Statutory Consultation 2022

# Preliminary Environmental Information Report

Volume 2: Main Report

**Chapter 4: The Proposed Development**

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# 4 THE PROPOSED DEVELOPMENT

## 4.1 Introduction

4.1.0 This chapter describes the Proposed Development for which consent is sought and on which the Environmental Impact Assessment (EIA) is based, as reported in this Preliminary Environmental Information Report (PEIR).

4.1.1 The Proposed Development is characterised by the retention of the existing runway, expansion of the existing passenger terminal, and the provision of a new passenger terminal on land owned by Luton Rising (a trading name of London Luton Airport Limited) ('the Applicant') and Luton Borough Council (LBC), to the north east of the runway, to provide an overall passenger capacity of 32 million passenger per annum (mppa).

4.1.2 To achieve this additional capacity, the total number of aircraft stands needs to increase; therefore, the extent of the apron needs to expand, and additional taxiways need to be provided. Additional infrastructure to serve increased passenger numbers, including terminal, surface access, and expanded airport support facilities need to be provided.

## 4.2 The Proposed Development

4.2.1 The Proposed Development builds on the current operational airport with the construction of a new passenger terminal and additional aircraft stands on land owned by the Applicant located to the north east of the runway. This will take the overall passenger capacity from 18 mppa to 32 mppa.

4.2.2 In addition to the above and to support the initial increase in demand, the existing infrastructure and supporting facilities will be improved in line with the phased growth in capacity of the airport.

4.2.3 **Chapter 1** of this PEIR provides an overview of the main elements of the Proposed Development, this chapter provides a clear detailed description of the Proposed Development through all phases of construction and operation setting out the full description of the Proposed Development that has been considered in this assessment in accordance with the Infrastructure Planning (Environmental Impact Assessment ) Regulations 2017.

4.2.4 The Proposed Development will deliver additional capacity to meet the forecast growth in demand in two construction phases related to increasing capacity at the existing terminal (Phase 1), and the construction of the new terminal (Phase 2). However, given the length of time over which the Proposed Development will be constructed, and the step change in passenger numbers from the end of Phase 1 to final full capacity, an interim assessment phase has also been considered to understand environmental effects over the time the Proposed Development is constructed while the airport remains in operation. Therefore, for the purposes of assessment, three assessment phases are considered, as follows:

a. Phase 1: Expansion of existing Terminal 1 (T1) to increase capacity from 18 to 21.5 mppa. It is currently anticipated that Phase 1 works will commence in 2025 and be complete by mid 2027;

b. Phase 2a: Construction of new Terminal 2 (T2) and associated facilities to increase capacity from 21.5 mppa to 27 mppa upon opening. It is

currently anticipated that Phase 2a works will commence in early 2033 ending 2036 and will enable a step up in capacity in Q1 2037; and

c. Phase 2b: Expansion of T2 and associated facilities. It is currently anticipated that Phase 2b works will commence in 2037, and will deliver incremental capacity increases from 27 mppa to 32 mppa. T2 will have capacity for 12 mppa. The works will be complete to enable a step up in capacity in 2041.

## 4.3 Reference design and parameters

4.3.1 Reference designs have been developed to allow appropriate consideration of the potential scale, parameters, function and construction and operational resource requirements of each of the assets identified within the Proposed Development. Further descriptive information for these reference designs is provided in the **Works Description Report** provided as part of the consultation. These designs were used to generate the parameters which have informed this PEIR, within which they would be delivered, providing the best available understanding of the likely requirements at this stage.

4.3.2 The additional capacity would be delivered as a programme of work in phases. The phases would reflect the growth in demand and assets and facilities would be delivered only when they are required. Certain infrastructure improvements would need to be provided in full early in the phasing to avoid undue disruption.

4.3.3 To retain flexibility in the final design, maximum parameters for height and extent have been defined and used in this assessment of environmental effects to ensure a reasonable worst case has been assessed. The use of parameters in EIA is an accepted approach and is further described in **Chapter 5** Approach to assessment of this PEIR. Further aspect specific consideration of worst case are provided in each aspect chapter to this PEIR where relevant.

## 4.4 Work Numbers (Work No.)

4.4.1 A preliminary numbering system has been developed to allow each element of the Proposed Development to be described, and the location and anticipated timing of the work understood for this assessment. This numbering system and description will continue to be developed and refined as required, with the final details being reported in the Proposed Development description for the Environmental Statement, the Draft Development Consent Order and the Work Plans to be submitted with the application for development consent.

4.4.2 The Proposed Development has been divided into Works according to six main types of Works listed below:

1. Site wide major works to enable development;
2. Airfield work;
3. Terminal and associated works;
4. Airport support facilities;
5. Landscape and mitigation; and
6. Highways.

4.4.3 Each Work is numbered with an individual work number (e.g. Work No. 1a); for context a list of all Work No. identified under each of the types listed above is provided in **Table 4.1,** with an outline description of that Work and the assessment Phase in which it is currently anticipated that Work would be undertaken. A detailed description of each Work, where relevant to this assessment, is provided in the corresponding sections of this chapter.

4.4.4 The corresponding location of each Work No. is shown on the Illustrative Works Locations provided as **Figure 4.1** for Phase 1, **Figure 4.2** for Phase 2a and **Figure 4.3** for Phase 2b in Volume 4 to this PEIR.

4.4.5 The preliminary maximum extent and area of each Work No. are shown on the Illustrative Works Location figures; with the approximate level of the finished works, the height of the structure (m) and/or maximum parameter height (mAOD (Above Ordnance Datum)) within which this Work would be undertaken described in the corresponding text in this chapter. Further information on the highway interventions is provided in the **Getting to and from the airport – our emerging transport strategy** published as part of the consultation.

4.4.6 The operational phasing, based on the constrained construction phasing and sequencing and forecast demand, is then described together with an outline construction programme.

Table 4.1: Work No. in Proposed Development

| | Title | Anticipated Phase |
|---|---|---|
| **Work No. 1** | **Sitewide major works to enable development** | |
| Work No.1a | Earthworks - Landform Platform | Phase 1 |
| Work No.1b | Landfill Remediation | Phase 1 |
| Work No.1c | Statutory Services - Divert and Extend | Phase 1 |
| **Work No. 2** | **Airfield Works** | |
| Work No. 2a | New Stands/Taxiway to Foxtrot | Phase 1 |
| Work No. 2b(01) | New Runway Access and Rapid Exit Taxiways | Phase 2a |
| Work No. 2b(02) | New Airfield Equipment Instrument Runway Visual Range (IRVR) and Surface Movement Radar | |
| Work No. 2b(03) | New Apron for Stands, Taxilanes and Ground Service Equipment (GSE) | |
| Work No. 2b(04) | New Taxiways and Isolation Stand | |
| Work No. 2c(01) | New Apron for Stands, Taxilanes and Taxiways | Phase 2b |
| Work No. 2c(02) | New Runway Access and Rapid Exit Taxiways | |
| Work No. 2c(03) | New Hangar Aprons | |
| Work No. 2c(04) | Airfield Access Roads Upgrade | |
| Work No. 2d | Fire Training Ground | Phase 2b |
| Work No. 2e | Existing Engine Run Up bay (ERUB) Updates | Phase 1 |
| Work No. 2f | New ERUB | Phase 2a |
| Work No. 2g | Relocated ERUB | Phase 2b |
| Work No. 2h | Airside Utilities Corridor | Phase 2a and 2b |
| **Work No 3.** | **Terminal and Associated Works** | |
| Work No. 3a(01) | Terminal 1 (T1) Temporary Bus Lounge | Phase 1 |
| Work No. 3a(02) | T1 North extension | |
| Work No. 3a(03) | T1 South extension | |
| Work No. 3b(01) | New Terminal 2 (T2) | Phase 2a |
| Work No. 3b(02) | T2 Extension | Phase 2b |
| Work No. 3c(01) | New T2 West Pier | Phase 2a |
| Work No. 3c(02) | New T2 East Pier | Phase 2b |
| Work No. 3d | Coach Station | Phase 2a |
| Work No. 3e(01) | New Drop Off Zone | Phase 2a |
| Work No. 3e(02) | New Drop Off Zone | Phase 2b |
| Work No. 3f | T2 Plaza | Phase 2a |
| Work No. 3g | Luton DART (Direct Air-Rail Transit) T2 Station and Tunnel Extension | Phase 2a |
| Work No. 3h | T2 Support Buildings | Phase 2a |
| Work No. 3i | Airport Operations and Maintenance | Phase 2b |
| **Work No. 4** | **Airport Support Facilities** | |
| Work No.4a | Hotel (Phase 2b) | Phase 2b |
| Work No. 4b | Hangars A and B (Phase 2b) | Phase 2b |

| | | |
|---|---|---|
| Work No. 4c(01) | Fuel Storage Facility | Phase 2a |
| Work No. 4c(02) | Fuel Pipeline | |
| Work No. 4d | Water Treatment Plant | Phase 2a |
| Work No. 4e | Solar Battery Storage | Phase 2b |
| Work No. 4f | Airside Security and Access | Phase 2a |
| Work No. 4g | Car Park P1 (known as Tiered Car Park) | Phase 2a |
| Work No. 4h | Car Park P2 (known as Trailer Car Park) | Phase 2a |
| Work No. 4i | Car Park P3 (known as Mid-Stay Car Park) | Phase 1 |
| Work No. 4j | Car Park P4 (known as T1 Multi Storey Car Parks 1 and 2) | Phase 1 |
| Work No. 4k(01) | Car Park P5 - Adjusted Surface Car Park | Phase 1 |
| Work No. 4k(02) | Car Park P5 - New Decked Car Park | Phase 2a |
| Work No. 4l(01) | Car Park P6 - New Temporary Surface Car Park | Phase 1 |
| Work No. 4l(02) | Car Park P6 - Adjusted Temporary Surface Car Park | Phase 2a |
| Work No. 4m(01) | Car Park P7 - New Temporary Surface Car Park | Phase 1 |
| Work No. 4m(02) | Car Park P7 - Adjusted Temporary Surface Car Park | Phase 2a |
| Work No. 4n | Car Park P8 – Temporary Surface Car Park | Phase 2a |
| Work No. 4o(01) | Car Park P9 - Existing Staff/Car Hire Car Park Modified for Staff Car Parking | Phase 1 |
| Work 4o(02) | Car Park P9 - Adjusted Car Park P9 Staff Parking Affected by AAR East | Phase 2a |
| Work No. 4p(01) | Car Park P10 – New Long Stay car park | Phase 2a |
| Work No. 4p(02) | Car Park P10 – Adjusted New Long Stay car park | Phase 2b |
| Work No. 4q(01) | Car Park P11– New Long Stay car park | Phase 2a |
| Work No. 4q(02) | Car Park P11– Expanded Long Stay car park | Phase 2b |
| Work No. 4r | Car Park P12 - New T2 Multi Storey Car Park | Phase 2b |
| Work No. 4s | Airport Access Road permanent car Parking Replacement Provision | Phase 2a |
| Work No. 4t(01) | Airport Access Road permanent car Parking Replacement Provision | Phase 2a |
| Work No. 4t(02) | Airport Access Road permanent car Parking Replacement Provision | Phase 2a |
| Work No. 4t(03) | Airport Access Road permanent car Parking Replacement Provision | Phase 2a |
| Work No. 4t(04) | Airport Access Road permanent car Parking Replacement Provision | Phase 2a |
| Work No. 4t(05) | Airport Access Road permanent car Parking Replacement Provision | Phase 2a |
| Work No. 4t(06) | Airport Access Road permanent car Parking Replacement Provision | Phase 2b |
| Work No. 4u | Police Station | Phase 2a |
| Work No. 4v | Infiltration Tank | Phase 2a |
| **Work No. 5** | **Landscape and Mitigation** | |
| Work No. 5a | Terminal Approach | Phase 2a |
| Work No. 5b | Replacement Open Space | Phase 1 |
| Work No. 5c (01) | Landscape Restoration | Phase 1 |
| Work No. 5c (02) | Landscape Restoration | Phase 2b |
| Work No. 5d (01) | Habitat Creation | Phase 1 |
| Work No. 5d (02) | Habitat Creation | Phase 2a |
| Work No. 5e | Off-site Hedgerow Restoration and Screening | Phase 1 |
| **Work No. 6** | **Highways** | |

Refer to **Section 4.10** of this chapter

## 4.5 Work No. 1 – Sitewide major works to enable development

4.5.1 In preparation for construction of the Proposed Development several activities or enabling works need to take place to create the site. A brief description is provided below, or cross reference given to where a brief description is provided.

4.5.2 All of the works described below are included in the Proposed Development and have been assessed in this PEIR.

### Work No. 1a – Earthworks - landform platform

4.5.3 The Proposed Development is a large multi-faceted construction project with its own project specific construction site clearance, demolition, site setup and construction logistical challenges. The Proposed Development will require multiple construction sites that will become increasingly constrained over time as new earthwork operations change the landscape and as facilities, aprons, and building are built.

4.5.4 Before any work takes place, pre-construction activities will be undertaken. These will include, as a minimum, desktop studies, surveys, site investigations, the identification of existing services.

4.5.5 Site clearance and demolition requirements are described in the Construction Method Statement and Programme Report provided as **Appendix 4.1** in Volume 3 to this PEIR.

4.5.6 There is no statutory diversion requirement identified outside the Proposed Development boundary limits. The utility extensions required for the Proposed Development will be connected to existing statutory utility networks currently supplying the airport.

4.5.7 Earthworks are needed to create a new landform upon which the extension to the airfield and apron would be constructed and to be suitable for the new terminal, car parks and ancillary airport facilities. The existing levels across the earthworks area are shown in **Drawing LLADCO-3C-ARP-WHS-BEW-DR-GT-0301** provided in Volume 4 of this PEIR.

4.5.8 Construction of the aviation platform and landscaping would involve the excavation of approximately 1,700,000m$^3$ of natural material and 1,300,000m$^3$ of existing made ground and stockpiles. The natural material would be excavated from within the Main Application Site (as defined in **Chapter 2**, and shown in **Figure 2.2** in Volume 4 of this PEIR) to the east of the platform. The approximate extent of these earthworks and the proposed landform at each phase is shown in **Drawings LLADCO-3C-ARP-WHS-BEW-DR-GT-0301 to 304**, in Volume 4 of this PEIR). Cross sections of this landform are provided in **Drawings LLADCO-3C-ARP-WHS-BEW-DR-GT-0305 and 306** in Volume 4 of this PEIR. Proposed changes in level as a result of the Proposed Development are shown in **Drawings LLADCO-3C-ARP-WHS-BEW-DR-GT-0308 to 312** in Volume 4 to this PEIR.

4.5.9 The new apron would be approximately 670m long and 350m wide at existing apron height. The side slopes are likely to be a 1 in 3 gradient up to 80m wide. The thickness of the platform would increase moving east from the existing apron.

4.5.10 The excavation area would vary in depth up to approximately 20m in the north of the area. This remains notably above predicted groundwater levels. The side slopes of the excavation are expected to have a 1 in 3 gradient.

4.5.11 The landform created by the excavation will provide platforms for car parking, the Fuel Storage Area and the Water Treatment Plant. It will be coordinated with the level requirements of the permanent and temporary attenuation and infiltration tanks and other drainage provisions required by the development.

4.5.12 Excavation would result in part of the proposed open space to be provided by the New Century Park development being lost. The replacement open space would be in place prior to the main excavation works commencing, and excavation would take place to the south of that open space. Excavation works, and the Proposed Development within that excavated area, would therefore be screened from residential and recreational receptors to the north of the Main Application Site.

4.5.13 On completion of the main earthworks the landform in the east of the Main Application Site (Work No. 5c (02)) will be regraded with excavated material deemed technically unsuitable for use beneath the aviation platform to re-establish a more 'natural' and less 'engineered' appearance in this area. This will include the restoration of soil profiles suitable to receive the envisaged landscape treatments.

## Work No. 1b– Landfill remediation

4.5.14 Part of the Proposed Development would be on an area of the former Eaton Green landfill. In these areas it is necessary to excavate approximately 350,000m$^3$ of material to achieve the correct levels for construction. This material would be processed under an appropriate Environmental Permit and the majority would be reused on-site.

4.5.15 Foundations would be piled through the landfill to support the new buildings and infrastructure. These would be designed and constructed to protect the underlying groundwater and in close liaison with the Environment Agency.

4.5.16 Work to the landfill would be undertaken in a separate screened area towards the middle of the Main Application Site.

4.5.17 The areas and changes in levels related to excavation, treatment, and deposition of material from the existing landfill are shown in **Drawing LLADCO-3C-ARP-WHS-BEW-DR-GT-0307** in Volume 4 of this PEIR.

## Work No.1c - Statutory Services - Divert and Extend

4.5.18 The construction of the Proposed Development would impact upon a number of existing utilities which would need to be diverted, extended, relocated or made redundant. These diversion works would need to be carefully planned to ensure continuity of service is maintained to allow the current operation of the airport to continue. The exact numbering and content of each Work No. for these site

wide activities are under development and an overview only is provided here to inform assessment.

### *Power and communication*

4.5.19 Power (high and low voltage) and communication network serving the existing airport will be extended and diverted within the Proposed Development boundary to connect proposed airside and landside developments. These extensions will be provided via underground utilities corridors which will primarily follow the alignment of proposed highways.

4.5.20 There will be no gas supply to T2 or the associated new buildings.

### *Water supply*

4.5.21 The water supply to the Proposed Development is currently being reviewed and consultations have begun with the Environmental Agency, Affinity Water and Thames Water in an attempt to confirm the proposals due to the scarcity of available potable water and capacity of existing drainage networks in the area.

4.5.22 Phase 1 will involve the utilisation of the existing infrastructure and address the excess demand in water consumption through introduction of water efficiency measures and rainwater harvesting. Information provided by Veolia, indicates a baseline of 7.5l/s water consumption in 2019. Based on preliminary water demand forecasts, the aforementioned water savings are intended to compensate the increased passenger throughput within T1, albeit with the seasonal variations linked to rainwater harvesting.

4.5.23 Phase 2 will see the introduction of the Water Treatment Plant (WTP) (Work No. 4d) where it is projected that 100% of the foul water discharged by the newly constructed T2 and surrounding buildings/hotels will be treated and recycled to be used as non-potable water. This will reduce the demand of water from Affinity Water and limit it to potable water demand only. Furthermore, this will reduce the discharge into the Thames Water Network.

4.5.24 Phase 2 also offers the possibility of diverting some of the foul water drainage from T1 for recycling at the WTP which would in turn lead to more non-potable water be supplied back to the existing airport and potentially to the local community.

### *Drainage*

4.5.25 Drainage proposed during Phase 1 is based on optimising the existing infrastructure and by balancing flows to minimise net increases in demand of water supply and discharge into the existing soakaways and utilities. A net peak increase to Thames Water at 7am has been identified and it is proposed to attenuate this increase with added storage tanks to be coordinated on-site. Discussions with Thames Water are ongoing to eliminate the need to a new storage tank.

4.5.26 Phase 1 surface water discharges lead to a net increase to the Thames Water network to the north of the Main Application Site. The added impermeable surfaces are located above the landfill site, which is obstructing the installation of storage tanks in that immediate vicinity. It is believed that the local Thames Water network discharges locally to the Thames Water north soakaway.

4.5.27 Drainage works in Phase 2 will require new drainage infrastructure which will be constructed in the early phases such that it can be put into service before new buildings within the DCO are in operation. The key pieces of new infrastructure, including the Water Treatment Plant (Work No. 4d) and Infiltration Tanks (Work No. 4v) are described under Section 4.8 to provided scale as individual structures. An overview of the site wide drainage system is provided here.

4.5.28 Phase 2 of the drainage proposal includes attenuation tanks constructed below ground and has been designed to account for 1:100 year storm event plus 40% for climate change. Further details on the proposed drainage strategy (including details on Tanks 1, 2 and 3 referred to below) are provided in **Appendix 20.4** in Volume 3 of this PEIR.

4.5.29 A surface water attenuation, storage and recycling tank (Tank 1) would be installed under a new Long Stay Car Park (Work No. 4p.(01)) directly west of WTP (Work No. 4d) with a capacity of approximately 70,000m3. This has been designed to intercept the airside first flush run-off in and to offer a degree of redundancy in the system to account for accidental spillages, maintenance, temporary decommissioning for repair and extreme storm events where there would otherwise be flooding at the infiltration. The airside runoff may contain high levels of contamination such as de-icing agents. The water would be continuously monitored and potentially stored in the attenuation tank and re-routed to the WTP until the level is safe to discharge back into the infiltration tanks.

4.5.30 The surface water attenuation, storage and recycling tank (Tank 1) has been sized so that it would generally remain dry, apart from severe storms events, and would occupy an area of approximately 38,400m2, with parameter height of 125mAOD.

4.5.31 The Proposed Development would divert the existing central runway soakaways (approximately 90 hectares of total impermeable catchment area) into a new surface water network with WTP (Work No. 4d) prior to discharge to ground through controlled infiltration in line with sustainable drainage principles.

4.5.32 The two new proposed infiltration tanks (Work No. 4v, described in Section 4.8) are located to the south east (beneath Works No. 5c) and north west of the WTP and will continue to discharge into the same River Mimram catchment. All catchments remain unchanged.

4.5.33 Once decommissioned the existing central soakaways will be built over by the new apron (Works no. 2b(03)) and taxiways (Works No. 2b(04)).

4.5.34 Some of the proposed Long Stay Car Park (Work No. 4q.01) area is proposed to be constructed using permeable paving providing an opportunity to integrate Sustainable Drainage System (SuDS).

4.5.35 There are two below ground infiltration tanks (soakaways) proposed within the Main Application Site. Both tanks have been designed to achieve sustainable discharge of final treated effluent to the underlying aquifer under Environmental Permit(s) regulated by the Environment Agency. Both infiltration tanks would be below ground to prevent the introduction of new surface water bodies which would potentially increase the risk of bird strike in the vicinity of the airport.

4.5.36 One infiltration tank (Tank 3) would be located to the north west of the WTP, beneath the Long Stay Car Park (Work No. 4q.01). Tank 3 would receive the

overflow of the final treated sewage effluent as under normal operating conditions it is intended that 100% of the treated effluent will be recycled as non-potable water.

4.5.37 The second infiltration tank (Tank 2) (Work No. 4v), would be located in the south east of the Main Application Site and it would receive uncontaminated surface water from the airside and landside networks during normal operating conditions. Prior to, and during, the first flush if sensors detect contaminants at set trigger levels the surface water would be diverted for storage prior to treatment at the WTP and then be discharged after treatment to Tank 3. After the first flush, contaminant concentrations would drop below trigger levels and surface water would be rediverted directly to Tank 2.

4.5.38 Full retention petrol interceptors will be present within the aprons and car parks to retain oils and fuels as normal practice.

4.5.39 The infiltration tanks have been sized to remain mostly dry, apart from severe storm events. Ground level at the proposed Long Stay Car Park would be 125.45mAOD below which one infiltration tank (Tank 3) would be located, and ground level above the infiltration tank (Tank 2) to the south east would be 120.28mAOD. The storage tank (Tank 1) is also under the proposed Long Stay Car Park and would be below 125.15AOD as a minimum.

4.5.40 The parameters for key above and below ground assets required for the drainage and treatment system are described in Section 4.8 to this chapter, Work No. 4 - Airport Support Facilities.

## 4.6 Work No. 2 – Airfield Works

4.6.1 These works include the expansion of the airfield for airside operations. No works are proposed to the existing runway, air traffic control tower or fire station which would remain in their current locations and continue to service the whole airport.

4.6.2 New taxiways will be constructed to increase aircraft routings to/from the runway and to provide access to additional aircraft parking stands.

4.6.3 New aircraft parking apron will be created throughout the phases comprising:

a. stands, to facilitate the loading/off-loading of passengers and baggage;
b. taxilanes for aircraft to manoeuvre locally onto the stands; and
c. areas for storage of Ground Service Equipment (GSE) which is required to service the aircraft.

4.6.4 The intention is to improve the ratio of contact stands[1] at the expanded airport so that 70% of all commercial passenger stands associated with the new terminal building are contact stands.

[1] Contact stands include designated areas on the apron where an aircraft could use a passenger boarding bridge if required by the airline.

## Work No. 2a – New stands/taxiway to East of Foxtrot

4.6.5 New stands will be provided in Phase 1 to provide sufficient aircraft parking capacity to accommodate the additional 3.5 mppa to be serviced from the existing terminal (T1).

4.6.6 The new stands comprise four Code C[2] stands (wingspan up to 36m) accessed via a new taxiway connection from the east side of Taxiway Foxtrot.

4.6.7 An additional Code C stand will also be created adjacent to the existing Engine Run Up Bay (ERUB) as described in Work No. 2e. The existing ERUB bund will be removed, and a new blast deflector fence provided.

4.6.8 The new stands will be constructed in Pavement Quality Concrete with the exception of the northernmost stand which will constructed with an asphalt surface.

4.6.9 The proposed apron including stands, taxiways and equipment areas would cover an area of approximately 77,360m$^2$ with a pavement height of around 153.5mAOD (± 1.5m) to tie into the existing airfield.

4.6.10 An additional area of pavement would be provided for parking of GSE and a new link road north of the apron to provide a vehicular route across Taxiway Delta to T1.

4.6.11 The new stands will be equipped with High Mast Lighting around 25m in height but no other aircraft servicing facilities.

4.6.12 The drainage from the new stands will include linear drainage systems with catch-pits, an oil separator and attenuation storage, all located beneath the pavement (but not encroaching into the former landfill site) as described in this Work.

4.6.13 To access the stands a section of new Taxiway Golf will be constructed with a link taxiway connecting this to Taxiway Foxtrot.

4.6.14 An extension to Taxiway Foxtrot to the north will be constructed to allow aircraft to bypass the existing T1 East Apron.

4.6.15 The taxiway works will be constructed in asphalt concrete and incorporate the necessary drainage and aeronautical ground lighting (AGL).

4.6.16 The existing storage area for de-icing fluids associated with Taxiway Foxtrot de-icing stands is located within the clearances of Taxiway Foxtrot and proposed Taxilway Golf. This area would be relocated to a service yard area north of the proposed stands adjacent to the GSE area. Vehicular access for material delivery would be via the proposed new link road to T1.

## Work No. 2b(01) – New Runway Access and Rapid Exit Taxiway

4.6.17 To improve the capacity of the runway and reduce the distances that aircraft need to taxi on the ground additional taxiways will provide the necessary manoeuvring for aircraft to access/egress the existing runway to manage the increased aircraft movements.

[2] Code [x] aircraft - International Civil Aviation Organisation aircraft categorisation based on size.

4.6.18 New taxiways would be provided to improve access for departing aircraft to access the ends of the runway. This would improve taxiway routing and reduce runway occupancy time.

4.6.19 A Rapid Exit Taxiway (RET) is proposed at the west end of the Runway as part of Work No. 2b(01) anticipated to be delivered during assessment Phase 2a. RETs are angled taxiways located at an appropriate position so that landing aircraft can exit the runway at higher speed thus vacating the runway earlier to increase movement rates.

4.6.20 An additional taxiway link (07 link) extending Taxiway Bravo to the western end of the runway is also proposed.

4.6.21 The proposed taxiways would cover an area of approximately 88,300m$^2$ with a pavement height of around 158mAOD (± 2.0m) to tie into the existing airfield.

4.6.22 New taxiway facilities would incorporate the necessary drainage and AGL.

## Work No. 2b(02) – New Airfield Equipment (Instrument Runway Visual Range and Surface Movement Radar)

4.6.23 To facilitate the construction of the western RET it will be necessary to relocate existing Instrumented Runway Visual Range (IRVR) System. A new IRVR will be provided to the western end of the runway on the south side. The IRVR comprises an array of units approximately 3m above ground level. An access track to the equipment will be provided.

4.6.24 The proposed IRVR works would be over an area approximately 37,300m$^2$ and comprises an array of units approximately 3m above ground level.

4.6.25 A second Surface Movement Radar (SMR) will be required to supplement the existing SMR and provide coverage for the proposed development. This SMR will be located south of the runway in an area of land owned by the Applicant and classified as Green Belt.

4.6.26 The radar tower which may be a steel lattice type structure will be around 13m in height and will support a radar. It would likely be around 0.5m by 0.5m wide with a footprint of around 4m$^2$ and will be surmounted by a red obstruction light. An access track will be constructed from the existing airport perimeter road to provide access for maintenance.

4.6.27 The SMR will require power and communication services that will be taken from nearby substations.

4.6.28 The proposed SMR would be located somewhere within the work area approximately 525m$^2$.

## Work No. 2b(03) – New Apron, stands, taxilanes, and GSE

4.6.29 Twelve additional Code C stands are proposed within the reference design for the new apron area, anticipated to be delivered during assessment Phase 2a, making a total of 16 Code C stands within the new apron area. These stands will also accommodate three Code E (wingspan up to 65m) aircraft by using alternative stand centrelines. The proposals include a bank of seven Code C stands running north to south, located to the east of the existing taxiway system. They are serviced by a new taxilane (Juliet) and have direct access to the proposed new pier building as described in Work No. 3c(01).

4.6.30 A number of these Code C stands will be constructed over the landfill and these stands would be subject to settlement monitoring which may result in additional stand maintenance.

4.6.31 The proposed apron including stands, taxilanes, vehicular roads and equipment areas would cover an area of approximately 144,500m$^2$ with a pavement height of around 153.5mAOD (± 1.5m). The main taxiways are included in Work No. 2b(04).

4.6.32 The proposed layout includes a north-south taxilane which would provide aircraft access to the new apron. The cul-de-sac consists of twin Code C taxilanes and a central Code E taxilane to service the apron areas (Taxilane Juliet). This taxilane has a minimum width of 89m.

4.6.33 An extension of Taxiway Golf is proposed to connect this taxilane to the north with Taxiway Foxtrot to service the four Code C stands located west of the new terminal building. This is required to ensure that the operation of the existing taxiway network is not affected by aircraft manoeuvring onto or off these new stands.

4.6.34 Each aircraft stand within the new apron area would be provided with a range of equipment to aid the operation of the stand and facilitate a quick turnaround. The key elements proposed include:

a. fixed electrical ground power units around 1.5m high. These remove the requirement to use the aircrafts auxiliary power unit or mobile ground power units which would be diesel operated;

b. a below ground fuel hydrant system servicing all the stands within the apron area with fuel to hydrants located on the stands thereby removing the requirement for fuel bowsers;

c. a stand entry guidance system, approximately 6m high for Code C aircraft, and up to 10m for Code E aircraft, located at the head of each stand centreline allowing the pilot to position the aircraft without the use of a marshal; and

d. lighting would also be provided to appropriate safety standards with masts around 25m in height.

4.6.35 The de-icing operations for the proposed new aircraft stands associated with T2 would be undertaken on the stands.

4.6.36 The expanded apron would include appropriate drainage with full retention interceptors to collect surface water for appropriate storage and treatment before discharge.

4.6.37 A fire hydrant system is also proposed within the new apron area with a fire hydrant located at the head of the stand approximately every 90m.

4.6.38 A proposed potable water filling point and a foul water discharge point would be located north of the apron area to the west of the new terminal (Work No. 3b(01)), for refilling and emptying of the aircraft.

4.6.39 Underground services beneath the apron will require protection to prevent infiltration of ground gases.

4.6.40 Locations both on stand and adjacent to the apron area have been provided for parking GSE. It is proposed that these areas would include parking spaces complete with charging points as the GSE fleet would be replaced with electric vehicles over time. Individual items on these areas would not be higher than 4m.

4.6.41 The GSE storage areas are likely to be around 13,000m$^2$, with a height of typical equipment of approximately 4m.

## Work No. 2b(04) – New taxiways and Isolation Stand

4.6.42 New parallel taxiways will be provided to the south of the apron area to connect the new apron to the existing taxiway network; anticipated to be delivered during assessment Phase 2a. These consist of a realigned Taxiway Alpha and the addition of Taxiway Charlie.

4.6.43 These works are integrated into the same Work No. area as they would be integral connecting routes at the same height as the apron 153.5mAOD (± 1.5m). Proposed taxiways would occupy an area of approximately 194,500m$^2$.

4.6.44 The Isolation Stand location has been designed in accordance with European Aviation Safety Agency (EASA) requirements, allowing a minimum of 100m between the parked position of an aircraft on the stand and other parked positions, buildings and public areas.

4.6.45 The Isolation Stand is an expanded piece of taxiway with the taxiway pavement widened either side. These pavement widenings covering an area of approximately 210m$^2$, with a pavement height of 153.5mAOD (±1.5m).

## Work No. 2c(01) – New aprons, stands, taxilanes

4.6.46 A further 12 additional Code C stands are proposed within the reference design for the new apron area, anticipated to be delivered during assessment Phase 2b, making a total of 28 Code C stands within the new apron area. These stands will also accommodate three additional Code E (wingspan up to 65m) aircraft by using alternative stand centrelines bring the total Code E stands to six.

4.6.47 The proposals include constructing three additional stands adjacent to Taxiway Golf above an area of landfill. These stands will be connected to the western pier constructed as part of Work No. 2b(03).

4.6.48 A new bank of seven Code C stands running north to south, located to the east of the current apron are also anticipated to be constructed in Phase 2b. They are serviced by a new taxilane (Kilo) and have direct access to the proposed new pier building described in Work No. 3c(02).

4.6.49 The proposed apron would cover an area of approximately 81,000m$^2$ with a pavement height of around 153.5mAOD (± 1.5m).

## Work No. 2c(02) – New runway access and RETs

4.6.50 To further improve the capacity of the runway and reduce the distances that aircraft need to taxi on the ground additional taxiways will provide the necessary manoeuvring for aircraft to access/egress the existing runway to manage the increased aircraft movements.

4.6.51 New taxiways in Phase 2b would be provided to improve access for departing aircraft to access the ends of the runway. This will improve taxiway routing and reduce runway occupancy time. New taxiway facilities would incorporate the necessary drainage and AGL.

4.6.52 A RETs is proposed at the east end of the runway. An additional taxiway link (25 link) extending Taxiways Alpha and Charlie to the eastern end of the runway is also proposed.

4.6.53 The proposed runway access and RETs would cover an area of approximately 89,300m$^2$ with a pavement height of around 155.5mAOD (± 2.5m).

## Work No. 2c(03) – New Hangar Aprons

4.6.54 As part of the new hangar works as described under Work No. 4b an area of additional apron will be required at the frontage of these hangars to provide access for the aircraft, anticipated to be delivered during assessment Phase 2b.

4.6.55 The proposed extension to the existing apron area will be approximately 22,500m$^2$ at a pavement height of around 155.5mAOD (± 2.5m), with the access to the apron from Taxiway Bravo as is currently the case.

## Work No. 2c(04) – Airfield Access roads upgrade

4.6.56 The Fire Training Ground (FTG) is to be relocated as part of the Phase 2b Works as described in Work No 2d. As part of these works the existing perimeter road from the Fire Station to the proposed FTG around the western end of the runway will need to be assessed and upgraded as required to suit the additional traffic and vehicular types that will be using it to access the proposed FTG.

4.6.57 The proposed upgrade to the existing perimeter road will follow the existing levels in this area and cover an area of approximately 36,900m$^2$.

## Work No. 2d – Fire Training Ground

4.6.58 The existing FTG is located to the east of the long stay car parking and south of Wigmore Valley Park. It would need to be re-located to accommodate the Proposed Development, anticipated to take place in Phase 2b.

4.6.59 The existing facilities comprise:

a. storage units (6m x 3m);
b. simulator control hut;
c. Bristol Britannia Fuselage (35m x 6m);
d. bulk storage calor gas containers;
e. dual fuel fire simulator (60m x 16m);
f. welfare facilities;
g. drill tower (consisting of 3 floors);
h. Compartment Fire Behaviour Training attack unit (14m x 4m);
i. two storey breathing apparatus chamber (15m x 10m);
j. classroom (6m x 3m);

k. separator tanks; and

l. two skips.

4.6.60 The FTG would be re-located in Phase 2b to an area of available space, approximately 27,500m$^2$, south of the runway within the existing airport boundary, outside the Green Belt, approximately 300m away from the nearest residential property to the south west.

4.6.61 The new facilities would replace the existing and include assets of similar scale to those described above.

4.6.62 The facilities would be used both during the day and night on average twelve times a month by the airport's fire services. In addition, external fire services use the facility for training periodically.

4.6.63 When the FTG is not being used, surface water runoff would discharge to a soakaway via a petrol interceptor. Under training operations, a penstock located upstream of the petrol interceptor would be closed and the contaminated discharge would be routed to a separate holding tank. The proposed tank size is 30,000 litres on the basis that this is the size of the emergency water tank which would supply fire training activities. The penstock would be re-opened following a wash down of the operational area and the run-off re-routed through the petrol interceptor to the soakaway. The operational discharge from the holding tank can then be removed to the proposed WTP (Work No. 4d) by tanker or taken off-site for appropriate treatment.

4.6.64 Access in to and out of the facility would be provided by means of two new access tracks from the existing perimeter road. To satisfy the required response times of the Fire Service to an emergency, an access road to the runway is proposed diagonally towards existing Taxiway C.

4.6.65 The maximum height of the various structures listed above is 14m above an existing ground level of 159.8m (±0.75m), which gives a total height of 173.8mAOD.

## Work No. 2e – Existing Engine Run-up Bay Updates

4.6.66 The area of hardstanding currently used as an ERUB, located to the east of Taxiway Foxtrot and accessed via Taxiway Alpha , would need to be retained and expanded during Phase 1 to provide an additional aircraft parking stand.

4.6.67 These works would include creating additional apron area (as described in Work No.2a) to the east of the ERUB accessed from Taxiway Alpha. The ERUB location would shift to the east to occupy this new area allowing an additional aircraft stand to be constructed to the west of the ERUB.

4.6.68 The existing ERUB bund would be removed and a new 4m high blast deflector fence provided replicating the shape of the existing bund. The total area of the works would cover approximately 15,300m$^2$ with a pavement height of 153mAOD (±0.45m).

## Work No. 2f – New ERUB

4.6.69 A new ERUB is needed at Phase 2a so that the existing facility can be removed to enable construction of new taxiways as described in Work No. 2b(04).

4.6.70 This proposed ERUB facility needs to be in an accessible area of the apron, which would be at the east end of the new platform.

4.6.71 The proposed ERUB has been designed as a minimum to accommodate two Code C aircraft (as typically used by the majority of existing airlines at the airport) which would access/egress under their own power, but also for larger Code E aircraft which would need to be towed in/out of the enclosure. It forms a three-sided bay with the fourth side open so that aircraft can enter from and exit to the taxiway.

4.6.72 The proposed ERUB is orientated with the open side facing approximately south away from receptors sensitive to noise to the north and on the apron, and would include a noise attenuation barrier of around 12m in height, on the other three sides of the bay.

4.6.73 The ERUB covers an area of approximately 10,000m$^2$, which is included in the overall apron area mentioned in Work No. 2b(03) with a pavement height of 153mAOD (±0.45m).

### Work No. 2g – Relocated ERUB

4.6.74 The ERUB needs to be relocated at Phase 2b to allow the apron area to expand. The new facility will have the same dimensions as Work No. 2f but is relocated further east to be located at the eastern extremities of the extended platform.

### Work No. 2h – Airside Utilities Corridor

4.6.75 The construction of a new airside utilities corridor to connect into the proposed landside drainage, is anticipated during Phase 2a and Phase 2b. This will require airside working arrangements and consist of operations in a live airport environment.

4.6.76 The utility corridor expands for a distance of 2,355m, with an approximate width of 27.3m and covering an area of approximately 64,350m$^2$.

## 4.7 Work No. 3 –Terminal and Associated Works

4.7.1 These works include proposed Work to increase the capacity of the existing terminal T1 and the development of a new passenger terminal building (T2) and all the facilities and assets required to support the operation of T2.

4.7.2 The works are numbered sequentially, as described below, and their location shown in the Work Plans provided as **Figure 4.1 to 4.3** in Volume 4 of this PEIR. The maximum extent and height of development proposed in that area are provided in the description in this chapter.

### 3a – Terminal 1 and associated works

4.7.3 T1 requires work to accommodate additional passengers above the current consented capacity of 18 mppa. The maximum capacity of T1 is anticipated to be 21.5 mppa achieved in Phase 1.

4.7.4 The work to T1 has been designed to avoid, where possible, extension of the existing facilities impacting on airfield and landside facilities and to minimise the scale of additional building.

4.7.5 Additional capacity is anticipated to be achieved by three extensions of the existing terminal as described in separate Work No. 3a (01), (02) and (03) described in subsequent sections of this chapter. Refurbishment works on key terminal facilities within the current building are also required to provide the necessary capacity to handle the additional demand.

### *Work No. 3a(01) – T1 Temporary Bus Lounge*

4.7.6 A new temporary bussing lounge facility will provide passenger boarding gates to service the new remote aircraft stands. This facility will be located to the north of T1 on existing Stand 61 comprising a single storey modular building with an approximate operational area of 900m$^2$, a finished floor level at the same height as the apron 153.5mAOD (± 1.5m) and a maximum parameter height of 164.5mAOD (± 1.5m). The facility will be dismantled once T2 commences operations.

### *Work No. 3a(02) – T1 North Extensions*

4.7.7 Expansion work to the existing T1 building in the north side are proposed to increase the operative area of immigration; this extension of the terminal extends for 5.5m (± 1.0m) north of the exiting façade with and area 270m$^2$ approximately at ground floor level and maximum parameter height of 167.5 (± 1.5m) AOD.

### *Work No. 3a(03) – T1 South Extension*

4.7.8 An extension of the current building is required to increase the ground floor area dedicated to security search and check-in facilities as well as the departure lounge at first floor; a possible solution is to extend the building in the south side. At ground floor, the extension to the south would provide an additional area of approximately 400m$^2$ to increase the capacity of key terminal facilities such as check-in and security for departing passengers.

4.7.9 At first floor, extension the building to the south is anticipated to provide an additional area of approximately 1,200m$^2$ with a maximum parameter height of 171.5m (± 1.5m), to increase the departure lounge by providing additional seating dedicated to departing passengers waiting for the call to gate.

## Work No. 3b – Terminal 2

4.7.10 A new passenger terminal building (T2) would be provided, comprising a main building and two piers which would interface with the aircraft parking aprons to the south. T2 will be accessed from the north, either by rail (Luton DART) or public/private road vehicles via a Drop off Zone. A plaza will be provided immediately north to provide a pedestrian friendly point of entry to the terminal. It is anticipated that T2 will be delivered over two phases of construction in Phase 2a and 2b.

4.7.11 The new passenger terminal would be ultimately sized to process up to 12 mppa, taking the total airport capacity to 32 mppa. T2 has been designed to allow incremental construction to meet forecast passenger demand, with the initial phase catering for 7 mppa on opening.

4.7.12 T2 has been designed using conventional vertical stacking over two storeys, with baggage sorting on the lower level, and the Arrivals and Departures passenger processing areas the on the upper level.

4.7.13 The passenger experience would be supported with a range of facilities including food kiosks, cafes, restaurants, retail and welfare facilities. Support accommodation and operational areas would be provided for airport staff required to operate the terminal including airlines, retail, terminal management, security screening, customs, immigration, baggage handling and ground staff.

4.7.14 The proposed engineered servicing of the terminal building will be designed to meet exacting standards with regards to energy conservation and sustainable principles, including meeting 'BREEAM Excellent' criteria. For example, photovoltaic and solar water heating panels would be installed on the roof, as well as ground source heating and cooling systems under the terminal to deliver a source of sustainable energy. Parameters have been established to represent the approximate scale and massing of the proposed terminal building. They present a maximum height and footprint for the purposes of assessing the environmental impact of the development. A potential design solution, called the Reference Design, has been developed to meet the project brief requirements and form the basis for setting the Parameters. Further information on the Reference Design is provided in the **Work Description Report** published as part of the consultation.

## Work No. 3b(01) – New Terminal 2

4.7.15 The footprint area of the new terminal anticipated in Phase 2a is approximately 25,900m$^2$ and the proposed maximum building height is approximately 28m, giving a maximum parameter height of +180m AOD. The proposed maximum volume for is 725,750m$^3$.

## Work No. 3b(02) – Terminal 2 extension

4.7.16 To provide additional passenger capacity, the terminal is widened by 45m across its entire length (to the east elevation) increasing the maximum footprint to 35,600m$^2$. The proposed maximum building height remains the same, at approximately 28m (+180m AOD). The proposed maximum volume of T2 is 997,900m$^3$.

## 3c – New Terminal piers

4.7.17 T2 will include two boarding piers serving contact stands providing direct access onto the aircraft stands from the new terminal building. It is proposed that the piers form a continuation of the T2 departures hall. Each pier could serve 12 Code C aircraft stands, 6 of which would be configured in pairs to service larger Code E aircraft. The piers are likely to comprise circulation, amenity, and gate areas at first floor Departures Level with some retail/food beverage concessions. At ground level an arrivals corridor would connect passengers back to the main terminal via a lift and escalator core. Plant, operational areas and some staff accommodations are also likely to be provided. Each pier would have the potential for stand access circulation nodes to be provided at each aircraft stand which would be capable of accommodating passenger boarding bridges should the airlines require in future.

### *Work No. 3c(01) – New T2 west pier*

4.7.18 Anticipated in Phase 2a, the footprint of the west pier is approximately 7,145m$^2$. Proposed maximum building height is 15m (+170m AOD). Proposed maximum volume is 131,250m³.

### *Work No. 3c(02) – New T2 east pier*

4.7.19 Anticipated in Phase 2b, the footprint of the east pier is approximately 7,175 $m^2$. Proposed maximum building height is 15m (+170m AOD). Proposed maximum volume is 132,225$m^3$.

## Work No. 3d - Coach Station

4.7.20 A new bus and coach station would be provided to cater for increased passenger numbers and improve the public transport offering to the airport from local and national destinations.

4.7.21 The new facility, anticipated in Phase 2a, would be located to the east of the Drop-off Zone (Work No 3e(01)). This location provides connection to the proposed road network, and easy pedestrian access to the new terminal, and forecourt.

4.7.22 The Coach Station forms an integral part of the surface access system and consists of additional coach stands, a canopy running along the head of stands and a centralized ticketing, amenities and waiting facilities building.

4.7.23 The area of the work is approximately 7,450$m^2$ and the proposed maximum building height is 8.25 m, giving a maximum parameter height of 160mAOD (±0.75 m). The proposed maximum volume is around 42,360$m^3$ with a building GEA of approximately 1,660$m^2$.

## Work No. 3e – Drop Off Zone

4.7.24 The terminal forecourt area located north of the proposed T2 (Work No.3b) and Terminal Plaza (Work No. 3f) would have bus, taxi and passenger drop-off and pick up zone and would be directly accessible to and from the surface access network to the north of the new terminal. The Drop-off Zone (DOZ) would also connect to the adjacent coach station and have direct pedestrian access to departures and arrivals in the new terminal.

4.7.25 The DOZ would be expected to provide around 90 car parking spaces, 30 taxi parking spaces and 10 coach parking bays.

4.7.26 The public realm associated with Work No. 3e would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees).

### *Work No. 3e(01) – Drop Off Zone*

4.7.27 The Work area anticipated for Phase 2a, is approximately 15,175$m^2$ at surface level, giving a maximum parameter height of 153.5mAOD (±1.5 m).

### *Work No. 3e(02) – Drop Off Zone*

4.7.28 The Work area anticipated in Phase 2b increases to approximately 30,131$m^2$, at the same surface level of 153.5mAOD (±1.5 m). The Short-Stay Multi-Storey Car Park (MSCP) (Work No. 4r) is constructed above it in Phase 2b.

## Work No.3f – Terminal 2 Plaza

4.7.29 The T2 Plaza, anticipated in Phase 2a, would be located between the DOZ (Work No. 3e(02) and T2 building (Work No. 3b), providing a dedicated pedestrian zone. This area would allow passengers and employees accessing/egressing the terminal access to a central circulation area, the Coach Station (located to the east) and Luton DART station (located to the west).

4.7.30 The area would cover approximately 4,050m$^2$ in Phase 2a, increasing to 5,400m$^2$ in Phase 2b, at a ground level of approximately 153.0mAOD.

4.7.31 Pedestrian movement routes would be provided along key desire lines and sufficiently sized to ensure their ability to accommodate predicted footfall. The design of this area would also consider those potentially likely to use the space, ensuring surface treatments are accessible to all users and that suitable shelter is provided along principal connecting routes. The positioning of signage would also be coordinated to ensure information is clear and routes are clearly demarcated.

4.7.32 The T2 Plaza would help to support the functionality and uses of the terminal itself, including:

a. provision for passengers and visitors to wait, prior to checking-in or collecting those arriving at the airport (with seating or perching areas);
b. provision of sheltered areas for smokers and for use during inclement weather;
c. provision for luggage trolley parking and other air travel facilities;
d. cycle parking provision;
e. break-out areas where airport staff and visitors can go to have a drink or to eat;
f. muster points; and
g. other land uses (e.g. retail or café/restaurant).

4.7.33 The public realm would include both hard and soft landscaped parts and would be designed to ensure that visitors can easily navigate the space and get from their place of arrival (i.e. car park, DOZ, Luton DART station) into the terminal building and vice-versa.

4.7.34 Soft landscaping associated with the T2 Plaza is envisaged to be formal and to include street trees, clipped hedgerow, and ornamental shrub planting.

## Work No. 3g – Luton DART T2 station and tunnel extension

4.7.35 The Luton DART is currently under construction and will provide a direct mass passenger rail link between Luton Airport Parkway railway station and T1.

4.7.36 It is anticipated that in Phase 2a this would be extended to serve T2 connecting from the T1 station, which will have been completed by the time construction of the Proposed Development starts. Luton DART trains would link all three stations with 10 min frequency and approximately 10 minute journey time between the new terminal and Luton Parkway railway station.

4.7.37 The proposed Luton DART tunnel extension would run from the east of the T1 station and would extend under Taxiway Delta and Foxtrot for approximately

500m, terminating at a new station adjacent to the west of T2. The tunnel would occupy approximately 9,200m$^2$ and be entirely below ground; the tunnel dimensions are typically a 7m deep section with a 1.5m cover and a width which varies from 13m to 22m.

4.7.38 Both the tunnel and the new terminal station would operate as landside facilities and have no direct connection to the airside facilities.

4.7.39 Most of the station, including platform areas and maintenance area relocated from T1 Luton DART Station, would be below ground, with only the station entrance, key station operational buildings and critical skylights above ground. The station design has been developed in keeping with the smoke ventilation requirements of a semi-open station, the style of that being constructed at T1.

4.7.40 Additional cars would be added to the light rail system in order to increase system passenger capacity to meet forecast demand.

4.7.41 The station is expected to occupy an above ground work area of approximately 2,445m$^2$ with a maximum above ground height of 8.25m, giving a maximum parameter height of 161.5mAOD (±0.75 m).

4.7.42 The public realm associated with this Work No. would include both hard and soft landscaped areas. Movement routes around the Luton DART T2 station would be sufficiently sized to ensure their ability to accommodate predicted footfall. The design of this area would also consider those potentially likely to use the space, ensuring surface treatments are accessible to all users and that suitable shelter is provided along principal connecting routes. The positioning of signage would also be coordinated to ensure information is clear and routes are clearly demarcated. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees).

## Work No. 3h – T2 Support Buildings

4.7.43 Located to the west of T2, provision is made in Phase 2a for buildings and areas of hard standing required to support the terminal function and operation. The Work area provided to accommodate these facilities is approximately 9,870m$^2$. The proposed buildings include: an Energy Centre with an area of approximately 3,950m$^2$ and a Substation with an area of approximately 1,600m$^2$. The maximum height of any of the buildings would be approximately 12.8m giving a maximum parameter height of 169mAOD (±0.75 m).

4.7.44 This Work area includes for a service yard to provide the controlled access point for deliveries to T2. This area would allow for deliveries to be processed and stored, with sufficient vehicle manoeuvring space. This would be at a proposed ground level of 156mAOD with an area of approximately 1,125m$^2$.

4.7.45 In addition, an emergency vehicle assembly area approximately 3,195m$^2$ is to be located to the north of T2 at proposed ground level 152.9mAOD. This is a designated area for emergency vehicles during emergencies and will be vacant at all times.

4.7.46 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be naturalised in appearance (i.e. native shrub vegetation, mixed-species hedgerow and woodland).

### Work No. 3i – Airport operations and maintenance

4.7.47 This area includes landside and airside buildings and hard standing required to support the core functions of the airport, two to four buildings could be constructed on the site, anticipated in Phase 2b, approximately 24,000m$^2$ with a maximum building height of 13.8m giving a maximum parameter height of 168.5m AOD. The exact number and functions of buildings in this area will depend on evolving nature of future airport operation and are likely to include (but not limited to) the following functions: security gatehouse, ground operations staff and vehicle facilities; vehicle maintenance; vehicle charging and other similar support operational facilities.

4.7.48 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be naturalised in appearance (i.e. native shrub vegetation, mixed-species hedgerow and woodland).

## 4.8 Work No. 4 – Airport Support Facilities

4.8.1 These works includes all the facilities and assets required to support the operation of expended airport, including ground operations, hangars, car parks, water treatment and fuel storage.

4.8.2 The works are numbered sequentially, described below, and their location shown in the indicative Work Plans provided as **Figures 4.1** to **4.3** in Volume 4 of this PEIR. The maximum extent and height of development proposed in that area are provided in the description in this chapter.

### Work No. 4a – Hotel

4.8.3 A hotel is anticipated in Phase 2b to meet to the need for additional hotel capacity driven by airport and business-related demand at 32 mppa. The hotel would be located to the north east of T2, surrounded by a MSCP (Works No. 4r) to the west, the Coach Station to the south (Works No. 3d) and by part of airports roads (Works No. 6b.(02)) and embankment to the east.

4.8.4 It would be linked to the proposed road network from its eastern side allowing connection to the main access road. Its location facilitates pedestrian access to T2 (less than 100m away) and public transport including the Coach Station (Works No. 3d) and Luton DART Station (Works No. 3g).

4.8.5 The hotel would provide around 400 beds and car parking linked to the new T2 Public Realm.

4.8.6 The work area would occupy approximately 20,724m$^2$ with a maximum parameter height of around 177mAOD (±0.75 m).

4.8.7 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be naturalised in appearance (i.e. native shrub vegetation, mixed-species hedgerow and woodland).

### Work No. 4b – Hangar A and B

4.8.8 Three existing buildings, located along President Way between Airport Approach Road and Prince Way, would be demolished and replaced in Phase

2b of the Proposed Development. They are to the north of the existing terminal located adjacent to the existing northern aircraft apron. These are currently standard commercial units which would be replaced by two new single bay general aviation or maintenance hangars to serve the increasing demand from the growing aircraft fleet.

4.8.9 The hangars would be dedicated to the maintenance of Code C aircraft and would include provision for staff approximately 120 no. car parking spaces.

4.8.10 The two hangars would be located in the same areas previously occupied by the buildings they are replacing, to the south of the new road providing access to the east of the airport (previously referred to as the Century Park Access Road) (Work No. 6a(02)), with access provided from Work No. 6a(02) with new internal roads.

4.8.11 The total work area is approximately 16,900m$^2$, excluding the apron area described in Work No. 2c(03), the maximum building height of the two hangars would be approximately 25m giving a maximum parameter height of 182m AOD(±0.75 m), and proposed building gross external area 11,760m$^2$.

4.8.12 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be naturalised in appearance (i.e. native shrub vegetation, mixed-species hedgerow and woodland).

## Work No. 4c(01) – Fuel storage facility

4.8.13 The expansion would require a new larger fuel storage facility than currently available. The existing fuel storage facility would be retained and continue to serve the existing terminal.

4.8.14 The new fuel storage facility, anticipated in Phase 2a, would be provided landside to the east of the proposed earthworks and car parking, within the excavated area at ground level approximately 27m below the proposed apron level.

4.8.15 The new fuel storage facility would consist of the following:

a. four large fuel storage tanks, with a combined capacity of 20,000m$^3$, provided for settling, storage and backup purposes with heights in the region of 18m;
b. a fuel interface tank is required to isolate any contaminants from the fuel intake before it reaches the main storage tanks. It has a capacity of 1,000m$^3$ and a height in the region of 13m;
c. ancillary building with a footprint of 200m$^2$ for administrative would be two storeys with maximum height of around 9m; and
d. an area for fuel bowsers and road tankers to park and carry out the required operation.

4.8.16 The fuel storage facility would enable Sustainable Aircraft Fuel (SAF) to be delivered to site. As SAF products become available they would be provided by fuel companies directly to the airport storage facilities.

4.8.17 Landside access to the new fuel storage facility would be provided for general use of the facility, along with an emergency access track from the airside road network for firefighting purposes.

4.8.18 The Work area for the new fuel storage facility is approximately 18,666m$^2$ with a maximum parameter height of around 146.725mAOD (±1.5m).

4.8.19 Soft landscape treatments would be included at the frontage of this facility and comprise street trees, ornamental planting, and mown grassland.

## Work No. 4c(02) – Fuel Pipeline

4.8.20 A new fuel pipeline is anticipated in Phase 2a to create a connection between the new fuel storage facility and the existing national fuel delivery pipeline located to the east of the airport.

4.8.21 The Work area of the fuel pipeline connection point would occupy approximately 460m$^2$. This would comprise of a fenced hard standing area with access to connecting pipes and valves for maintenance and operational purposes, accessed from the local road network via a single access track. It would have a maximum building height of approximately 4.2m giving a maximum parameter height of approximately 139m AOD (±1.0m).

4.8.22 The new fuel pipeline will run for a length of approximately 700m at a depth to be determined during detailed design but likely to range from around 1.5m to 7m below ground. It is likely to be constructed using cut and cover, depending on final required profile.

4.8.23 The national fuel delivery pipeline route passes through the Green Belt, so the proposed connection point and above ground pipework installation needs to be located at this point within the Green Belt.

4.8.24 The new fuel pipeline that runs between the national fuel delivery pipeline and the new fuel storage facility is also within the Green Belt. However, since the pipeline will be buried the land above it will be reinstated as Green Belt once constructed.

## Work No. 4d – Water Treatment Plant

4.8.25 A new WTP is anticipated in Phase 2a, to be in operation circa 2034. The new WTP is proposed to treat sewage from the new terminal and other facilities in the Proposed Development, aircraft, and contaminated surface water runoff from the aprons, runways and taxiways. Sewage would be collected from within the Main Application Site via a new dedicated foul drainage system and combined with surface water run-off prior to treatment.

4.8.26 Each leg of the surface water catchment infrastructure from the apron, taxiway, stands, and runway would have oil interceptors with monitoring instrumentation. Contaminated surface water is likely to contain glycol, small amounts of aviation fuel, diesel, petrol, other hydrocarbon based compounds as well as salt and grit. The system has been designed to contain the first two hours of a storm event, the ‘first-flush’ likely to contain the contaminants, and discharge it to the WTP in a controlled manner for treatment prior to discharge to the infiltration tank (Work No. 4v).

4.8.27 The WTP has been designed to reduce Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen ($NH_4$-N) and Total

Suspended Solids (TSS) to an acceptable level to be discharged to ground under an Environmental Permit regulated by the Environmental Agency. The anticipated key elements of the WTP include:

a. primary treatment using rake screens, grit cyclones and a 'fats, oils and grease' tank. Screenings, grit and 'fats, oils and grease' would be removed in skips for disposal off site;
b. biological treatment through use of Moving Biological Bed Reactors;
c. secondary treatment through multi streamed dissolved air floatation plant;
d. final treatment via ultrafiltration;
e. disinfection with ultraviolet light or chlorination,
f. sludge produced on site would be thickened and stored for tankering off site; and
g. odour control plant would be installed form all parts of the building and consist of twin stage chemical scrubbers and polishing plant.

4.8.28 The WTP would be located in the east of the Main Application Site in the area excavated as part of the earthworks. The WTP would therefore be at a lower level then the aviation platform, and the open space, landscaping and habitats provided at existing ground level to the east. The maximum building height is expected to be 24m.

4.8.29 This work would occupy an area of approximately 6,770m$^2$ and have a maximum parameter height of 141mAOD(±0.75 m).

4.8.30 Soft landscape treatments would be included at the frontage of this facility and comprise street trees, ornamental planting, and mown grassland.

## Work No. 4e – Solar Battery Storage

4.8.31 Located to the north east of T2 and anticipated in Phase 2b, a Solar Battery Storage facility would be constructed to collect the energy created by the Long Stay car park (Work No. 4q(02)) photovoltaic canopies and roofs and connect it into the airport network. The Work area is approximately 5,269m$^2$ and a proposed height of 6.6m with a maximum parameter of 138m AOD.

## Work No. 4f – Airside security and access

4.8.32 Security at the airfield created in Phase 2a requires a sufficient number of control gates to allow the airport to operate efficiently. Airside areas need to be surrounded by security fencing with entrances as required.

4.8.33 There would be a 6m wide security strip, approximately level and free from either hardstanding or utilities (except those crossing the boundary) with the security fence located centrally in this strip. The height of the security fence line would be approximately 2.8m and would be installed with a cranked top.

4.8.34 An additional 24hr manned control Vehicle Control Point (VCP) would be required in the vicinity of T2 and associated apron area to support access to and from the airfield. The proposed VCP would require an area of approximately 95m x 25m, comprising a two-lane entry (2 x 6.5m) and one-lane exit (5m), two layby areas, a control check point facility (area 108m$^2$), security barriers (6 no.) and pedestrian accesses.

4.8.35 The facility would require power, communications, potable water and foul drainage connections to support the security accommodation. The plot area for the VCP is approximately 2,100m$^2$ in total with small single storey structure providing accommodation for security staff, occupying a small fraction of the area.

## Work No. 4g — Car Park P1 (known as Tiered Car Park)

4.8.36 Provision of staff parking is anticipated in Phase 2a to the south west of the Main Application Site, along New Airport Way near Luton Airport Parkway railway station. This location would benefit from the future accessibility to the terminals afforded by the Luton DART system currently under construction relieving demand on the road network at the airport.

4.8.37 Staff parking would be provided as a MSCP accessed from the Luton Airport Parkway Station approach road, adjacent to a similar facility serving the Luton Airport Parkway railway station. The MSCP would likely provide 5 storeys and contain around 1,000 parking spaces.

4.8.38 This work would occupy an area of approximately 12,620m$^2$, with a building height of 20.35m, and a maximum external parameter height of 131.5m AOD. This height allows for the upper level to have canopies/roofing to support photovoltaic panels over Car Park P1.

## Work No. 4h – Car Park P2 (known as Trailer Car Park)

4.8.39 A surface level car park would be constructed in Phase 2a to the south west of the Main Application Site, north of the Midland Mainline railway line, near Luton Parkway Airport railway station. This facility would include staff parking only, and comprise 450 parking spaces.

4.8.40 This work would occupy an area of approximately 31,025m$^2$. A proposed height of 3.85m with a maximum parameter of 123m AOD. This height allows for canopies/roofing to support photovoltaic panels over Car Park P2.

## Work No. 4i – Car Park P3 (known as Mid-Stay Car Park)

4.8.41 Car Park P3 is the airport's existing Mid-stay Car Park. It would be retained during the Proposed Development with minor amendments to the northern boundary of the car park in order to accommodate work to the adjacent A1081 / Percival Way and Work No. 6a.02 junctions. The amendments to the northern extent of the car park are anticipated to take place in Phase 1, and would result in a reduction in the overall area of parking, to provide a capacity of 1,700 parking spaces.

## Work No. 4j – Car Park P4 (known as T1 Multi-Storey Car Parks 1 and 2)

4.8.42 Existing T1 Multi-storey Car Park 1, level 2 valet parking area would be reconfigured through changes to internal white lining and road markings in Phase 1 to provide additional valet parking, giving a total valet provision of 75 spaces.

## Work No. 4k(01) – Car Park P5 (known as Long Stay Car Park)

4.8.43 The existing Long Stay Car Park, upon which T2 and aircraft stands would be built, currently accommodates 4,500 parking spaces. The area required for the proposed apron would be vacated for surcharging and new aircraft stands in Phase 1. The residual area of parking will be 47,092m$^2$ which would accommodate 2,450 cars in a block parking[3] arrangement, which maximises efficiency. The balance of parking provision lost in Car Park P5 would be re-provided in other airport car parks.

4.8.44 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees).

## Work No. 4k(02) – Car Park P5 (known as Long Stay Car Park)

4.8.45 In Phase 2a the existing Long Stay Car Park is anticipated to further reduce in size to an area of 22,683m$^2$ and would be single storey decked to accommodate 1,200 cars with a maximum building height of 7.15m, resulting in a maximum external parameter height of 162.5m AOD. This height would allow for the upper level to have canopies/roofing to support photovoltaic panels over the Car Park P5. The balance of parking lost would be re-provided in Car Park P11 (Work No.4q).

## Work No. 4l(01) – Car Park P6 - new temporary surface Car Park

4.8.46 A surface level car park would be constructed to the north east of the existing airport, south west of the Wigmore Valley Park Pavilion and near to the LBC Tidy Tip. This facility would accommodate approximately 1,250 cars block parked for Phase 1.

4.8.47 This Work would occupy an area of approximately 28,000m$^2$ and would include a small, single storey structure associated with car park management.

## Work No. 4l(02) – Car Park P6 – Adjusted temporary surface Car Park

4.8.48 In Phase 2a Car Park P6 would be reconfigured and extended to provide approximately 1,620 cars block parked. This area of parking would be completely replaced with New Century Park office buildings in Phase 2b. At this time, the Car Park P6 parking would be re-provided in other airport car parks.

4.8.49 This work would occupy an area of approximately 27,030m$^2$ and would include a small, single storey structure associated with car park management.

## Work No. 4m(01) – Car Park P7 - new temporary surface Car Park

4.8.50 A surface level car park would be constructed to the east of the existing airport, to the south side of Car Park P6 and near to the existing Long Stay Car Park.

[3] A managed parking arrangement where vehicles can be parked in locations that block other vehicles in. The controllers of the site can move vehicles to allow owner to exit when required.

This facility would be introduced to accommodate approximately 2,965 cars in Phase 1 with a work area of 72,800m$^2$.

## Work No. 4m(02) – Car Park P7 – adjusted temporary surface Car Park

4.8.51 Car Park P7 would be reduced to an area of 29,780m$^2$ in Phase 2a to make way for the construction of T2 (Work No. 3b.01), Car Park P8 (Work No. 4n) and the Coach Station (Work No. 3d). The revised area would accommodate 1,230 cars. The balance of parking provision would be provided in Car Parks P10 (Work No. 4p(01) and P11 (Work No. 4q(01)).

4.8.52 Car Park 7 would not be available in Phase 2b and the spaces would be re-provided in other airport car parks.

## Work No. 4n – Car Park P8 - temporary Car Park

4.8.53 A surface level car park to accommodate the Car Hire facility would be constructed to the east side of T2 Phase 2a. This facility would accommodate approximately 600 cars within an area of approximately 12,300m$^2$.

4.8.54 In Phase 2b Car Park P8 would be replaced with the extension of T2 (Work No. 3b(02)) and Airport Operations and Maintenance facilities (Work No. 3i). At this time the car hire parking from Car Park P8 would be re-provided within Car Park P10 (Work No. 4p(02)).

## Work No. 4o(01) – Car Park P9 staff parking

4.8.55 This Work identifies the area allocated for extended staff parking, as a result of the relocation of the Car Hire facility in Phase 1. Reconfiguration of the existing staff parking area and conversion of the Car Hire facility into staff parking would provide approximately 1,200 surface level parking spaces within an area of approximately 29,100m$^2$.

4.8.56 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would, to allow flexibility in future use, be located only at the perimeter and adjoining principal road corridors. Soft landscape treatments would comprise street trees, ornamental planting and mown grassland.

## Work No. 4o(02)- Adjusted Car Park P9 staff parking affected by Work No. 6A(02) east

4.8.57 This Work identifies the area allocated for maximising the retention of staff car parking potentially lost with the construction of the Work No. 6a(02) approximately located from the existing President Way / Prince Way junction eastwards. The remaining area of existing car parking north of the London Luton Airport Cargo Centre and Signature hangar would be redeveloped, extended east through the area of parking previously used as TUI parking, and partially decked to accommodate approximately 1,200 cars within an area of approximately 29,637m$^2$.

4.8.58 This Work would occupy an area of approximately 29,130m$^2$, with a building height of 7.15m, and a maximum parameter height of 154.5m AOD. This height allows for the upper level to have canopies/roofing to support photovoltaic

panels over Car Park P9. The balance of parking lost is to be re-provided in other airport staff car parks.

## Work No. 4p(01) – Car Park P10 - New Car Park (known as Long Stay south)

4.8.59 A surface level car park would be constructed to the east of the new apron (Work No. 2b(03)) and north of the eastern end of the runway. This facility would be constructed in Phase 2a within the area excavated as part of the earthworks giving a surface level of approximately +129m to 137m AOD (+-0.80m). The work area would be approximately 27,000m$^2$ and accommodate approximately 1,150 cars.

4.8.60 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would, to allow flexibility in future use, be located only at the perimeter of this Work Zone or adjoining principal road corridors; and in locations unaffected by Phase 2b. Soft landscape treatments would comprise street trees, ornamental planting and mown grassland.

## Work No. 4p(02) – Car Park P10 – Adjusted New Car Park (known as Long Stay south)

4.8.61 In Phase 2b Car Park P10 would be expanded to accommodate approximately 3,165 cars with a Work area of approximately 71,740m$^2$.

4.8.62 The proposed maximum height of the final Car Park P10 would be 4.95m giving a maximum height of 135m AOD. This height allows for canopies/roofing to support photovoltaic panels over Car Park P10.

4.8.63 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would, to allow flexibility in future use, be located only at the perimeter of this Work or adjoining principal road corridors. Soft landscape treatments would comprise street trees, ornamental planting and mown grassland.

## Work No. 4q(01) – Car Park P11 - New Car Park (known as Long Stay north)

4.8.64 A surface level car park would be constructed to the east of the proposed T2 (Work No. 3b(01) and north of the eastern end of the runway. This facility would be constructed in Phase 2a within the area excavated as part of the earthworks giving a surface level of approximately +127m to 131m AOD (+/- 0.80m). The Work area would be approximately 45,050m$^2$ and accommodate approximately 2,700 cars.

4.8.65 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would, to allow flexibility in future use, be located only at the perimeter of this Work or adjoining principal road corridors; and in locations unaffected by Phase 2b. Soft landscape treatments would comprise street trees, ornamental planting and mown grassland.

### Work No. 4q(02) – Car Park P11- Adjusted New Car Park (known as Long Stay north)

4.8.66 In Phase 2b Car Park P11 would be expanded to accommodate approximately 5,350 cars with a Work area of approximately 86,520m$^2$.

4.8.67 The proposed maximum height of the final Car Park P11 would be 4.95m giving a maximum parameter height of 137m AOD. This height allows for canopies/roofing to support photovoltaic panels over Car Park P11.

4.8.68 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would, to allow flexibility in future use, be located only at the perimeter of this Work or adjoining principal road corridors. Soft landscape treatments would comprise street trees, ornamental planting and mown grassland.

### Work No. 4r – Car Park P12 - New Multi Storey Car Park (Known as Short-Stay multi-storey car park)

4.8.69 In Phase 2b it would be necessary to accommodate the Short-Stay parking facility within a new multi storey car park built over the DOZ (Work No. 3e(01). The Work area would be approximately 30,131m$^2$.

4.8.70 The maximum height of the final Car Park P12 would be approximately 17m giving a maximum parameter height of 171m AOD. This height allows for the upper level to have canopies/roofing to support photovoltaic panels over Car Park P12.

4.8.71 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees).

### Work No. 4s – Replacement car parking affected by Work No. 6a(02) temporary provision

4.8.72 In Phase 2a an area of surface level car parking will be located within the area currently occupied by Hangar 24, to provide replacement car parking for spaces affected by the construction of Work No. 6a(02). This facility would accommodate approximately 80 cars within an area of approximately 2,650m$^2$.

### Work No. 4t(01)- Replacement car parking affected by Work No. 6a(02) permanent provision

4.8.73 In Phase 2a an area of surface level car parking is proposed to replace spaces which are affected by the construction of Work No. 6a(02). This Work is located to the north of the ex-Monarch training facility and will comprise approximately 25 spaces within an area of approximately 620m$^2$.

### Work No. 4t(02)- Replacement car parking affected by Work No. 6a(02) permanent provision

4.8.74 In Phase 2a an area of surface level car parking is proposed to replace spaces which are affected by the construction of Work No. 6a(02). This Work comprises three car parks in the vicinity of the proposed junction with Provost Way, to the

west of GKN. The three car parks covered by this Work will comprise approximately 275 spaces within a total area of approximately 8,330m$^2$.

4.8.75 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users.

### Work No. 4t(03)- Replacement car parking affected by Work No. 6a(02) permanent provision

4.8.76 In Phase 2a an area of surface level car parking is proposed to replace spaces which are affected by the construction of Work No. 6a(02). This Work comprises works to the front and rear of David Berryman within Luton Airport Executive Park, and seeks to re-provide any existing parking spaces affected by Work No. 6a(02) within the Proposed Development boundary.

4.8.77 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users.

### Work No. 4t(04)- Replacement car parking affected by Work No. 6a(02) permanent provision

4.8.78 In Phase 2a an area of surface level car parking of approximately 4,050m$^2$ at around +157m to 158m AOD (+/- 0.80m) is proposed to replace spaces which are affected by the construction of Work No. 6a(02). This Work comprises works within Luton Airport Executive Park, and seeks to re-provide any existing parking spaces affected by Work No. 6a(02) within the existing Proposed Development boundary. Up to 100 parking spaces will be affected by the proposed Airport Access Road (AAR) (Work No. 6a(02)), and these will be re-provided through amendments to areas of landscaping and existing parking areas. There will be no net loss of parking as a result of the proposals. These areas of replacement parking will only be provided at Phase 2a, as this entire area is planned to be reconfigured to accommodate additional hangars at Phase 2b (Work No. 4b), with removal of existing buildings and car parks.

4.8.79 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users.

### Work No. 4t(05)- Replacement car parking affected by Work No. 6a(02) permanent provision

4.8.80 In Phase 2a an area of surface level car parking is proposed to replace spaces which are affected by the construction of Work No. 6a(02). This Work comprises works within an area to the north of Luton Airport Cargo Centre, and provides approximately 90 spaces within a total area of approximately 1,900m$^2$.

4.8.81 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users.

### Work No. 4t(06)- Replacement car parking affected by Work No. 6a(02) permanent provision (Phase 2b)

4.8.82 In Phase 2b an area of surface level car parking is proposed to replace spaces which are affected by the construction of Work No. 6a(02). This Work comprises two car parks in the vicinity of the proposed signalised junction with Provost Way and the link to President Way, to the west of GKN and south of Work No. 6a(02). The two car parks covered by this Work will comprise approximately 120 spaces within a total area of approximately 3,070m$^2$.

4.8.83 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users.

### Work No. 4u - Police Station

4.8.84 A new Police Station would be provided to replace the existing police station, located north west of T1, replacing three existing buildings, anticipated to be undertaken in Phase 2a.

4.8.85 The Work area of the Police Station would occupy approximately 6,800m$^2$. This would comprise of a single compound and be a mixture of 1 and 2 storeys dependant on function. It would also include a connection to the proposed AAR. The Work area has a maximum proposed height of approximately 12m with a maximum parameter of 173.1m AOD.

### Work No. 4v – Infiltration Tanks

4.8.86 The new drainage system anticipated in Phase 2a will provide effective surface water drainage, with a high level of flood risk protection over the long term both within and downstream of the development while reducing risk of water pollution.

4.8.87 There are two infiltration tanks proposed below ground to reduce the risk of bird strikes and to lessen visual impact:

a. Tank 2 - located to south east of the airport, would be 75,000m$^3$ and would contain uncontaminated surface water discharge from the airside and the landside, approximately 5m below ground level. The area above the tank would allow for containment of localised flooding in extreme storm events. It has been sized such that it would generally remain mostly dry, apart from severe storm events; and

b. Tank 3 - located north of the WTP (described in Work No. 4d), would be 15,590m$^3$ and would be located approximately 10m below the existing ground level, under a long stay car park. It would drain the overflow of the recycled surface water from the WTP.

## 4.9 Work No. 5 – Landscaping and Mitigation

4.9.1 These works include the landscaping to be implemented as part of the Proposed Development in and around the airport. This includes the replacement open space which would be required to mitigate the loss of Wigmore Valley Park, the urban realm within the airport infrastructure, and habitats and screening vegetation required to mitigate landscape, visual, heritage and biodiversity impacts identified as a result of the EIA.

4.9.2 The Work Nos. are numbered sequentially and described in subsequent sections of this chapter, and their location shown in the indicative Work Plans provided as **Figures 4.1 to 4.3** in Volume 4 of this PEIR. The maximum extent and height of development proposed in that area are provided in the description in this chapter.

## Work No. 5a – Terminal Approach

4.9.3 Strategic landscape mitigation would be delivered alongside Work No 6a(02) anticipated in Phase 2a, on and adjoining the escarpment to the west of the airport. The proposed layout of this strategic landscape mitigation has been agreed with representatives from LBC and will comprise the management of 0.5ha of existing woodland, the planting of 0.15ha of native scrub, the seeding of 1.1ha of neutral meadow grassland and the creation of 650m² of exposed chalk on lower-lying shallow slopes, as shown in **Figure 4.5** in Volume 4 of this PEIR. Proposed landscape treatments would reflect the principles described in the Draft Landscape and Biodiversity Management Plan (LBMP) provided as **Appendix 8.2** in Volume 4 of this PEIR.

4.9.4 Various public realm improvements, including the seeding of amenity grassland and planting of street trees, clipped hedgerows and ornamental shrubs, would be delivered adjoining the AAR, at the frontage to the new terminal and within the development area to the north of the airfield in Phases 2a and 2b. These measures also form part of the landscape mitigation and are described in the other Work No. where relevant.

## Work No. 5b – Replacement Open Space

4.9.5 The replacement open space would be located to the east of the existing greenspace at Wigmore Valley Park and would be at least 48.3 ha in size. It would be delivered in Phase 1 ahead of any earthworks taking place within the existing Wigmore Valley Park not associated with the replacement open space. The proposed layout, habitats and facilities for the replacement open space are shown in **Figure 14.11** in Volume 4 of this PEIR.

4.9.6 The replacement open space has been located to be accessible to the adjoining communities it serves, including the future communities promoted under emerging policy to the east of Luton, and would include several surfaced paths to upgrade connection into the surrounding communities and rights of way network.

4.9.7 The replacement open space would retain the existing main entrance into Wigmore Valley Park, adjoining Wigmore Hall / Wigmore Pavilion, and would incorporate several of the enhanced facilities proposed to be delivered in this area as part of New Century Park (i.e. the improved skate park and play facilities, the improved Wigmore Pavilion and most of the proposed surfaced footpaths).

4.9.8 The proposals would retain a section of the mature hedgerow vegetation to the south east of the existing parkland and would encompass the mature hedgerow and coniferous plantation that sits atop the ridge line of Winch Hill.

4.9.9 Landscape treatments proposed within the replacement open space would reflect the principles described in the Draft LBMP provided as **Appendix 8.2** in Volume 4 of this PEIR, have been selected in response to existing site

conditions and local character guidance and have been positioned strategically to improve habitat connectivity, provide visual screening, and frame people's views away from the airport and Proposed Development. Landscape treatments have been agreed with representatives from LBC, North Hertfordshire District Council (NHDC) and Hertfordshire County Council (HCC) and will be secured as part of the Proposed Development.

4.9.10 The proposals would largely maintain the existing landform, with most areas experiencing only localised adjustments to improve access and user facilities. Localised land raising, and the construction of an earth bund is proposed to the south west of the existing Wigmore Valley Park entrance as part of Work No. 1a, to improve accessibility within the park and for screening purposes north and east of the Work No. 6a(02).

4.9.11 Public access within the replacement open space would be encouraged through the resurfacing and in some instances upgrading, of existing Public Rights of Way and through the creation of new surfaced paths.

4.9.12 A range of users would be encouraged to make use of the replacement open space, including but not limited to; families, teenagers, school groups, the elderly, walkers, joggers, plane-spotters, cyclists, skaters and horse riders, and appropriate signage and facilities would be accommodated to help facilitate these various user groups.

4.9.13 It is envisaged that the replacement open space would deliver additional opportunities for unstructured or natural play and would also include some additional recreational facilities, the specific nature of which is still to be determined but could potentially include additional picnicking facilities, play equipment, gym equipment or trim-trail measures.

4.9.14 Soft landscape treatments would include the management of over 5ha of existing woodland, alongside the provision of over 6ha of new broadleaved woodland, 8ha of amenity grassland, 20ha of neutral meadow grassland, 1.8ha of native scrub vegetation and creation or restoration of more than 3.85km of mixed-species hedgerows with hedgerow trees. Existing and proposed vegetation would be managed to meet LBC maintenance standards and to achieve biodiversity aims, as described in the Draft LBMP provided as **Appendix 8.2** in Volume 4 of this PEIR.

4.9.15 Soft landscape treatments associated with this Work would be secured as part of the Proposed Development and would be delivered within 18 months following granting of the DCO. Where feasible, opportunities would also be sought to seed and plant up areas ahead of consent.

## Work No. 5c(01) – Landscape Restoration

4.9.16 Approximately 650m of mixed-species hedgerows with hedgerow trees would be delivered as strategic landscape mitigation planting, adjoining Winch Hill Road and on the eastern boundary of the field to the east of Winch Hill Road, for screening purposes in Phase 1. The planting and management of proposed mixed-species hedgerows and hedgerow trees would reflect the principles described in the Draft LBMP provided as **Appendix 8.2** in Volume 4 of this PEIR. As a narrow hedgerow subject to further confirmation during design development this work is not shown in the Illustrative Works Location figures.

4.9.17 Approximately 3ha of existing woodland vegetation within this Work would also experience changes to land management for biodiversity reasons from Phase 1, as described in the Draft LBMP provided as **Appendix 8.2** in Volume 4 of this PEIR; including approximately 1.9ha of Ancient Woodland adjoining the aviation platform and to the west of Winch Hill Road. It is envisaged that some tree removal would be undertaken within the ancient woodland for arboricultural reasons in Phase 1.

## Work No. 5c(02) – Landscape Restoration

4.9.18 Landscape restoration would be delivered in Phase 2b, following the earthworks described in Work No.1a, which would include also the re-grading of landform east of the proposed fuel storage facility (Work No. 4c(01)) with excavated material deemed technically unsuitable for use beneath the aviation platform to re-establish a more 'natural' and less 'engineered' appearance in this area; and the restoration of soil profiles suitable to receive the envisaged landscape treatments. The proposed layout, habitats and facilities for this Work No. have been agreed with representatives from LBC, NHDC and HCC and are shown in **Figure 14.13** in Volume 4 of this PEIR.

4.9.19 Strategic landscape mitigation on the platform embankment and engineered slopes surrounding the car parks to the west of Work No. 4c(01) would include the seeding of approximately 11.5ha of amenity grassland, alongside the planting of over 1.4ha of broadleaved woodland and approximately 1.3ha of neutral meadow grassland adjacent to Work No. 6b(03).

4.9.20 Strategic landscape mitigation proposed to the east of Work No. 4c(01) would be more varied and include the planting of a further 0.9ha of broadleaved woodland, the planting of a further 1km of mixed-species hedgerows and hedgerow trees, and the establishment of a further 1.2ha of neutral meadow grassland. 12.5ha of calcareous grassland would also be delivered in this area that would be managed through low intensity grazing.

4.9.21 Proposed landscape treatments and their management would follow the principles described in the Draft LBMP provided as **Appendix 8.2** in Volume 4 of this PEIR.

## Work No. 5d(01) – Habitat Creation

4.9.22 Habitat creation is proposed to the east of the Main Application Site in an area of existing arable land owned by the Applicant in Phase 1. The landscape strategy for this plot has been developed in close collaboration with the project ecologists and includes the creation or restoration of approximately 4.5km of mixed species boundary hedgerows with hedgerow trees and the creation of over 30ha of neutral meadow grassland that would be managed through a mixture of cutting and low-intensity grazing.

4.9.23 Over 2.4ha of woodland planting is proposed on areas of raised land east of the junction between Winch Hill Road and Darley Road, and on the eastern and northern boundary of this Work, to provide screening from bridleway Kings Walden 052; and in the low-lying land to the west of this Work to improve habitat connectivity along the valley. A pond would also be delivered in the valley for biodiversity value.

4.9.24 Approximately 1ha of existing woodland vegetation within this Work would also experience changes to land management from Phase 1; in accordance with the principles described in the Draft LBMP.

4.9.25 Habitat creation areas would be secured as part of the Proposed Development, have been agreed with representatives from LBC, NHDC and HCC and are shown in **Figure 14.11** in Volume 4 of this PEIR.

### Work No. 5d(02) – Habitat Creation

4.9.26 A further 11ha of existing arable land owned by the Applicant would, reflecting the principles set out in the Draft LBMP, be converted to low-intensity grazed meadow for habitat creation reasons in Phase 2a; following construction of the fuel pipeline connection and its associated maintenance access track (Work No 4c(02)).

### Work No. 5e – Off-site Hedgerow Restoration and Screening

4.9.27 This Work is formed from several areas of arable field boundaries that are not owned by the Applicant, where over 7.5km of mixed species hedgerow restoration and/or hedgerow tree planting is proposed to strengthen landscape character and structure, and to mitigate potentially significant effects on people's visual amenity when living or undertaking recreational activities in the surrounding area.

4.9.28 The planting of off-site hedgerows and hedgerow trees would be undertaken in Phase 1 and would reflect the principles set out in the Draft LBMP. Planting and management would be achieved using existing field access and circulation routes wherever feasible. The proposed off-site planting locations have been agreed with representatives from LBC, NHDC, HCC and Central Bedfordshire District Council (CDBC) and are shown in **Figure 14.11** in Volume 4 of this PEIR.

## 4.10 Work No. 6 – Highways

4.10.1 Extensive traffic modelling has been undertaken to inform the **Getting to and from the airport – our emerging transport strategy.** A number of highway interventions have been identified to mitigate impacts on the highway network as a result of the increased passenger numbers associated with the Proposed Development.

4.10.2 Each highway intervention included as part of the Proposed Development is numbered sequentially, described below, and their location shown in the indicative Work Plans provided as **Figures 4.1 to 4.3** of Volume 4 to this PEIR. Outline design drawings showing the proposed Work are provided in Volume 4 of this PEIR and referred to in the descriptions provided below. Further details on proposed highway interventions can be found in the **Getting to and from the airport – our emerging transport strategy.**

### Work No. 6a – New road providing access to the east of the airport

4.10.3 The majority of passengers arriving by road approach and depart through Luton and via the M1 motorway. A new road providing access to the east of the airport, the AAR (previously referred to as the Century Park Access Road) was

proposed as part of the New Century Park application. However, the Applicant has incorporated the entire alignment of this access road within the Proposed Development. This new road will be delivered as three Work No. over the three Phases of the Proposed Development as described below.

## Work No. 6a(01)

4.10.4 The extents of this Work comprise improvements and reconfiguration of the roundabout junction between A1081 New Airport Way, Airport Way and Percival Way. It is proposed to create a four-arm signalised junction at this location in order to provide additional capacity. The proposed outline design is shown in **Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0010** in Volume 4 of this PEIR.

4.10.5 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees) immediately adjacent to the carriageway but will include native scrub vegetation and neutral meadow grassland on re-graded slopes. Soft landscape treatments will consider highway requirements, service corridors and visibility splays.

## Work No. 6a(02)

4.10.6 This Work No. includes a new dual-carriageway link road, which connects to A1081 New Airport Way via a new three-arm signalised junction to the immediate west of Work. No. 6a(01). The alignment of the road runs north from the A1081, travelling roughly parallel to Percival Way to the point at which a new three-arm roundabout is provided adjacent to Provost Way. At this point, the proposed road alignment travels south as a short length of dual-carriageway, before connecting to the existing alignment of Percival Way via a three-arm roundabout.

4.10.7 Minor amendments to kerblines and white lining are proposed along the section of Percival Way, between Provost Way and Frank Lester Way. As part of this Work, amendments are also proposed to Frank Lester Way to make the road one-way northbound between Percival Way and Eaton Green Road. This proposal ties into the junction proposals at Eaton Green Road, which is delivered as part of within the East Luton Study[4].

4.10.8 To the east of the junction with Frank Lester Way, the proposed dual carriageway continues in an easterly direction up to a four-arm roundabout at the junction with President Way, in the vicinity of the existing Car Hire centre. This junction is provided to give access to President Way and a new area of parking to the north side of the dual-carriageway. In addition, the roundabout enables easier access to/from some of the retained sites along the dual-carriageway.

4.10.9 A direct link from the retained section of President Way and the new airport link road is provided to the south of the road, to minimise the impact on access to and from various properties, and reduce the need for dead end routes.

[4] The East Luton Study is a series of other highway works that are proposed by LBC. These works will be undertaken by LBC and form part of the future baseline, not part of the Proposed Development. These other highway works will be considered appropriately in the cumulative assessment as they are considered other developments for the purpose of that assessment.

4.10.10 East of the roundabout, the dual carriageway continues east for a distance of approximately 200m, at which point a four-arm signalised junction is proposed to give access to T2, New Century Park, and a link road which leads north to connect with Eaton Green Road.

4.10.11 To the east of the four-arm signalised junction, the road continues east to a compact four arm roundabout, which provides access to New Century Park, operational areas within the airport, and the excavated area which houses areas of car parking and other operational facilities associated with the airport.

4.10.12 Minor amendments are proposed to the junction within Work No. 6a(01) in order to accommodate the new dual-carriageway alignment.

4.10.13 The location and area of this Work in shown in the **Figure 4.2** and the outline design is shown in **Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0023**, both provided in Volume 4 of this PEIR.

4.10.14 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees) immediately adjacent to the carriageway but will include native scrub vegetation and neutral meadow grassland on re-graded slopes (refer also to Work No. 5a). Soft landscape treatments will consider highway requirements, service corridors and visibility splays.

### Work No. 6a(03)

4.10.15 This Work comprises amendments to the length of Percival Way between Provost Way and Frank Lester Way, together with a new section of dual-carriageway to tie into the works delivered in Work No. 6a(02).

4.10.16 The three-arm roundabout shown along the proposed dual-carriageway to the west of Provost Way, would be replaced with a four-arm signalised crossroads. A realigned link road connects the new signalised junction with the retained section of Percival Way, with a dedicated access to areas of parking and businesses to the north of the proposed junction.

4.10.17 East of the proposed signalised crossroads, a new dual-carriageway link passes through a number of existing buildings which are required to be demolished, including part of the GKN site. This new section of dual-carriageway road connects the eastern and western lengths of dual-carriageway created as part of Work No. 6a(02).

4.10.18 The location and area of this Work in shown in **Figure 4.3** and the proposed outline design is shown in **Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0033**, both provided in Volume 4 of this PEIR.

4.10.19 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees) immediately adjacent to the carriageway but will include native scrub vegetation and neutral meadow grassland on re-graded slopes (refer also to Work No. 5a). Soft landscape treatments will consider highway requirements, service corridors and visibility splays.

## Work No. 6b - Airport Public Roads

4.10.20 Throughout the Proposed Development a series of access and distributor roads are proposed. These roads would provide access to the various planned facilities and areas and also to the areas within the New Century Park Development which do not form part of the Proposed Development. These roads would also form the arterial routes for statutory and other services. The roads would not be adopted and would be the responsibility of the airport.

4.10.21 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees) and consider highway requirements, service corridors and visibility splays.

### *Work No. 6b(01) - Airport Public Roads*

4.10.22 The airport public roads at Phase 1 comprise modifications to and extension of the existing Long Stay Car Park access roads, which lead from the eastern extent of President Way. The proposed carriageway will continue north east from the current extents of the existing car park access road as a two-lane single carriageway, to provide access to Work No. 4l(01) (Temporary Surface Car Park P6) and Work No. 4m(01) (Temporary Surface Car Park P7).

### *Work No. 6b(02) - Airport Public Roads*

4.10.23 The airport public roads at Phase 2a comprise highways which provide access to T2, and airport related facilities within the excavated area. These roads lead from the eastern end of Work No. 6a(02), and continue south towards T2 as a dual carriageway. The length of road which continues east to the excavated area is initially formed of a length of dual carriageway over a length of approximately 75m, before joining a four-arm roundabout which gives access to various other Works. East of the roundabout the carriageway continues as a two-lane single carriageway as it travels towards Work No. 4c(01) (Fuel Storage Facility) and Work No. 4d (Water Treatment Plant).

### *Work No. 6b(03) - Airport Public Roads*

4.10.24 The airport public roads at Phase 2b comprise realignment and widening of the section of Phase 2a highway which leads into the excavated area from the eastern end of Work No. 6a(02). The realigned section of carriageway begins to the east of the four-arm roundabout created at Phase 2a, and is once more formed of a two-lane single carriageway that leads into the excavated area. The road continues to provide access to Work No. 4c(01) (Fuel Storage Facility) and 4d (Water Treatment Plant), in addition to Work 4q(02) (Long Stay Car Park P11) and Work 4p(02) (Long Stay Car Park P10).

## Work No. 6c - Airport Operational Roads

4.10.25 The proposed non-public operational roads would require new or enhanced barriered junctions to the public highway, as they would not be accessible by the public.

4.10.26 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e.

mown grass, ornamental shrub and hedgerow planting and street trees) and consider highway requirements, service corridors and visibility splays.

### *Work No. 6c(01) - Airport Operational Roads*

4.10.27 The proposed work associated with this Work No. includes roads around the stands and the terminal, and roads around the perimeter of the airfield. These roads consist of: inter-stand roadways, head of stand roads, access roads on either side of T2 to access the baggage hall, a road to the vehicle control point east of the terminal, a road from the ERUB to the east to connect the apron roads to the airfield perimeter track and part of the perimeter track to west of the airport to be realigned due to the new runway link.

### *Work No. 6c(02) - Airport Operational Roads*

4.10.28 The proposed work associated with this Work No. includes the roads around the new stands and parts of the airfield perimeter track. These roads consist of: inter-stand roadways, head of stand roads, a road east of Taxiway Kilo to the ERUB and beyond to connect with the airfield perimeter track, runway access roads from the new Fire Training Ground location south of the runway and upgrade of the airfield perimeter track west of the runway to allow for Firefighting Trucks to be able to travel from the Fire Station to the Fire Training Ground.

## Work No. 6d – Work to Airport Road at Public Highways (barriered junctions)

4.10.29 Work to be undertaken to Airport Road adjacent to Winch Hill Lane, with barriered junction to fuel pipeline access road.

4.10.30 The public realm associated with this Work No. would include both hard and soft landscaped areas, signage, and surface treatments accessible to a wide range of users. Soft landscape treatments would be formal in appearance (i.e. mown grass, ornamental shrub and hedgerow planting and street trees) and consider highway requirements, service corridors and visibility splays.

## Off-Site Highway Interventions

4.10.31 Local and strategic traffic modelling has been undertaken based on forecast passenger demand. This modelling has identified a series of Off-site Highway Interventions required as a result of the Proposed Development, and preliminary designs have been developed to improve junction function and capacity at a number of locations, to be delivered as airport capacity increases. These have been considered as part of the Proposed Development in this PEIR, and their location is shown on the **Figure 4.1 to 4.3** provided in Volume 4 of this PEIR. A brief outline description of the Work, showing, when they are required, is provided in **Table 4.2** below with reference to a corresponding drawing showing the outline design proposed provided in Volume 4 of this PEIR and the **Getting to and from the airport – our emerging transport strategy**.

4.10.32 Proposed Work would be largely within the highway. No buildings would be directly impacted by the proposed highway Work.

4.10.33 The traffic modelling included a series of other highway works that are proposed by LBC as part of the East Luton Study. These works would be undertaken by LBC and form part of the future baseline in the traffic modelling, not part of the

Proposed Development. These other highway works will be considered appropriately in the cumulative assessment of this ES as they are considered ‘other developments’ for the purpose of that assessment.

Table 4.2: Off-Site Highway Interventions in the Proposed Development

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| Work No. 6e | Windmill Road / Kimpton Road<br>(East Luton Study with further airport related enhancements) | Minor widening of the carriageway and kerb realignment on Windmill Road to convert the mini-roundabout into a three-arm signalised junction.<br>There would be no anticipated impact on the highway boundary or third - party land.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0006** | No additional mitigation required | No additional mitigation required |
| Work No. 6f | A1081 New Airport Way / B653 / Gipsy Lane | Reconfiguration is shown to the A1081 to provide three lanes in both directions through the signalised junction with Gipsy Lane. This widening is achieved by narrowing the central reserve, with no amendments required to the existing outer kerblines. The existing right turn lane from A1081 into Gipsy Lane is to be removed.<br>Widening is indicated along Gipsy Lane on the immediate approach to the A1081 junction, to provide additional left turn entry lanes to the A1081. This widening would be provided in existing landscaped areas.<br>Widening is also indicated to the A505 Gipsy Lane to the north of the roundabout with Lower Harpenden Road to provide additional entry capacity to the roundabout. This widening is accommodated within an existing verge area. | No additional mitigation required | No additional mitigation required |

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| | | **Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0005** | | |
| Work no. 6g | A1081 New Airport Way / A505 Kimpton Road / Vauxhall Way | - | Additional widening is indicated along A1081 New Airport Way to provide a dedicated left turn lane into A505 Kimpton Road. These works are in addition to the planned works forming part of the East Luton Study, to be undertaken by others.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0016** | No additional mitigation required |
| Work no. 6h | Eaton Green Road / Lalleford Road | Mini roundabout to be replaced with a three-arm signalised junction. Minor kerbline amendments are necessary along Eaton Green Road and Lalleford Road. All Work contained within the highway boundary.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0011** | No additional mitigation required | No additional mitigation required |
| Work no. 6i | Wigmore Lane / Crawley Green Road | - | Wigmore Lane/Crawley Green Rd and Wigmore Lane/Raynham Way roundabouts to be replaced by four arm signalised junctions.<br>Local carriageway widening and realignment is proposed along Wigmore Lane within the existing highway boundary. Realignment of Twyford Drive is proposed into existing grass verge areas.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0012** | No additional mitigation required |

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| Work no. 6j | Eaton Green Road / Wigmore Lane | - | Roundabout to be replaced with a four-arm signalised junction, incorporating the Wigmore Place arm. Local widening along Wigmore Lane to provide two lanes in either direction, with the Asda mini-roundabout converted to signals.<br>Reconfiguration of the existing Eaton Green Road carriageway to provide two entry and two exit lanes from the Wigmore Lane junction, with widening to the south of Eaton Green Road into existing verge areas. Work would tie into the Work No. 6a(02) link road which runs to the south east and connects with Work No. 6a(02).<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0013** | No additional mitigation required |
| Work no. 6k | A1081 / London Road (North) | Amendments to the road markings to provide a spiral operation. Minor amendments to kerblines on the east of the roundabout to provide a dedicated exit lane onto the A1081 eastbound.<br>Partial signalisation of the roundabout on two of the arms; the northbound off-slip from the A1081 and the exit from Newlands Park.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0008** | No additional mitigation required | No additional mitigation required |
| Work no. 6l | A1081 / London Road (South) | - | Part-time signals to be introduced on the roundabout (PM only) | No additional mitigation required |

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| | | | **Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0017** | |
| Work no. 6m | Windmill Road / St. Mary's Road / Crawley Green Road | | Widening, reconfiguration and signalisation of roundabout to provide additional traffic capacity. Widening to the circulatory carriageway through realigning and narrowing of the central island, with all arms of the roundabout to be signalised. Amendments are required to the extents of the subway portals to accommodate the widened roundabout carriageway.<br>Kerbline amendments are also shown along Windmill Road to provide a two-lane diverge from the roundabout.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0015** | |
| Work no. 6n | Crawley Green Road / Lalleford Road | - | Mini roundabout to be replaced with a three-arm signalised junction. Minor kerbline amendments are necessary along Crawley Green Road and Lalleford Road, with all of the Work appearing to be contained within the highway boundary.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0018** | No additional mitigation required |
| Work no. 6o | A602 Park Way / A505 Upper Tilehouse Street | - | Minor widening is proposed to the roundabout entries, to provide increased lengths of two lane entry. The widening | No additional mitigation required |

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| | | | on Park Way will be contained within an existing grass verge / landscape area, with the proposed realignment of Upper Tilehouse Street potentially requiring amendments to an existing retaining structure and vehicle restraint system.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0027** | |
| Work no. 6p | A505 Moormead Hill / B655 Pirton Rd / Upper Tilehouse Street | - | Minor widening and realignment of Upper Tilehouse Street entry is proposed, to provide an increased length of two lane entry to the existing mini-roundabout. All of the Work would be contained within the existing highway boundary.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0026** | No additional mitigation required |
| Work no. 6q | A602 Park Way / Stevenage Road | | Minor widening of carriageway and realignment of various kerblines is proposed on A505 Park Way, Hitchin Hill and A602 Stevenage Road to provide increased lengths of two lane entry to the roundabout. These Work are restricted to existing grass verge and landscaping areas, within the highway boundary.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0028** | No additional mitigation required |
| Work no. 6r.01 | M1 J10<br>(All proposals will be subject to ongoing development and | Widening to the northbound off-slip to provide a third lane on the approach to the roundabout, with the widening | See work no. 6r.02 | See work no. 6r.03 |

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| | agreement with Highways England) | accommodated in existing verge and embankment. Widening to the western circulatory carriageway to provide four circulating lanes, with this widening accommodated in the existing landscaped area on the inside of the roundabout. Amendments to the exit from the roundabout onto the A1081, to allow three lanes to diverge from the roundabout. This widening would be accommodated within existing verge area.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0009** | | |
| Work no. 6r.02 | | - | Widening to the A1081 westbound carriageway to enable two left turn lanes to continue onto the M1 southbound on-slip, where widening is also proposed.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0024 and LLADCO-3C-ARP-SFA-HWM-DR-CE-0025** | See work no. 6r.03 |
| Work no. 6r.03 | | - | - | Widening of the western circulatory carriageway to provide five lanes. Realignment of the A1081 exit to enable three lanes to exit roundabout onto A1081, with segregated left turn lane removed and junction of southbound off-slip signalised. Provision of two southbound merging lanes onto M1 through All-Lane Running. |

| Work No. | Name | Form of Mitigation and Anticipated Delivery | | |
|---|---|---|---|---|
| | | Phase 1 | Phase 2a | Phase 2b |
| | | | | **Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0029 and LLADCO-3C-ARP-SFA-HWM-DR-CE-0030** |
| Work no. 6s | Eaton Green Road / Frank Lester Way | - | Roundabout to be replaced with a signalised junction, and Frank Lester Way to be made one-way northbound as per the adjacent Work No. 6a(02) proposals.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0014** | No additional mitigation required |
| Work no. 6t | A505 Vauxhall Way / Eaton Green Road | Roundabout to be partially signalised. Signalisation of roundabout is proposed in addition to works planned as part of the East Luton Study, to be undertaken by others. Signalisation of roundabout is only required at 21.5 mppa, in advance of delivery of Work 6a.<br>**Drawing LLADCO-3C-ARP-SFA-HWM-DR-CE-0007** | No additional mitigation required | No additional mitigation required |

## 4.11 Construction

4.11.1 This section presents a summary list of the detailed construction information used to inform this PEIR which is provided in full in the Construction Method Statement and Programme Report provided as **Appendix 4.1** in Volume 3 of this PEIR. That report contains the detailed construction information on which this assessment has been based, and should be read in conjunction with this chapter; including:

a. project construction phases;

b. construction programme;

c. further information for each construction phase:

   i. key construction constraints and interfaces;
   ii. construction programme and phasing; and
   iii. construction methodology.

d. project logistics, including:

   i. construction management;
   ii. health and safety;
   iii. working hours;
   iv. number of operatives;
   v. construction logistics plan;
   vi. specialist logistics contractor;
   vii. number of construction operatives;
   viii. proposed construction compounds;
   ix. security;
   x. concrete batching plant;
   xi. construction traffic and transport;
   xii. construction vehicle numbers;
   xiii. temporary site haul roads;
   xiv. construction plant and equipment;
   xv. craneage and tall equipment plan;
   xvi. environmental management;
   xvii. surface water drainage;
   xviii. water environment;
   xix. removal of temporary structures and buildings;
   xx. removal of temporary infrastructure; and
   xxi. neighbours.

e. appendices, with further detail on:

   i. outline programme;
   ii. phasing diagrams;
   iii. vehicle numbers;
   iv. number of site operatives;
   v. demolition schedule and demolition drawings;
   vi. water demand;
   vii. primary construction plant; and
   viii. waste quantities.

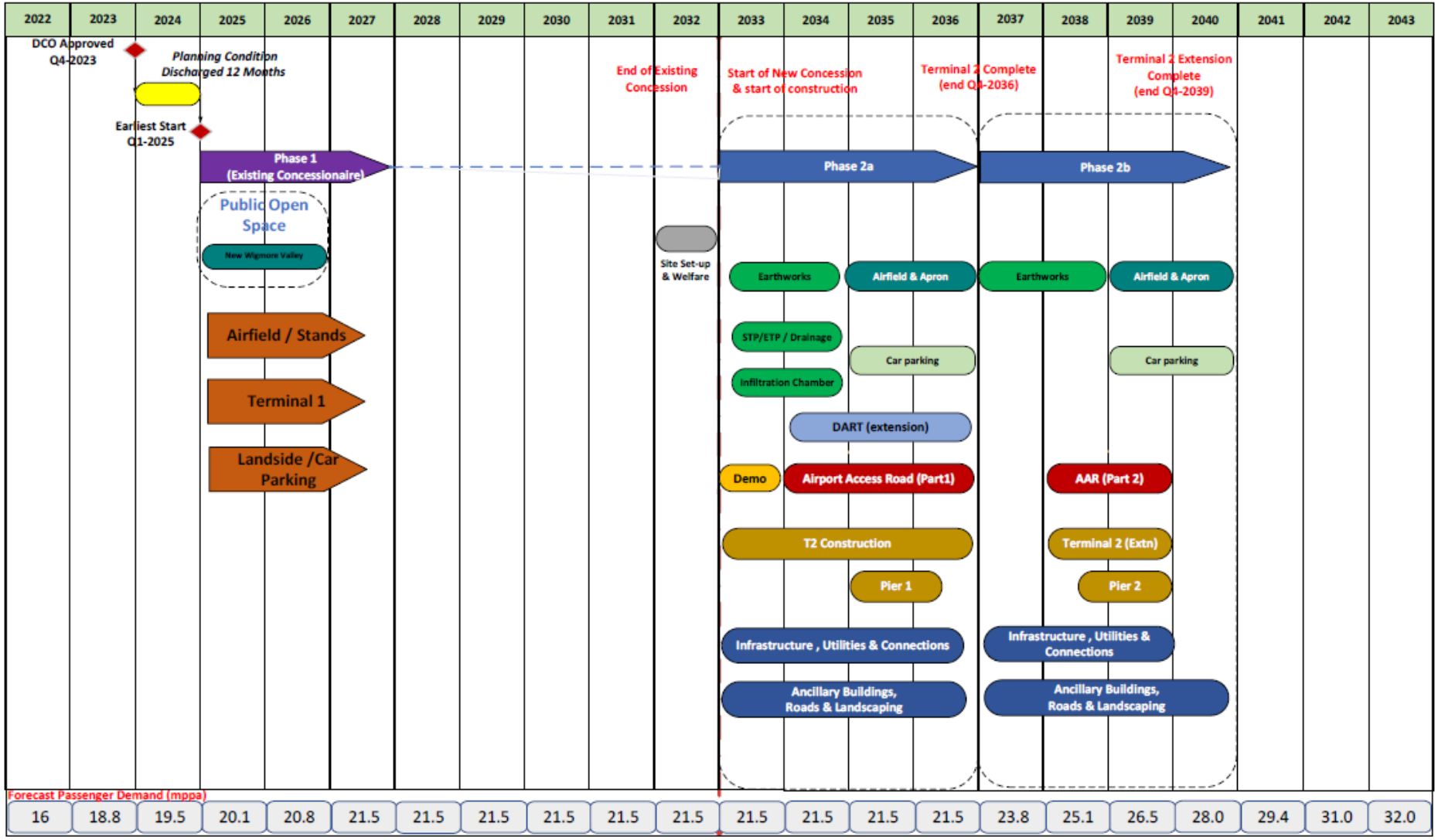
## Construction Phasing and Outline Schedule

4.11.2 The Proposed Development will be delivered incrementally but is comprised of two principal construction phases. As described in **paragraph 4.2.4**, however, for the purposes of assessment three assessment phases are considered with each phase delivered to meet the forecast passenger demand. The majority of construction is scheduled to take place during Phase 2a and Phase 2b.

4.11.3 It is recognised that delivery of the Proposed Development will take several years, during which time the airport is to remain operational. An indicative outline programme is provided in **Inset 4.1**. A summary of key construction activities planned in each of the Phases is provided in this chapter.

4.11.4 The key construction actives anticipated to take place in each phase are described in **Appendix 4.1** in Volume 3 to this PEIR.

# Inset 4.1: High-Level Construction Schedule



## Draft Code of Construction Practice

4.11.5 The Draft Code of Construction Practice (CoCP) provided as **Appendix 4.2** in Volume 3 to this PEIR describes comprehensive control measures and standards proposed to be implemented throughout the construction of the Proposed Development. The Draft CoCP will be updated for submission as part of the ES, however it will remain as 'draft' as it is likely to be considered further and amended with a final draft agreed during the examination process.

4.11.6 The final Draft CoCP would be used to inform the final version of the CoCP as agreed by lead contractor with the Local Planning Authorities as a Requirement of the DCO.

4.11.7 Whilst multiple construction works would run concurrently throughout the Proposed Development, the CoCP would act as the overarching document for all construction related activity. The CoCP would present a consistent approach to the environmental management of construction activities for the duration of construction of the Proposed Development.

4.11.8 The purpose and structure of the Draft CoCP are outlined as:

a. Policy and Environmental Management Principles: an overview of the Applicant's Sustainability Policy and the identified environmental management systems (EMS) to be implemented during construction;

b. Management approach: the mechanisms by which broader environmental commitments and detailed requirements in local community areas are passed from the Applicant to the lead contractor;

c. Community relations and stakeholder engagement: an overview of engagement with the local community, including the mechanisms for communications, enquiries and complaints;

d. General requirements, including hours of work, good housekeeping, security; and

e. Requirements by environmental topic: an outline of the measures that would be employed to reduce disturbance from construction activities, as far as reasonably practicable including:

   i. accident and incident prevention and control;
   ii. agriculture land quality;
   iii. air quality (Outline Air Quality Management Plan);
   iv. biodiversity;
   v. climate change and greenhouse gases;
   vi. cultural heritage;
   vii. health and community;
   viii. noise and vibration (Outline Construction Noise Management Plan);
   ix. resources and waste (Outline Site Waste Management Plan);
   x. soils and geology (Outline Materials and Soils Management Plan);
   xi. traffic and transport (Outline Construction Traffic Management Plan); and
   xii. water resources (Outline Surface Water Management Plan).

### Relationship with other developments

4.11.9 A number of airport related developments are currently underway in and around the Main Application Site. These are listed and described in **Chapter 2** Site and Surroundings of this PEIR, along with a brief description of their status and how they relate to the Proposed Development.

## 4.12 Operation

### Passengers and Flights

4.12.1 The airport will be operational throughout the delivery of the construction of the Proposed Development. The passenger numbers currently anticipated at each of the assessment phases are described in **Chapter 5** in Volume 2 of this PEIR. Following completion of construction of the Proposed Development, the airport would continue at the maximum consented passenger capacity of 32 mppa if a cap is applied by the DCO, or within the environmental envelope defined by the environment effects reported in ES and controlled thought the application of the developing regime described in the **Draft Green Controlled Growth Proposals** document provided as part of statutory consultation.

4.12.2 Future operational demand forecasts have been developed into detailed outputs to allow the environmental assessment work to be undertaken, as well as to support capacity planning and highways modelling. Key outputs include:

a. Busy Day timetables for airport capacity planning and October Day Timetables for highways modelling and surface access;

b. annual fleet;

c. 92-Day fleet mix for noise assessment; and

d. assumed world region split for each aircraft type and average range to each region.

4.12.3 The methodology used to generate demand forecasts, assumptions and key output data are discussed in the **Draft Need Case** provided as part of statutory consultation.

### Surface Access Vehicles.

4.12.4 Incorporating the passenger demand forecasts outlined above, detailed traffic modelling has been undertaken to generate operational traffic data used in this assessment. The CBLTM (Central Bedfordshire and Luton) model available for the region was modified to generate a new strategic CBLTM-LTN model for this Proposed Development. The detailed method, assumptions and conclusions of this modelling exercise are summarised in the **Getting to and from the airport – our emerging transport strategy** provided as part of statutory consultation, and will be detailed in the Transport Assessment to be submitted as part of the application for development consent. A breakdown of operational car parking spaces at each phase is also provided in that consultation document.

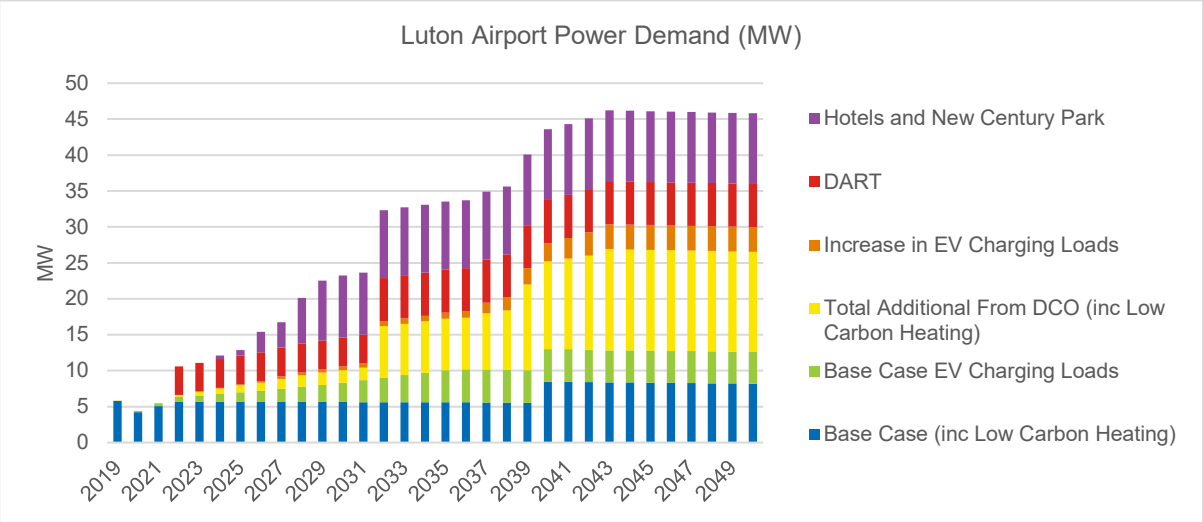
## Energy Demand

4.12.5 The energy strategy for the airport, including the Proposed Development, is currently under development. Current estimates of energy demand have been generated to inform this assessment and are summarised in this section.

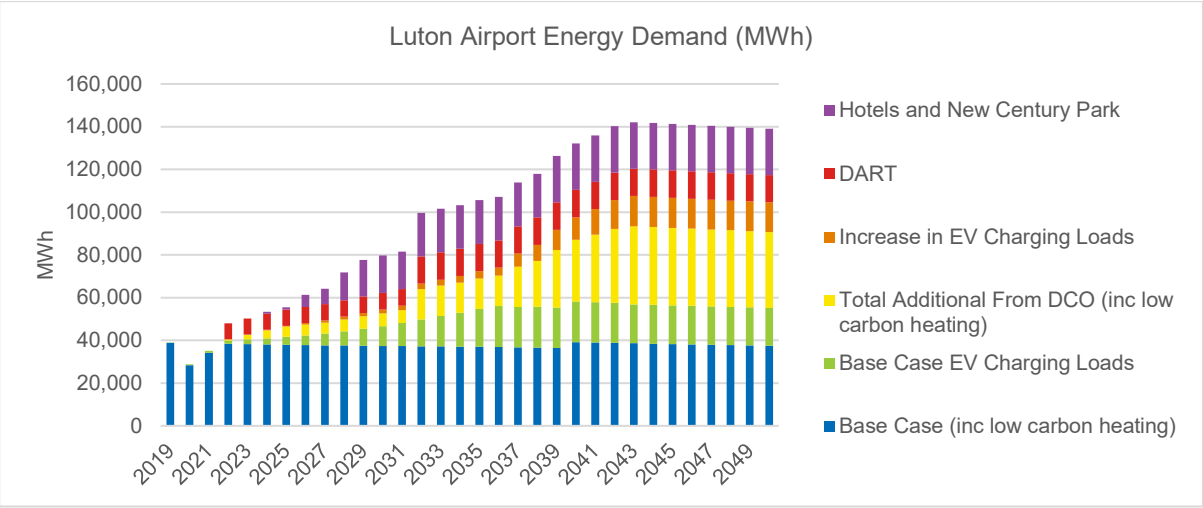
### *Electricity*

4.12.6 The predicted instantaneous power demand and total electrical energy demand for the airport up to 2050 is shown in **Inset 4.2** and **Inset 4.3** respectively.

Inset 4.2: Maximum airport power demand (MW), 2019 to 2050




Inset 4.3: Total airport electrical demand (MWh), 2019 to 2050




### *Natural Gas*

4.12.7 The new terminal and associated buildings will not include connection to the natural gas network as part of the strategy to decarbonise the existing airport in

line with expected government policy. Existing buildings which rely on gas for heating or services will transition to other sources of heat and power as part of asset renewals programme.

4.12.8 The above electrical demand forecasts assume the existing gas boilers are replaced in 2040 and the heating is switched to low carbon heat pumps.

### Water

4.12.9 The drainage strategy for the airport, including the Proposed Development is under development in consultation with the key stakeholders, including statutory undertakers. The Proposed Development includes measures that will allow water demand to be controlled and not increase proportionally with passenger numbers; these include rainwater harvesting, a new on-site WTP, and recycling for suitable uses. The currently anticipated operational water consumption during delivery of the Proposed Development and assumed to continue after final capacity is reached is described in the Drainage Design Statement provided as **Appendix 20.1** in Volume 3 of this PEIR.

### Other operational aspects

4.12.10 Resource consumption and waste generation are discussed in **Chapter 19** of this PEIR. Land use and soil used/lost during construction are described in **Chapter 6** to this PEIR, no operational effects are expected. Biodiversity loss and net gain is discussed in **Chapter 8** to this PEIR, no operational loss is expected and long term management during operation is described in the Draft Landscape and Biodiversity Management Plan provided as **Appendix 8.2** in Volume 3 to this PEIR.

## 4.13 Decommissioning

4.13.1 The assessment of potentially significant effects arising from the decommissioning of the Proposed Development has been scoped out of the EIA. The Planning Inspectorate agreed with this approach in the Scoping Opinion.

4.13.2 It is considered that the airport, once operational, would be a permanently functional airport, and that the site would not be undertaking activities that pose a long-term risk requiring detailed decommissioning plans or assessment. There are no foreseen elements of the airport which would become redundant during the lifespan of the Proposed Development.

4.13.3 Any unforeseen future decommissioning which arises after the consent of the Proposed Development would be subject to appropriate planning and assessment requirements.

## 4.14 Airspace change

4.14.1 The Government is co-sponsoring the Airspace Modernisation programme with the Civil Aviation Authority and has provided some funding to help assist those organisations developing specific airspace change proposals. The overall objectives of the airspace modernisation programme were set out in the

Government's Aviation 2050 Green Paper of December 2018 - *"The overall objective for airspace modernisation is to deliver quicker, quieter and cleaner journeys and more capacity for the benefit of those who use and are affected by UK airspace."*

4.14.2 Given the complex interactions between the airspace requirements of a wide range of users, including airports, responsibility for coordinating the delivery of airspace modernisation has been delegated to ACOG (Airspace Change Organising Group). ACOG is developing a Masterplan for Airspace Change over the South East of England (known as the FASI-S programme), which will set out the interactions between the differing requirements and how these can be resolved. A second draft of this Masterplan is due in the near future and will be assessed by the CAA. Until such time as this Masterplan is approved to proceed to the next stage, all further proposals for airspace change at specific airports have been placed on hold by the CAA. Hence the timescale for any specific changes that would be made to departure routes from the airport is not yet clear.

4.14.3 Before pausing the airspace change proposal in 2020, LLAOL had reached the Option Development stage. The proposal has now been restarted and work has been ongoing on the initial options appraisal and design principle evaluation; subject to approval of the Masterplan it is anticipated that this will be submitted to the CAA in March 2022. It is important to note that changes may be required to flightpaths from the airport to fit in with the overall airspace Masterplan regardless of whether the DCO is granted or not and that **the DCO itself does not directly require changes to flightpaths** over the ground to achieve the increase in runway movements.

4.14.4 Nonetheless, realising the modernisation of the airspace is necessary to enable the growth envisaged across the London airports to be achieved, including the growth envisaged through this Proposed Development as well as at the other airports, including the potential third runway at Heathrow. Given the priority being accorded to airspace change by the Government, it is envisaged that the changes will be delivered in time to facilitate the growth plan for this Proposed Development.

4.14.5 While the required changes to flightpaths are not yet known, National Air Traffic Services (NATS) had originally identified the airport as one of the airports which stands to gain most from a reduction in the population affected by aircraft noise if aircraft are able to climb more freely. In the NATS Feasibility Report into Airspace Modernisation in the south of the UK, published alongside Aviation 2050 in December 2018, NATS projected a potential 27.8% reduction in the size of the area affected by aircraft noise around the airport on a like for like basis.

4.14.6 Given the current progress with the broader airspace modernisation programme, the noise implications of the Proposed Development have been assessed **based on current flightpaths** at this stage. However, there is a reasonable expectation that there will be changes, particularly to aircraft climb profiles over neighbouring settlements and potential for respite routes which will reduce the noise implications below those assessed over time. It is an important principle of the airspace change process that any changes to noise

exposure on the ground are minimised.

4.14.7 **Paragraph 2.2.24** of the EIA Scoping Opinion states that "*The Inspectorate understands the relationship between the Proposed Development and the future air space change process, which may not run in parallel. However, the Inspectorate considers that the ES methodology should be compatible with the methodological approaches outlined in the CAA's CAP 1616 and CAP 1616a documents to ensure consistency and continuity between the two assessment processes. Where the ES methodology is not consistent with the CAA's CAP approach, this should be identified and explained*". A response to this request is provided in **Chapter 5** Approach to the Assessment of this PEIR.

# GLOSSARY AND ABBREVIATIONS

| Term | Definition |
|---|---|
| AAR | Airport Access Road |
| AGL | Aeronautical Ground Lighting |
| AOD | Above Ordnance Datum |
| A-VDGS | Advanced Visual Docking Guidance Systems |
| BOD | Biochemical Oxygen Demand |
| CAA | Civil Aviation Authority |
| CoCP | Code of Construction Practice |
| Code [x] aircraft | International Civil Aviation Organisation aircraft categorisation based on size. |
| CTA | Central Terminal Area |
| Luton DART | Luton Direct Air-Rail Transit |
| DCO | Development Consent Order |
| DOZ | Drop-off Work |
| EASA | European Aviation Safety Agency |
| EIA | Environmental Impact Assessment |
| ERUB | Engine Run-up Bay |
| ES | Environmental Statement |
| FASI-S | Future Airspace Strategy Implementation |
| FEGP | Fixed Electrical Ground Power |
| FTG | Fire Training Ground |
| GEA | Gross External Area |
| GSE | Ground Servicing Equipment |
| ha | Hectare |
| IATA | International Air Transport Association |
| ICAO | International Civil Aviation Organisation |
| IRVR | Instrumented Runway Visual Range System |
| km | Kilometre |
| LBC | Luton Borough Council |
| Luton Rising | A trading name for London Luton Airport Limited |
| the airport | London Luton Airport |
| m | Metre |
| $m^2$ | Metre squared |
| $m^3$ | Metre cubed |
| mppa | Million passenger per annum |
| MSCP | Multi-storey Car Park |

| | |
|---|---|
| NCP | New Century Park |
| $NH_4$-N | Ammoniacal Nitrogen |
| PSZ | Public Safety Work |
| Q1-4 | Quarter 1-4 |
| RET | Rapid Exit Taxiway |
| SMR | Surface Movement Radar |
| TDOZ | Temporary Drop Off Work |
| TSS | Total Suspended Solids |
| UKPN | UK Power Networks |
| VCP | Vehicle Control Point |
| WTP | Water Treatment Plant |