waste and recycling. This will be collected and processed in line with the statutory obligation that the local authority has to its residents. Therefore, the residential units will have their waste and recycling collected as part of the service provided by the Somerset Waste Partnership.

1.4.4 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 1,000,000m^2 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 100,000m^2 within Use Classes C1, C2, E (a) – (g) and 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.

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2 Principles of Waste Management at Gravity

2.1 Sustainable Waste Management at Gravity

2.1.1 Gravity is working closely with local waste management partners to help support the development and delivery of this Strategy. The partners are waste management companies located in the region which are able to provide access to a number of different waste treatment processes and associated expertise.

2.1.2 Throughout the Gravity Site the principles of Waste Hierarchy will be followed. In the first instance through waste minimisation, reducing waste through sustainable procurement. Then encouraging reuse wherever possible, prior to segregation of waste streams maintaining waste as a resource at its highest possible value for as long as possible prior to recovery.

2.1.3 Where it is not possible, either because of the waste type or the volumes present, to manage within the Gravity Site, the strategy will be to use more environmentally friendly methods (such as biomethane and CNG powered trucks) to transport the waste to the most suitable local sites, for reuse, recycling, recovery or ultimately disposal in line with the Waste Hierarchy.

2.1.4 The following will be used and embedded in all the actions proposed in the Strategy:

- Source Segregation & Control: segregate waste during activities by type to maximise the ultimate value of the waste stream;
- Engage and educate the tenants and their customers to minimise waste from all units while operational;
- In order to exceed current best practice standards, exemplar practices should be devised and adopted to minimise, segregate, store and manage waste streams, resulting in co-ordinated, efficient and financially rewarding collection regimes;
- If viable the adoption of automated waste management and collection;
- Industrial Symbiosis - promotion of the exchange of materials or waste streams between companies, so that one company's waste becomes another company's raw materials. Exchanges can be made with solid, liquid, and gaseous raw materials as well as surplus electricity, heat, and water; and
- Promote community sharing platforms to encourage reuse and repair centres.

2.2 Client Vision and Targets

2.2.1 This is Gravity has started the journey to waste minimisation. This includes the 4R's approach – aiming to Recover, Recycle, Repurpose and Reuse a vast range of natural and legacy resources. The remediation of the ROF achieved 100% landfill avoidance. Gravity will continue to deliver a comprehensive reduce, reuse, recover and recycle strategy from the construction platform through to operation of the campus.

2.2.2 Gravity is also ensuring that their journey aligns to global standards, including the UN Sustainable Development Goals (UNSDG) through embedding Environmental and Social Governance (ESG) practices. The Environmental and Social Governance policy, available on www.thisisgravity.co,uk, sets out corporate commitments and will guide the development of Gravity and its activities as whole. The ESG policies steer investment into clean and inclusive growth and have been developed to underpin a range of strategies that will deliver Gravity through planning, construction and onto operation of a world class facility.

2.2.3 Using the United Nations Sustainable Development Goals (UN SDGs) as a framework, the ESG policy identifies 12 primary goals over which, Gravity believe the planning and development process will have an influence. The ESG scope looks to drive best practice in actioning, measuring, monitoring and verification against these 12 UN SDG goals. One of the 12 chosen SDG's is number *12 - Responsible Consumption and Production*. Sustainable consumption and production is about doing more and better with less. It is also about decoupling economic growth from environmental degradation, increasing resource efficiency, and promoting sustainable lifestyles. SDG 12 will steer investment into clean and inclusive growth and will underpin the delivery of Gravity through planning, construction and onto operation of a world class facility. Figure 2-1 below provides a visual infographic representation of the goals within the ESG (of which includes the 4R's – Remove, Reduce, Reuse and Recycle).

Figure 2-1: ESG Policies and Goals Infographic

2.2.4 As part of the Clean and Inclusive Growth Strategy (CIGS), available at www.thisisgravity.co.uk, Gravity also aims to minimise the negative environmental and carbon impacts associated with resource extraction, use and disposal through lifecycle analysis and circular economy thinking. Emphasis will shift from low technology inefficient disconnected systems to a smart interconnected system that meets multiple demands simultaneously and repurposes waste products into the supply of another demand. One of the targets provided in this CIGS is that Gravity is working towards zero avoidable waste by 2030 across the Campus.

2.2.5 Gravity will also use industry benchmarking such as BREEAM Infrastructure and publicly available standards such as PAS 2080 Carbon Management in Infrastructure to verify the actions and commitments as part of the CIGS and ESG. These industry standards often include targets in relation to waste, such as promoting resource efficiency via the effective management and reduction of both construction and operational waste.

2.3 Design Guide

2.3.1 A Design Guide is also being submitted with the LDO for the Proposed Development. The Design Guide establishes the key spatial qualities and characteristics that will support the development of a cohesive and aspirational place whilst retaining flexibility for future development within the parameters of the LDO consent. It sets standards for future occupiers, enshrining placemaking from the outset.

2.3.2 In order to create a sense of place, unique to Gravity and unique to its location, the Design Guide discusses a number of aspects that help to achieve this. For example, "*recycling and refuse storage must be incorporated into the design of the front of homes, with bins hidden from sight and recycling storage easily accessible to encourage use*". The emphasis will be on compact, high-density housing and the ambition is for a sustainable, low carbon approach.

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3 Policy and Legislative Background

3.1 Introduction

3.1.1 This section provides a review of relevant policy and guidance in relation to waste to allow it to be appropriately considered within this Strategy.

3.2 European Policy

3.2.1 **The European Revised Waste Framework Directive** (2008/98/EC) amended May 2018, sets the framework for UK Waste Policy although the directive is enforceable only in EU member states. The Waste Hierarchy (demonstrated in **Figure 3.1**) runs throughout this policy and ranks waste management options according to what is best for the environment.

3.1 National Legislation and Policy

3.1.1 **The Environmental Protection Act 1990 (as amended)** defines the fundamental structure and authority for waste management and control of emissions into the environment. It legislates for:

- The meaning of waste
- The requirements of the duty of care in respect of waste and transferral of waste
- A prohibition on the unauthorised or harmful depositing, treatment, or disposal of waste on land
- Waste collection and waste disposal authorities and their roles.

3.1.2 **The Waste (England and Wales) (Amendment) Regulations 2014** make provision for waste prevention programmes and impose duties in relation to the improved use of waste as a resource, including the application of the waste hierarchy. Site Waste Management Plans[1] (SWMPs) are no longer mandatory for projects commencing after 1 December 2013. They are, however, recommended, and the principles behind the regulations remain best practice.

3.1.3 As a producer, the operator and residents of this development will be provided with opportunities to more easily reduce, sort and separate waste – for example, by separating the recyclable from the non-recyclable waste - before placing out the residual waste for disposal (or potentially energy recovery).

3.1.4 These regulations also aim to improve the quality and quantity of material being collected for recycling by placing a duty on waste collectors to enable recyclable material (particularly glass, paper, plastics, and metal) to be collected separately where it is necessary to support the recovery of high-quality recyclables and where this is technically, environmentally, or economically practicable (TEEP). Although this duty is specifically on the collectors of waste, it is important for any new development to consider the logistical impacts of separating out these materials.

[1] Department for Environment, Food and Rural affairs, 2008. Non-statutory guidance for site waste management plans. Site waste management plans: Guidance for construction contractors and clients: Voluntary code of practice - The Construction Information Service (ihsti.com) Accessed 17 February 2021

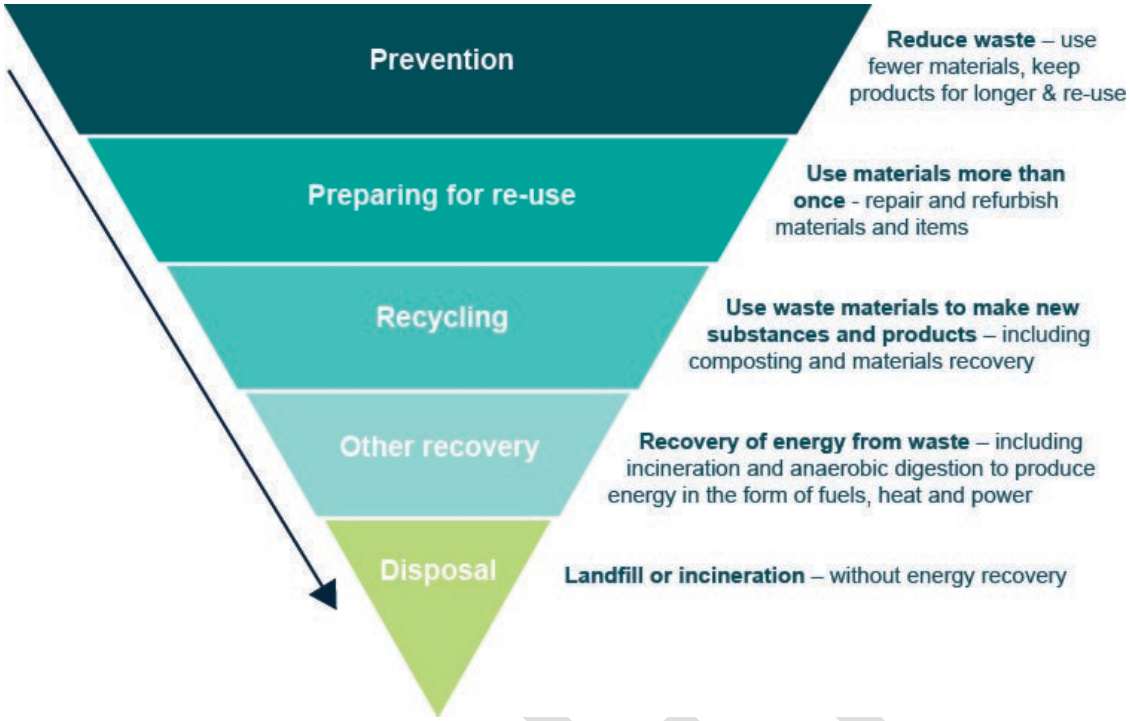

Figure 3-1: The Waste Hierarchy, Defra 2011

3.1.5 **Our Waste, Our Resources: A Strategy for England** (2018) assists the Government's commitment set out in the 25 Year Environment Plan, to leave the environment in a better condition for the next generation. This Strategy reaffirms the UK's commitment to the waste hierarchy and introduces the circular economy concept in relation to waste. It is guided by two overarching objectives: To maximise the value of resource use; and to minimise waste and its impact on the environment. The circular economy model encourages the recycling of resources through recovering and regenerating products and materials to keep resources in use for longer.

3.1.6 The Strategy highlights the Government's ambitious plans in relation to food waste. Households produce approximately 7 million tonnes of food waste annually, of which 5 million tonnes is categorised as edible. 'Reducing greenhouse gas emissions from landfill by ensuring that every householder and appropriate businesses have a weekly separate food waste collection'.

3.1.7 **Waste Management Plan for England (2021)** – The Plan serves to review the Waste (England and Wales) Regulations and together with waste local plans ensures that waste management plans are in place for the whole of the UK (inclusive of plans produced by the devolved administrations).

3.1.8 The focus of the Plan is on the management of waste arisings within England, with targets to ensure that a minimum of 65% of municipal waste is reused or recycled by 2035. A maximum of 10% of generated municipal waste can be disposed of in landfill by 2035.

3.1.9 The Plan provides an update of the latest compositional analysis of household waste, commercial and industrial waste, and construction, demolition, and excavation waste (CDE). This information helps to inform national, regional, and local waste management needs.

3.1.10 There continues to be a focus on all stakeholders to recognise waste as a resource and drive towards higher levels of higher quality recycling. The national government seeks to support local authorities in this by encouraging further segregation of recyclables wherever practicable. This includes proposals for mandatory food waste collections.

3.2 Local Policy

3.2.1 The Sedgemoor Development Plan is made up of the Sedgemoor Local Plan 2011-2032 and a suite of Supplementary Planning Documents (SPDs) and other adopted strategies and guidance.

Sedgemoor Local Plan 2011-2032 (adopted February 2019)

3.2.2 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 determination.

3.2.3 The Local Plan relates to the whole District and provides a strategy for delivering growth up to 2032.

Somerset Waste Core Strategy (adopted February 2013)

3.2.4 Specific to the topic of waste is the Somerset Waste Core Strategy, which covers the entire county.

3.2.5 The plan covers all of Somerset and all waste types and sets out the Council's proposed strategy on waste planning until the year 2028. It aims to help communities to minimise waste, maximise recycling and treat the remaining residual waste as a resource wherever possible. The Core Strategy emphasises the importance of collaboration, between waste managers, local authority planning officers, the Somerset Waste Partnership, businesses, and residents.

3.2.6 The Waste Core Strategy includes strategic policies in respect of waste prevention, recycling and reuse, other recovery from waste and disposal as well as a number of detailed development management policies that guide development.

3.2.7 The waste hierarchy is an important tool to inform decision-making about waste management options. The hierarchy is embedded throughout the Waste Core Strategy.

3.2.8 The vision for sustainable waste management in Somerset is a culture in which communities participate in waste prevention and in which unavoidable waste is managed as a valuable resource in innovative ways that:

- Strengthen the economic well-being of Somerset;
- Protect the county's unique environment and human health; and
- Reduce carbon emissions from waste management.

3.2.9 Relevant policies include:

WCS1: Waste Prevention

3.2.10 Somerset County Council, as Waste Planning Authority, will work with local residents, businesses and other partners to maximise the scope for waste prevention.

3.2.11 For Proposed Developments, this will mean working with Local Planning Authorities to promote and require the following supporting information to be submitted:

- A site waste management statement for the construction of minor development (less than 10 dwellings or where the floorspace to be created by the development is less than 1000m2); or

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- A site waste management plan for the construction of 10 or more dwellings or where the floor space to be created by the development is 1000m2 or more; or

- A site waste management strategy for the construction of large-scale major projects (200 or more dwellings or where the development covers more than 10,000 m2) or for multi-site projects within the same application.

WCS2: Recycling and Reuse

3.2.12 During the planning stages of residential and non-residential development, Somerset County Council (as Waste Planning Authority) will encourage the provision of adequate space and facilities – both within buildings and externally - that enables effective separation, temporary storage, and collection of waste. To do this, the County Council will:

- Work with the Somerset Waste Partnership to encourage developers to provide adequate space and facilities for waste separation and storage and access for waste collection in new and existing developments;

- Encourage District and Borough planning authorities to include relevant development management policies, conditions and/or guidance on waste separation and storage and access for waste collection; and

- Require effective access to be provided, via its highway standards, throughout new development for waste collection and recycling vehicles.

3.2.13 Applications for all types of development should demonstrate that viable opportunities to minimise construction and demolition waste disposal will be taken, making use of existing industry codes of practice and protocols, site waste management plans (as detailed in strategic policy WCS1) and relevant permits and exemptions issued by the Environment Agency.

3.2.14 Before considering inert landfill disposal, inert waste that cannot be reused or recycled on-site should be diverted off-site for recycling and/or the following beneficial uses, subject to the general considerations mentioned above:

- The restoration of quarries and other excavation sites (excluding peat sites);

- Other uses with clear benefits to the local community and environment; or

- Other facilities that will facilitate such positive use.

Towards a Climate Resilient Somerset - Somerset's Climate Emergency Strategy (Appendix 13 - CE Strategy Waste and Resources Sector Detailed Report) (adopted November 2020)

3.2.15 All Local Authorities in Somerset declared a Climate Emergency in 2019 and ensuring that new developments are built with recycling in mind is a key aspect of minimising waste and moving towards net zero emissions. Poorly designed bin storage results in lower levels of recycling and lower levels of engagement and satisfaction, whilst poor vehicular access can result in additional vehicle movements as crews attempt to access sites.

3.2.16 A Somerset-wide Climate Emergency Strategy was formerly adopted by SDC in November 2020. Somerset is seeking to become carbon neutral by 2030.

3.2.17 The key themes in Somerset's Draft Climate Emergency Strategy are energy, transport, built environment, business and industry, natural environment, farming and food, water, waste, and communications.

3.2.18 Within Somerset, domestic waste and recycling is managed by the Somerset Waste Partnership and Somerset is independently ranked as a 'Highflyer' (top 10% of Local Authorities) in England in carbon saving from its household waste and recycling services, saving 103kg of carbon equivalent per person. This is thanks not only to how much people in Somerset recycle, but how they recycle – separating their recycling so that it can be recycled properly.

3.2.19 However, Somerset's household and non-household waste contributes to a significant proportion of the region's carbon emissions. Currently, most emissions (>90%) derive from methane produced by the decomposition of biodegradable waste.

Somerset Waste Partnership - Planning homes with recycling in mind (guidance for developers) (updated Autumn 2020)

3.2.20 Somerset Waste Partnership (SWP) manages waste and recycling functions on behalf of the four District Councils (Mendip, Sedgemoor, Somerset West & Taunton and South Somerset) and Somerset County Council.

3.2.21 This guidance should be considered alongside the planning policies of the district councils and the adopted Somerset Waste Core Strategy, in particular, policies WCS1: Waste Prevention, and WCS2: Recycling and Reuse. SWP has the powers under Section 46 (Receptacles for household waste) and Section 47 (Receptacles for commercial or industrial waste) of the Environmental Protection Act 1990 to specify the type and number of containers to be used, and the location where the waste should be placed for collection.

3.2.22 A Design Checklist is provided, which should be considered in accordance with the emerging National requirements at each stage of the LDO. Guidance provided in the Design Checklist covers:

- Standard minimum requirements for waste storage;
- Storage requirements;
- Infrastructure requirements (Communal/Shared bin areas);
- Highways and Access requirements;
- Disabled access;
- Container requirements;
- Collection points and bin storage area locations; and
- Access for collection vehicles.

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4 Proposed Strategy for Managing Waste at Gravity

4.1 Introduction

4.1.1 This section sets out the initial estimated waste arisings and storage requirements for the operational phase of the Proposed Development. The estimated waste arisings have been made using conservative calculations.

4.1.2 The actual waste quantities and composition will be dependent on the commercial tenants themselves and their adherence to the Gravity approach to embedding the principles of the Waste Hierarchy throughout the Site and within the individual commercial units themselves.

4.2 Residential Waste

4.2.1 Somerset Waste Partnership (SWP) manages the household waste services on behalf of all authorities in Somerset along with many school waste collections. Waste is collected from over 250,000 households in the county.

4.2.2 Gravity will work closely with SWP to develop the detailed strategy for the residential element of operational waste.

4.2.3 Current material collected for recycling by SWP includes food waste, paper, card, tins, cans, aerosols, foil glass bottles and jars, plastics bottles, pot, tubs and trays, food and drink cartons, batteries, and electrical items.

4.2.4 This section details estimated waste arisings, and waste management storage and collection requirements that should be considered as the proposal develops.

Estimated Residential Waste Arisings

4.2.5 The average household in the SWP area currently produces approximately 1.01 tonnes of waste (including recycling) per year and recycling rates for household waste within SWP are currently ~ 53%. The Proposed Development will introduce an estimated 750 additional households thus generating an additional estimated 750 tonnes of household waste.

4.2.6 This represents an overall increase of 0.3% of household waste managed by SWP, illustrated in **Table 4-1**.

2019/20[2]	Somerset Waste Partnership (Collection Authority)
Total Household Waste (t)	255,739
Total Household Waste per Household (kg)	1,013
Forward predictions	
Number of new units	750
Total Generated Household Waste (t)	750

Table 4-1: Operational waste estimation from households

[2] Waste and Recycling Statistics (Department for Environment, Food and Rural Affairs), Local Authority Collected and Household Waste Statistics 2019/2020 England, SWP household- Household Total Waste (Tonnes)

Residential Waste Storage

4.2.7 To support closed loop material cycles, an appropriate source segregation strategy based on the likely quantities and types of waste to be generated and appropriate storage provision for the different materials streams is paramount to ensure uncontaminated materials are collected and processed.

4.2.8 All waste produced from the residential properties will be stored separately from any of the commercial element.

4.2.9 SDC's current waste storage guidance within the SWP - Planning Homes with Recycling in Mind (guidance for developers) document provides a Design Checklist for the inclusion of suitable waste storage which should be considered prior to the formal submission of a planning application. Household waste storage space for the Proposed Development will be developed as the Gravity Site proposal evolves, and by following appropriate guidance and consultation with SDC.

4.2.10 This will be reviewed at each stage of planning as being subject to change in line with local and national policy, and the forthcoming Environment Bill.

Internal Storage Capacity

4.2.11 Recycling should be encouraged through the provision of internal storage areas that should be designed into each residential unit. This will enable occupants to segregate their waste into recycling and general waste before it is transferred to external bins.

4.2.12 The size of the units should be sufficient to store a volume of waste that supports the Council's collection system.

4.2.13 It is recommended that no individual bin should have a volume less than 15 litres and that a minimum total capacity of 60 litres is provided by the developer. As an example, kitchen units could be designed with drawers or containers.

External Storage Capacity

4.2.14 The Proposed Development will be required to provide the appropriate amount of space into which the required external storage containers will fit. External storage containers must be in each property prior to occupation of that property and prior to the commencement of any Local Authority waste collection service.

4.2.15 The Developer may also be required to pay financial contributions to SWP in order to ensure the correct containers are provided for each residential unit.

4.2.16 The amount of space required, and the type of containers, will be agreed with SWP.

Waste Storage for Flats

4.2.17 SDC allows communal bin storage areas for flats, with the calculated recommended bin provision provided through the local guidance.

4.2.18 Any communal bin store must be on the ground floor and must be well-ventilated, covered and secured with a door.

4.2.19 Communal bin stores should be accessed using a code to prevent the requirement of a physical key.

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Collection & Servicing – Residential Waste

4.2.20 Currently residential recycling is collected by SWP weekly and refuse waste is collected fortnightly.

4.2.21 Access for collection vehicles needs to be considered as part of the design of the streets and the layout of the buildings, and the dimensions and turning capabilities of collection vehicles should be considered when designing junctions.

4.3 Commercial and Industrial Waste

4.3.1 As outlined above, Gravity will be working with local waste management partners to develop and deliver their Strategy for the management of commercial waste. The principal operating model on site will see each client sign up to a Gravity Waste Charter within their tenancy terms, and ensure their on-site activities meet those aspirations. The tenants will be supported though a suite of packages, available from waste management partners, for their use to guide them on site, and will also be subject to their activities being monitored and controlled.

Estimated waste arisings

4.3.2 The commercial and industrial units on Site will provide an estimated total of 1,100,000 sqm of floor space (excluding parking). Table 4-2 shows high level indicative waste volumes that might be expected under normal circumstances, without the exemplar waste management aspirations that will be in place at Gravity.

4.3.3 There are no specific local policies that provide guidance on commercial waste storage and logistics. Therefore, the ADEPT guidance[3] is used in order to inform the calculations, assuming 10 litres of waste is generated per 1 m^2 of floor space.

Land Use Class	Total Area (m^2)	Total Waste Storage Capacity Required (litres – based on weekly collection)
Advanced manufacturing uses	1,000,000	10,000,000
E(g) [formerly B1b, B1c and B1a] uses (assumed R&D, industrial processes, and incubator space) as well as other supporting land uses	100,000	1,000,000

Table 4-2: Approximate Waste volumes generated through Commercial and Industrial uses

4.3.4 The waste estimations presented in this section do not account for measures that should be incorporated to reduce waste produced during operation.

4.3.5 Non-residential waste is likely to be collected by a private contractor who will cover collection for the whole Site. This would have a number of advantages to the Site in reducing vehicles movements and enabling a focused and consistent approach to all units, helping enable effective communications and reporting at the same time.

[3] Association of Directors of Environment, Economy, Planning and Transport – Making Space for Waste 2010

4.3.6 The on-site green waste stream will be minor green waste from grounds maintenance activities and twice yearly haylage activities in the meadow fields and banks. While the Site is developing, and volumes remain inconsistent or low, the strategy will be to collect the green waste and transport to a local composting facility.

4.3.7 Awareness campaigns that focus on a specific waste stream and offer practical, easy to follow guidance on waste preventing actions should be encouraged and driven by the commercial contractor. In support of awareness-raising activities, targeted information on waste prevention techniques should be made available to specific users, such as businesses, organisations, and industries who have specific needs for guidance, tools, and resources.

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5 Summary

5.1.1 The Proposed Development will have embedded within it the principles of the Waste Hierarchy – 'eliminate, reduce, reuse, recycle, other recovery and disposal'. This will allow the environmental, social, and economic risks from waste to be minimised, with the aspiration to exceed both local and national waste minimisation and management targets.

5.1.2 There will be a requirement within the checklist in the Design Guide to adhere to the principles as set out within the Strategy, and taken forward as the proposals develop, where waste minimisation, segregation, storage, and collection can be presented in greater detail in accordance with the aspirations of Gravity.

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Appendix A Site Location Plan

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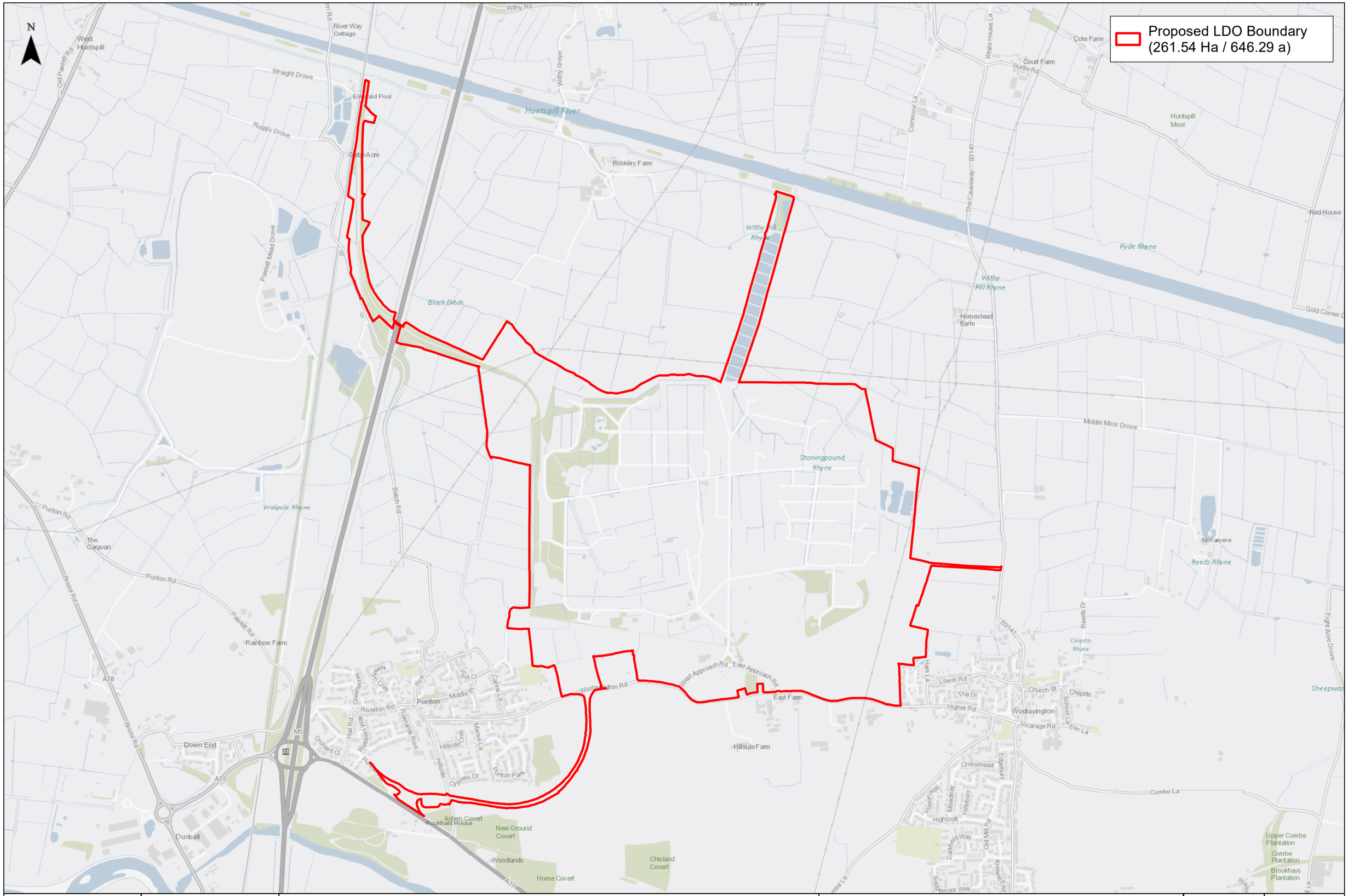

Stantec	Client This is Gravity Ltd.	**Gravity** LDO Boundary Plan	© Crown copyright and database rights [2021] Ordnance Survey 0100031673 Contains OS data © Crown Copyright and database right 2020 Source: © Aedas Architects	1:15,000 @ A3	Date: 23/02/2021
				Drawn: GS	Checked: TL
				Figure 01	Rev A

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