

Masterplan Overview

5



5.0 Masterplan Overview

5.1 Introduction

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| <p>5.1.1 This section describes the physical aspects of the Preferred Masterplan, which has emerged from the design process that was described in Chapter 4 and has reflected earlier non-statutory stages of consultation.</p> | <p>5.1.8 The report describes how the evaluation process took into account a range of considerations to ensure that properly informed and balanced judgements were reached in selecting the Preferred Masterplan. Evaluation criteria comprised Operations and Service, Delivery, Business Case, Community, Planning, Property and Sustainability.</p> |
| <p>5.1.2 The Preferred Masterplan is made up of a series of drawn and written parameters. These parameters set out the general layout, building height envelope, points of access and landscaping/open space features across the site. These are described in more detail in Chapter 6.</p> | <p>5.1.9 The Preferred Masterplan has been developed taking into account the effect of expansion on the wider environment, issues of sustainability, and the crucial topic of climate change. As a result, the Preferred Masterplan minimises the requirement for land as far as is practicable while facilitating the requirements of the ANPS and provides for the implementation of strategies for surface access, energy and water that will help Heathrow meet its strategy for carbon neutral growth.</p> |
| <p>5.1.3 The Preferred Masterplan as illustrated in Figure 5.1.1, is an interpretation of how it could look in its end state when constructed within those parameters.</p> | <p>5.1.10 Careful consideration has been given to minimising likely significant adverse environmental effects. The Preferred Masterplan incorporates mitigation proposals, including the re-provision of Public Open Space, biodiversity and habitat areas lost as a direct result of expansion, as well as other landscape improvement works. A <i>Preliminary Environmental Information Report</i> has been prepared to inform the understanding of the Preferred Masterplan. This information will also help to inform the refinement of the scheme towards submitting our DCO application.</p> |
| <p>5.1.4 To help describe the Project, it has been divided into Zones (A to U), each of which have a different character. These zones are referred to throughout this document and are illustrated in Figure 6.1.1. Chapter 6 of this document describes the Preferred Masterplan by Zone in more detail.</p> | <p>5.1.11 The diagrams on the following section explain the rationale for and key aspects of the Preferred Masterplan.</p> |
| <p>5.1.5 The Preferred Masterplan will be refined as we move closer towards submitting our DCO application, taking into account further feedback from our Airport Expansion Consultation and more detailed design work.</p> | |
| <p>5.1.6 As we describe the Preferred Masterplan, we make reference to options which were set out in Airport Expansion Consultation One.</p> | |
| <p>5.1.7 For further information regarding options that have been considered as part of the scheme development process, including a synopsis of feedback received during Airport Expansion Consultation One and the process and reasoning for selecting the preferred option, please refer to the <i>Updated Scheme Development Report</i>.</p> | |

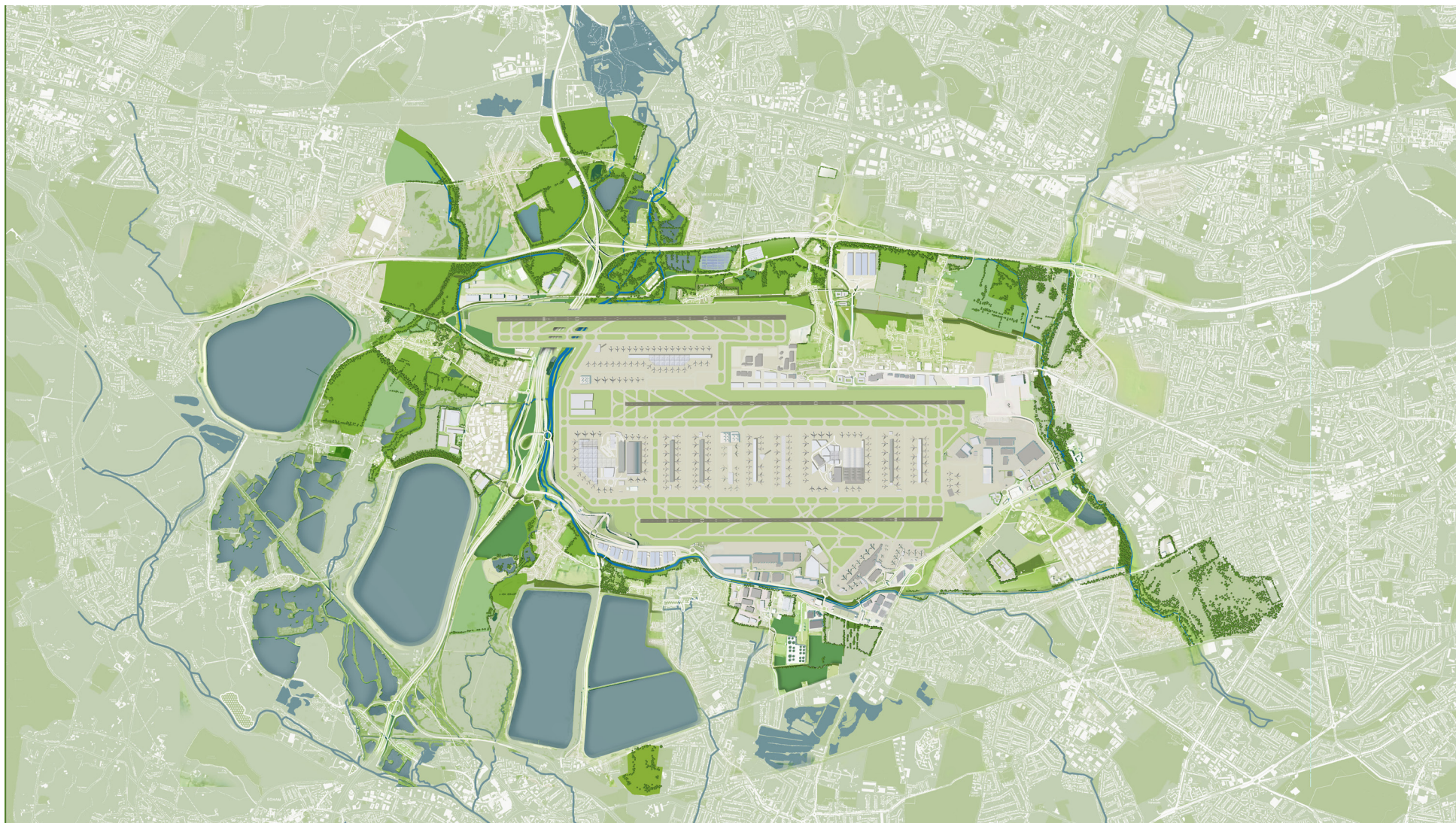


Figure 5.1.1: Illustrative Preferred Masterplan

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5.2 Diagrammatic Explanation of the Preferred Masterplan Layout

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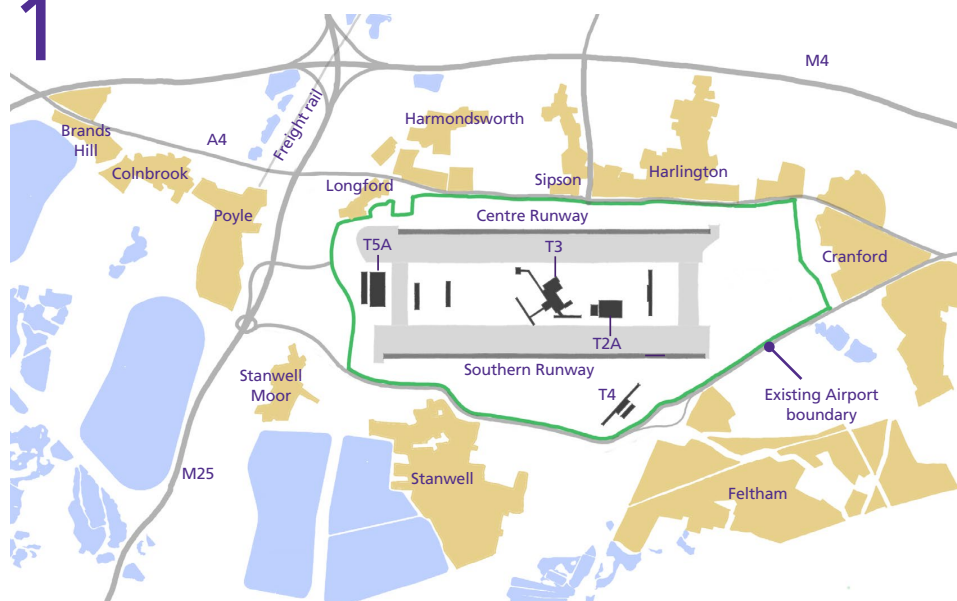


Figure 5.2.1: Existing features and infrastructure

5.2.1 The design of the expanded airport has been influenced by the location of existing features and infrastructure. Figure 5.2.1 shows the existing airport boundary, a selection of the principal buildings and the existing airfield. It also identifies settlements close to the airport, the principal road network and major water bodies.

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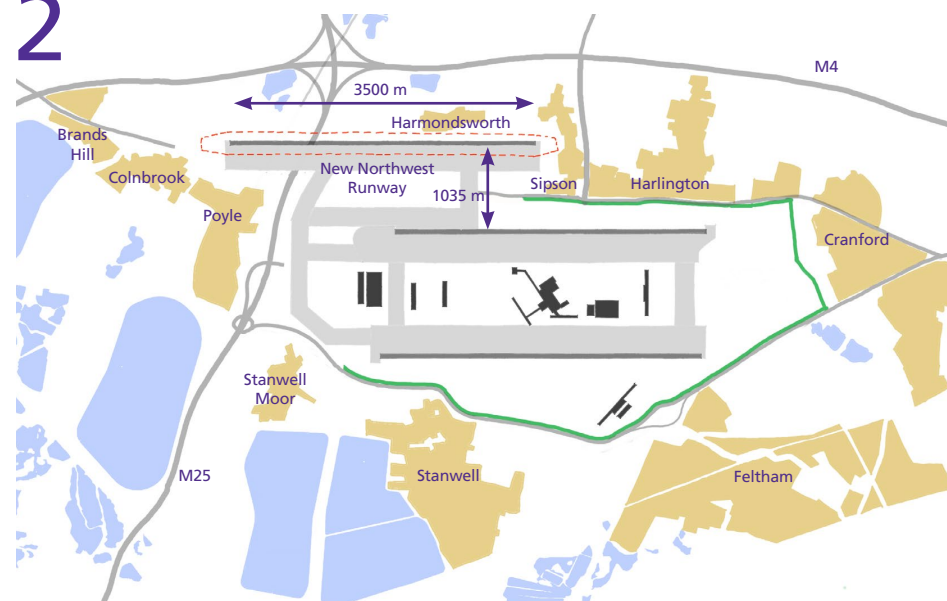


Figure 5.2.2: New runway

5.2.2 The new runway, illustrated in Figure 5.2.2, has been located to the northwest of the existing airport in accordance with the requirements of the ANPS, where the length was also specified. The new runway is at the minimum separation from the existing northern runway to enable independent operations. This separation along with the length of the new runway allows for predictable respite. The location of the new runway has regard for, and aims to minimise as far as practicable, the noise and air quality effects on existing settlements. New taxiway links are provided between the new runway and existing taxiway network in order to facilitate efficient movement of aircraft to and from the aircraft parking stands.

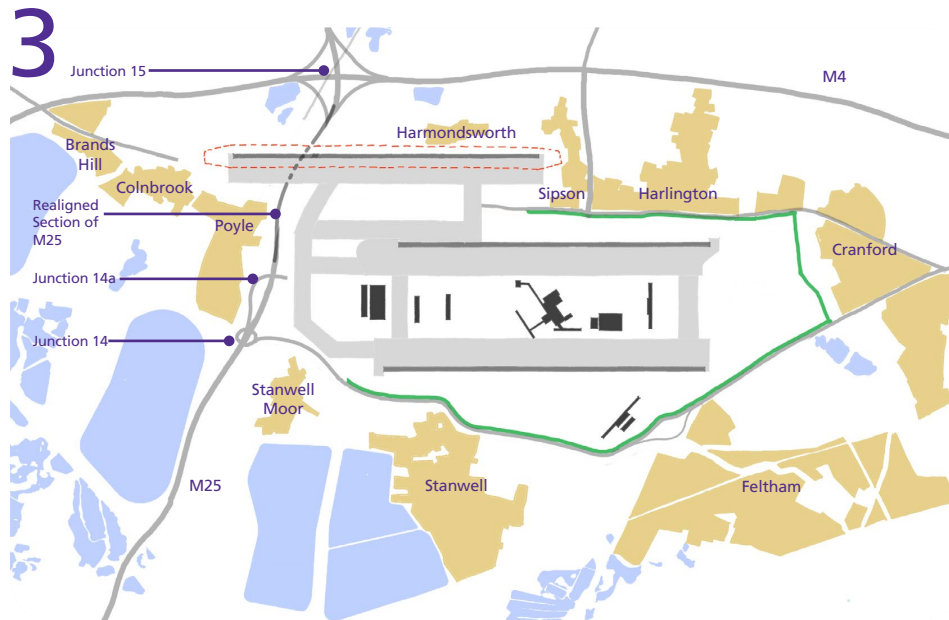


Figure 5.2.3: M25 realignment

- 5.2.3 The M25 motorway, shown in Figure 5.2.3, is realigned horizontally and vertically, between Junctions 14a and 15, to allow the new runway to be constructed in the optimum location. In its new alignment, the M25 will pass below the new runway and taxiways. Works will be carried out to Junctions 14 and 14a of the M25 to accommodate future traffic requirements.

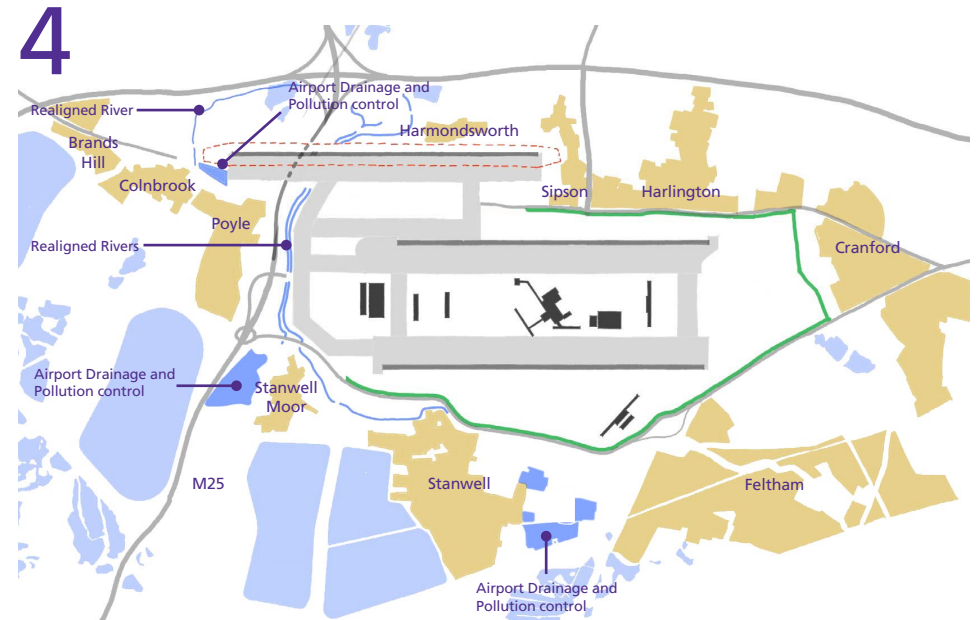


Figure 5.2.4: River diversions and airport drainage

- 5.2.4 In order to accommodate the new runway and taxiway links, existing rivers are diverted so that most of their route remains above ground in order to maintain water quality. New surface water storage and treatment areas are provided to manage run-off from new hard surface areas associated with the expanded airport. These storage and treatment facilities will be designed in conjunction with environmental measures to guard against pollutants entering natural water courses. Figure 5.2.4 shows the principal surface water storage and treatment areas and the realigned river corridors.

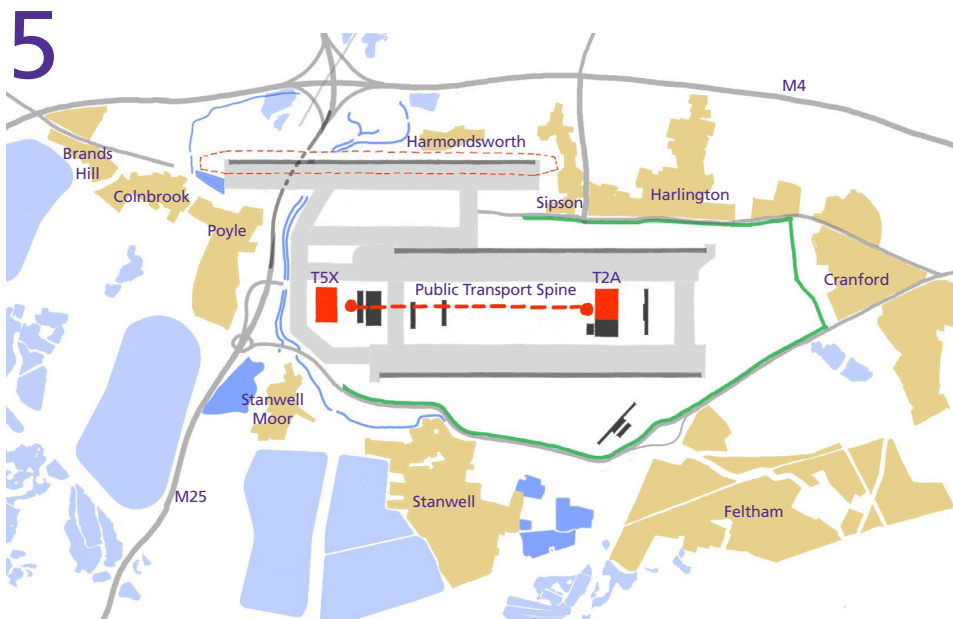


Figure 5.2.5: New terminal facilities

- 5.2.5 New passenger terminal facilities, shown in Figure 5.2.5, are located close to the existing T2A and T5A in order to maximise use of the two main public transport interchanges, each of which will be enhanced to accommodate increased services and passenger numbers. T3 will be replaced in later stages of the Project.

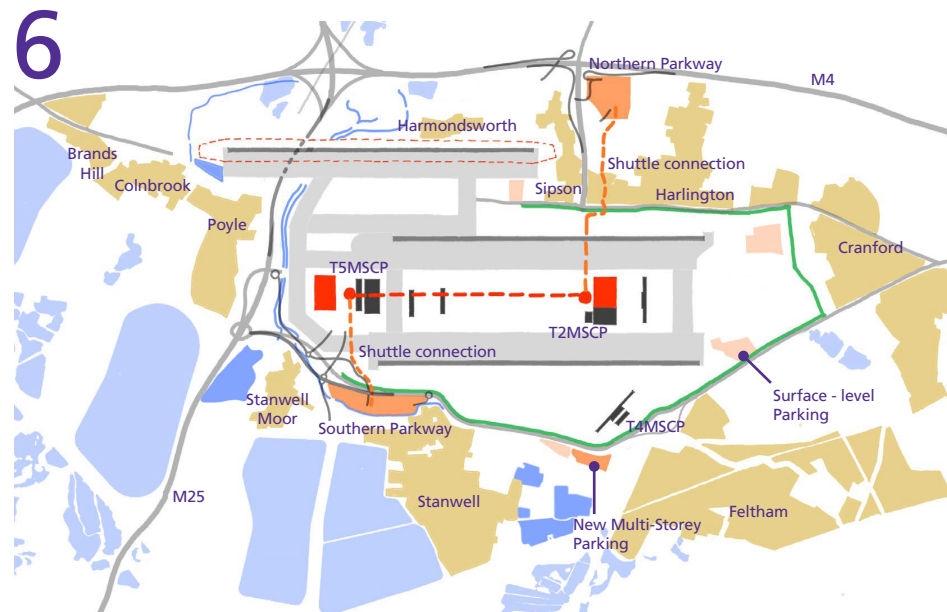


Figure 5.2.6: New parking areas

- 5.2.6 Existing surface car parking will be moved to, and new parking facilities provided at, two principal multi-storey car parking locations. These locations have been selected to be close to major junctions on the M4 and M25 motorways, and facilitate good transit links between these 'Parkways' and each passenger terminal campus. The Northern Parkway is principally accessed by cars from Junction 4 of the M4, and passengers are connected to the Eastern Campus (T2A and T3). The Southern Parkway is principally accessed by cars from Junction 14a of the M25, and passengers are connected to the Western Campus (T5A and T5X). The two new shuttle connections between the parkways and the airport, are shown in Figure 5.2.6, and will also offer excellent access for local communities to the airport facilities and public transport stations.

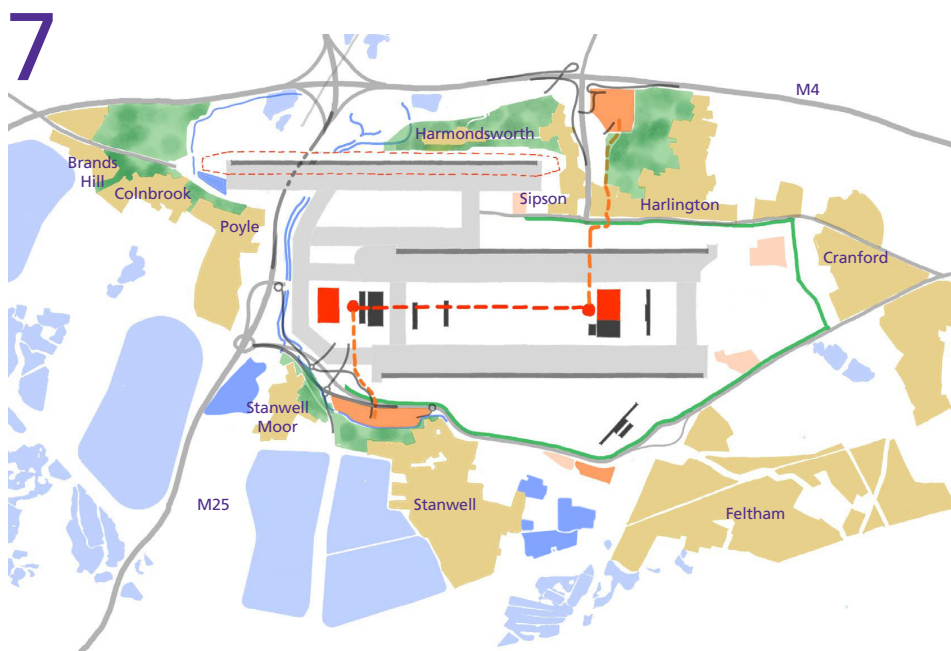


Figure 5.2.7: New landscaping and ecology

- 5.2.7 A comprehensive approach to landscape improvements includes taking opportunities to provide enhanced screening between the expanded airport and neighbouring communities. The Landscaping Strategy is explained further in Chapter 4 of this document. A diagrammatic illustration of this approach is shown in Figure 5.2.7.

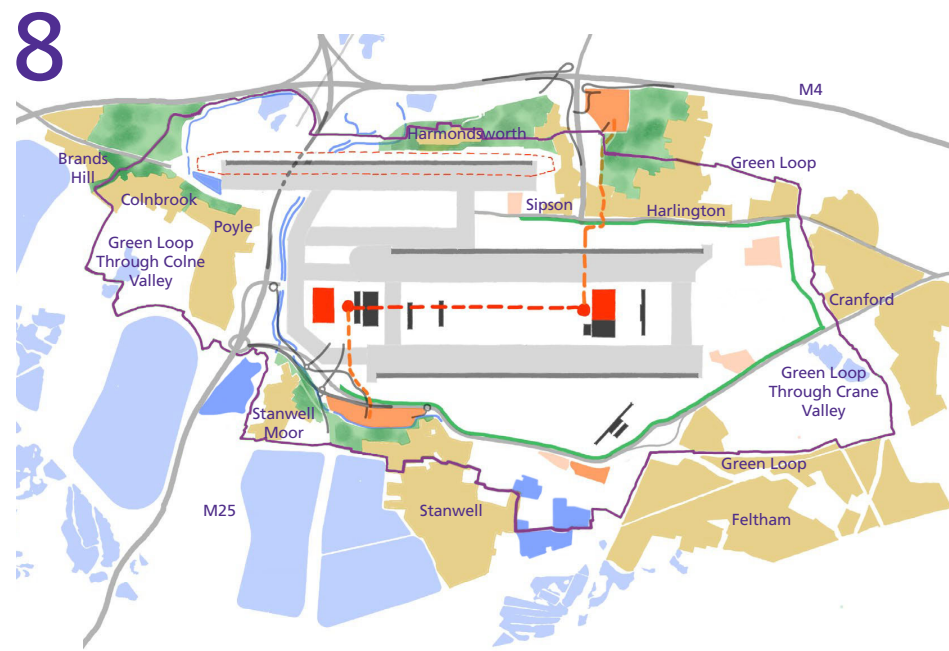


Figure 5.2.8: Green Loop

- 5.2.8 A Green Loop, illustrated in Figure 5.2.8, encircles the airport, providing connectivity between settlements, public rights of way and landscaped areas around the airport. Specifically, routes are provided between the Colne and Crane Valleys, both to the north and south of the expanded airport.

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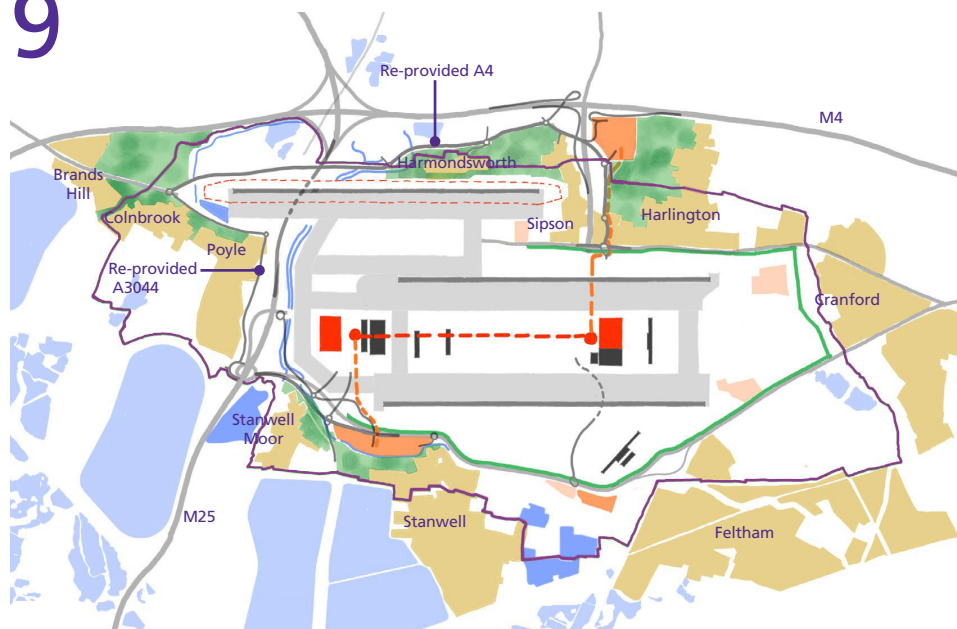


Figure 5.2.9: Local roads diversions

5.2.9 Where the A4 and A3044 arterial roads have been severed by the new airfield, new routes will be provided. This will generate good connections for vehicles, whilst minimising effects on existing communities. These routes are illustrated in Figure 5.2.9. Additional infrastructure to accommodate active travel modes will be incorporated into these new routes, as well as enhancements to improve cycling and walking routes elsewhere in the vicinity of the airport.

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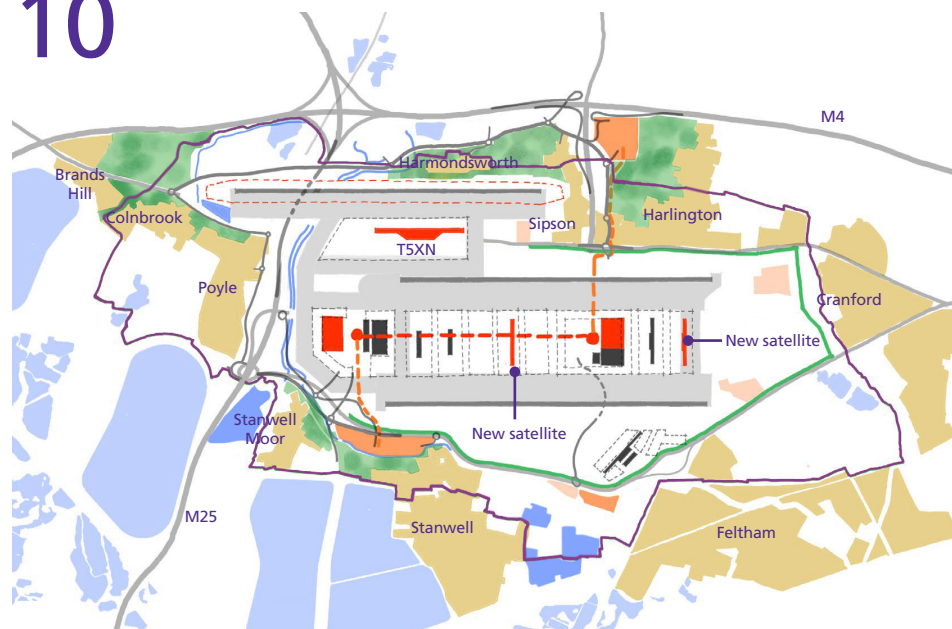


Figure 5.2.10: New airfield aprons

5.2.10 New aprons, providing aircraft stands, are arranged to maximise the use of land between the existing runways, locate aircraft parking to maximise efficient routes between passenger terminals and runways, and to allow for changing requirements throughout the lifetime of the infrastructure. Figure 5.2.10 shows the principal apron provision and indicates the locations of proposed new satellites.

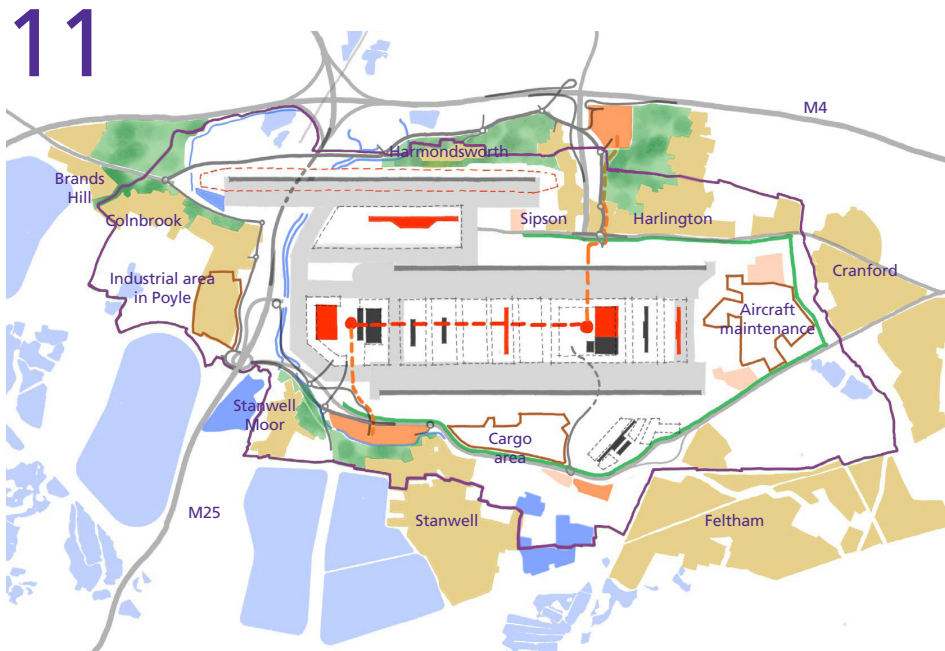


Figure 5.2.11: Cargo and aircraft maintenance areas

5.2.11 Existing areas of Airport Supporting Development (ASD) are to be consolidated, ensuring that these areas of land are efficiently planned to maximise utilisation. Such areas include aircraft maintenance and cargo operations, the principal areas of which are identified in Figure 5.2.11.

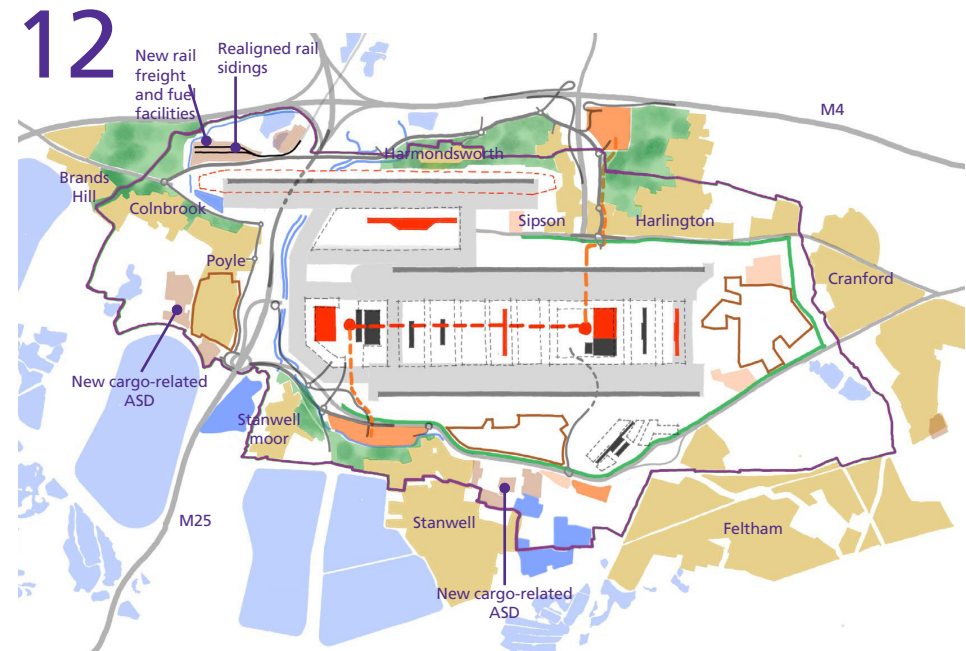


Figure 5.2.12: Railhead realignment and cargo

5.2.12 New areas of cargo-related ASD, illustrated in Figure 5.2.12, are located to further consolidate existing uses and support growth in passenger and cargo throughput. The existing Colnbrook branch line ('railhead'), which is displaced by the new runway, is realigned to ensure that aviation fuel supply is maintained to the expanded airport, and so that construction materials can be delivered to the airport using rail transport. Adjacent development areas provide space for buildings and hard standing to ensure effective use of the rail infrastructure during the construction period and in the operational use of the airport.

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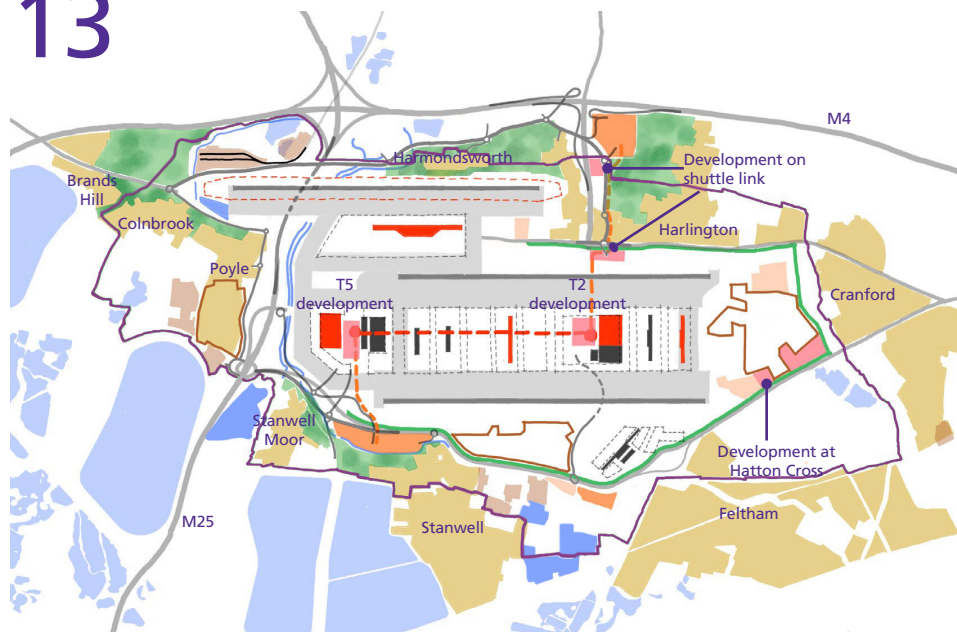


Figure 5.2.13: New hotels and offices

5.2.13 New office space and hotels are focussed at the main public transport nodes to maximise public transport mode share. Hotels are also located where access can be provided via the transit link to the Northern Parkway. Similar provision adjacent to the Southern Parkway has been omitted in favour of green space provision, in response to feedback from community engagement. Figure 5.2.13 shows the locations identified for office space and hotels.

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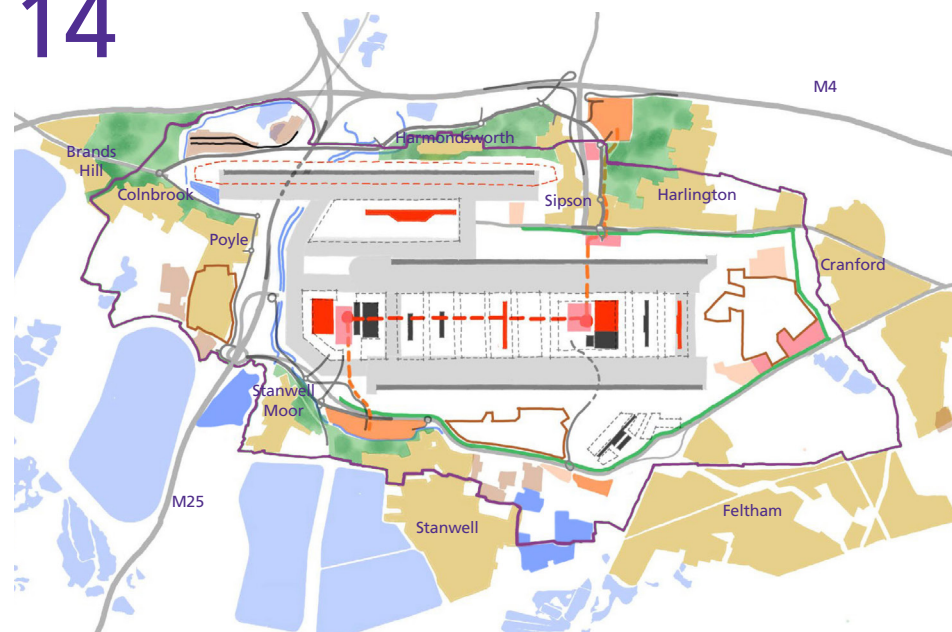


Figure 5.2.14: Protecting and enhancing communities

5.2.14 To complement the landscape screening between the expanded airport and its neighbouring communities, broader landscape improvement works are also proposed, as well as other measures to meet the needs of individual communities (see figure 5.2.14). These potential works have been the subject of community engagement workshops and are described in the *Heathrow Expansion* and *Your Area* documents.

5.3 Overview of the Preferred Masterplan

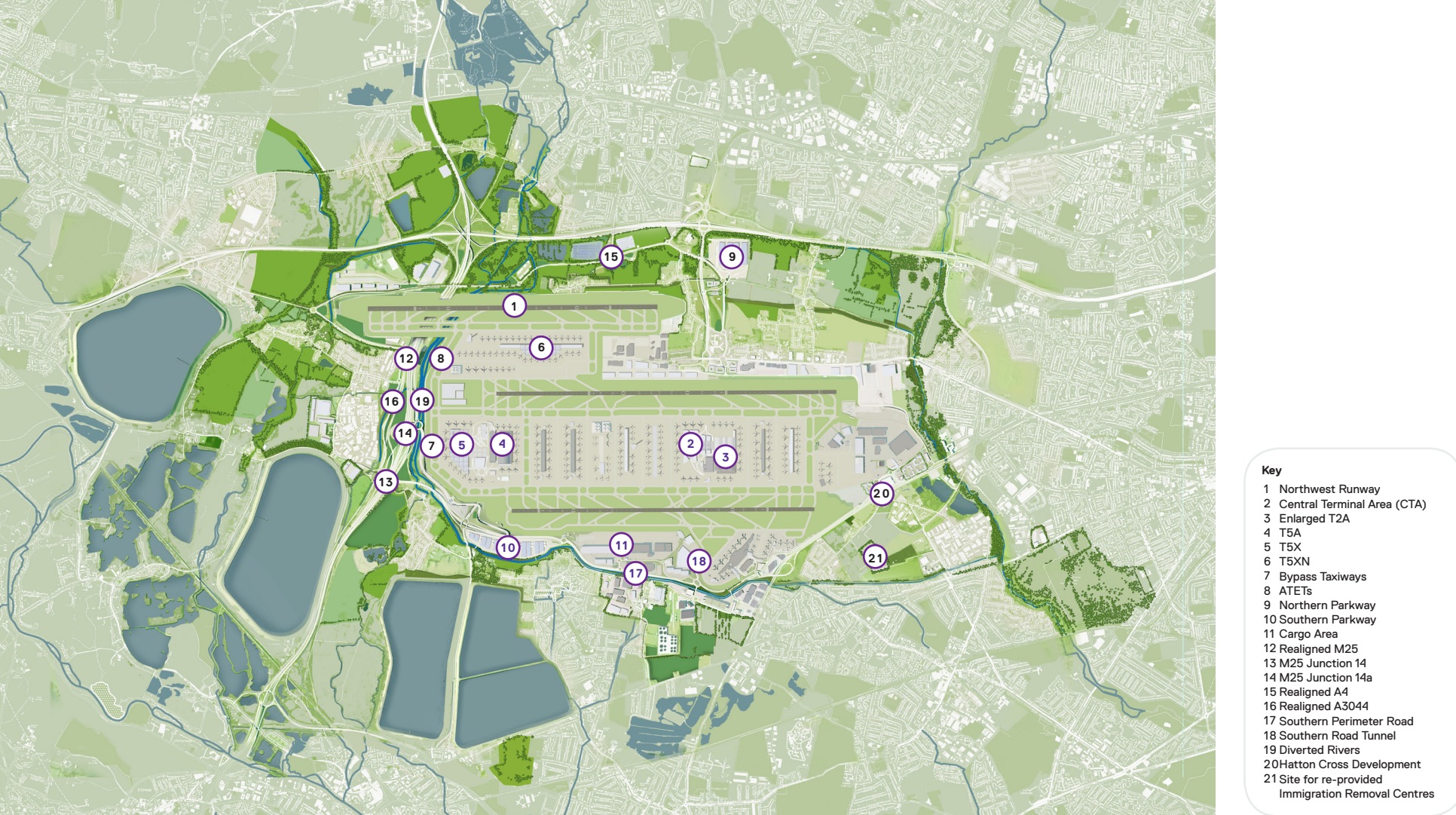


Figure 5.3.1: Overview of the illustrative Preferred Masterplan

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- 5.3.1 Expanding Heathrow is more than building a new runway. To operate a three-runway airport, we also need to build new passenger facilities, infrastructure and ASD relocate or replace some of what is currently located within the footprint of the Project.
- 5.3.2 The Preferred Masterplan has been prepared to accommodate up to around 756,000 flights and 142 million passengers per annum (mppa) and a cargo capacity of approximately 3m tonnes per year. To accommodate this growth the airport operational footprint needs to expand from the current circa 1,200 hectares to approximately 1,800 hectares in the future. It is proposed to put in place a framework for Environmentally Managed Growth. Further details of this approach are set out in the *Environmentally Managed Growth* document.

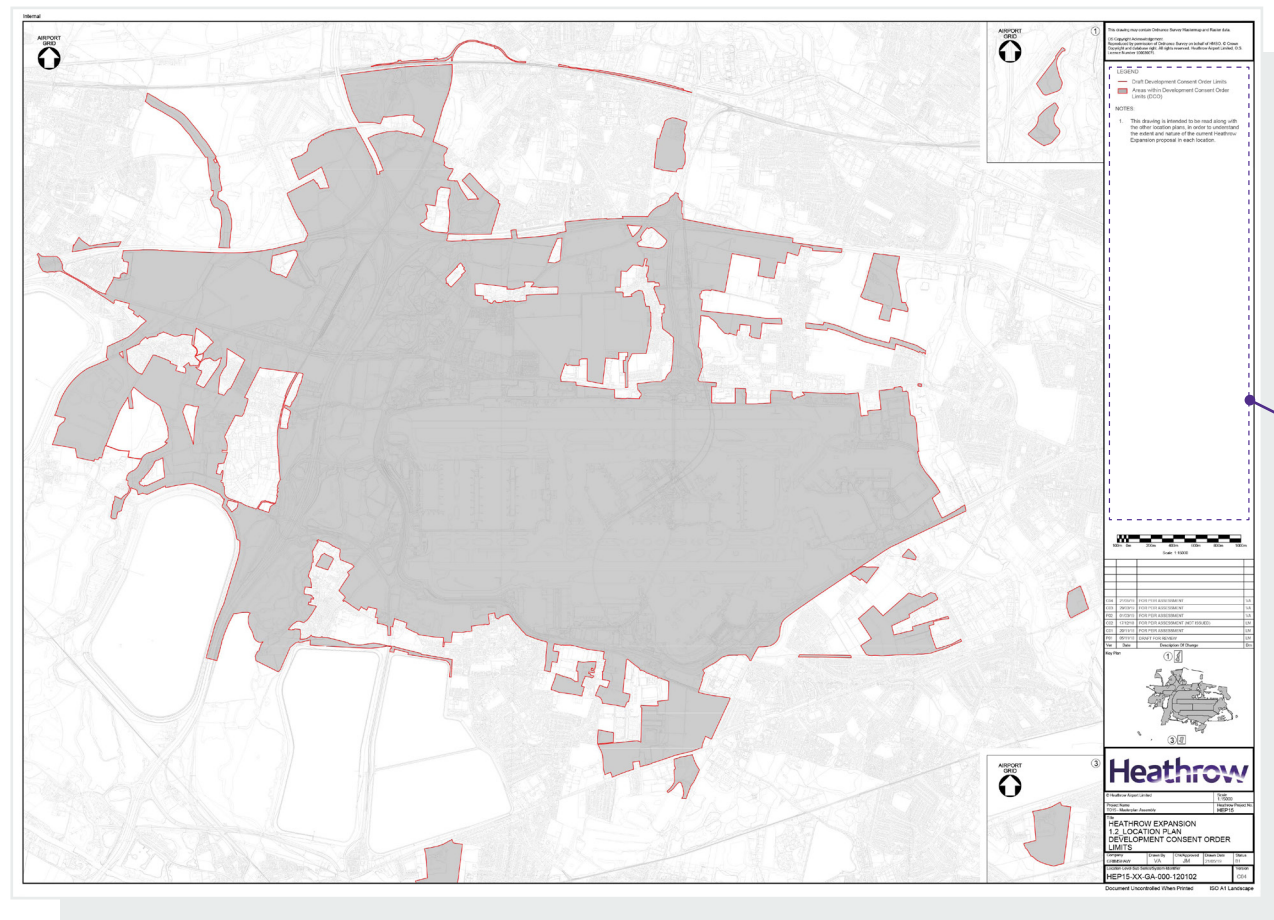
Measure	Existing (2 Runway)	Proposed (3 Runway)
Air Transport Movements (ATMs)	480,000 ATMs	Approximately 756,000 ATMs
Million Passengers Per Annum (mppa)	Approximately 80 mppa	Approximately 142 mppa
Cargo	1.69M tonnes per year	3M tonnes per year

Table 5.3.1: Approximate design capacities

- 5.3.3 We will seek growth to be phased, with the potential for up to 25,000 additional flights per annum before the opening of the new runway, and then growth at a higher level after the new runway becomes operational. We will introduce a range of measures to deliver respite for residents. Please refer to *The Future Runway Operations* document.
- 5.3.4 Consistent with the requirements of the ANPS, our new Northwest Runway will be 3,500m in length and has been carefully positioned to balance operational requirements with noise and physical impacts.
- 5.3.5 Part of the new terminal capacity will be focused in the Central Terminal Area (CTA), with approximately half of the additional passengers accommodated in an enlarged Terminal 2 campus, which will replace Terminal 1 (currently housing the T2 baggage facility) and Terminal 3, which is expected to be replaced in the later phases of the Project.
- 5.3.6 The Terminal 5 Area will also be expanded with additional terminal capacity to the west of the existing terminal, called T5X. This new building will contain the key passenger processing facilities of check-in, security, immigration, and baggage reclaim, for aircraft stands around the building, and to serve a new satellite terminal (T5XN) located to the south of the new runway, connected via a new passenger transit system.
- 5.3.7 New taxiways are essential to connect the new runway to the existing airport and expanded airport facilities. The Preferred Masterplan shows Around The End Taxiways (ATETs) at the western side of the enlarged airport and western bypass taxiways to the west of Terminal 5. These will allow aircraft to taxi to different runways without disrupting flight operations and will help to facilitate predictable respite for the local communities.
- 5.3.8 Supporting and related facilities for the airport, such as aircraft maintenance, fuel storage, car parking and ground support equipment, are also being expanded, as required. Where possible, the Preferred Masterplan provides for these to be consolidated and relocated to better serve new and existing areas of the airport.
- 5.3.9 As part of this consolidation strategy, and to support the Surface Access Proposals, two Parkways are proposed to the north and south of the airport in order to provide much of the airport's future car parking. The Northern Parkway will be capable of accommodating up to 24,000 cars, will have access from the M4 Motorway and will be connected directly to the CTA by a shuttle system.
- 5.3.10 The Southern Parkway will provide up to 22,000 car parking spaces and will be served by an upgraded road connection to Junction 14a of the M25. It will be directly connected to the Terminal 5 campus by a shuttle system.
- 5.3.11 Each Parkway will be constructed and brought into operation in a phased manner, as required as the airport is expanded over time.

- 5.3.12 The Preferred Masterplan allows for the expansion and consolidation of the cargo functions, which are focused on the southern side of the airport. It is proposed to consolidate the existing cargo buildings so they can be more intensively used and provide additional accommodation around the IAG World Cargo Centre.
- 5.3.13 Due to the location of the new Northwest Runway, it is necessary to reposition the M25 by up to 150m to the west of its existing alignment over a length of 2km.
- 5.3.14 The realigned motorway has been designed to provide capacity for future traffic levels. It will be widened and lowered by between 4m and 4.5m below its existing level in order to pass through a tunnel beneath the new runway. Associated parallel 'collector distributor' roads and improvements to junctions 14 and 14a will handle altered traffic flows.
- 5.3.15 The A4 has been diverted to the north of Harmondsworth and east of Sipson in order to avoid the new Northwest Runway and will provide replacement east-west connectivity for vehicles. It will provide priority measures for buses (as required by detailed traffic modelling) and cyclists.
- 5.3.16 In order to fit the expanded airport to the east of the M25, the A3044 has been moved to the west of the motorway and will include priority measures for buses (as required by detailed traffic modelling) and cyclists.
- 5.3.17 Improvements are also proposed to other local roads which provide access to and around the airport. The Preferred Masterplan shows a widened Southern Perimeter Road and the creation of a new southern road tunnel which will provide much better access and egress from the south to the Central Terminal Area for public transport and other vehicles.
- 5.3.18 The Project will divert local rivers mainly around the new western boundary of the expanded airport, including a river corridor that passes beneath the new runway. The Preferred Masterplan also shows new areas for the storage of flood water and the treatment of contaminated surface water run-off and waste water.
- 5.3.19 New areas for landscaping, protecting habitats and wildlife corridors, are an integral part of the Preferred Masterplan. It is proposed that land would be re-provided as Public Open Space (POS) to compensate for the loss of existing POS resulting from the DCO project. At this stage, it is envisaged that the amount of re-provided POS would exceed the amount of POS lost as a result of the DCO project. Further land has also been identified for wildlife habitats. A 'Green Loop' forms part of our proposals, linking communities, landscaped areas and biodiversity around the expanded airport, providing excellent active travel links for walking and cycling.
- 5.3.20 We have focused proposed land to be used for new hotels and offices close to public transport in the terminal zones, Hatton Cross and adjacent to the Northern Parkway with approximately 7,500 hotel bedrooms. These will replace some of those lost by expansion and respond to future demand.
- 5.3.21 New industrial, freight forwarding and flight catering facilities have been located close to established industrial areas near to the airport.
- 5.3.22 Our plans will also re-provide essential public facilities and infrastructure that will be lost due to expansion, including:
- Immigration Removal Centres – these have been relocated to the southeast of the airport;
 - Powerlines and fuel pipelines – these will be diverted and/or placed underground to the west of the airport; and,
 - Schools and community facilities – the Preferred Masterplan identifies potential sites for enhancement and replacement.

5.4 Draft DCO Limits Boundary

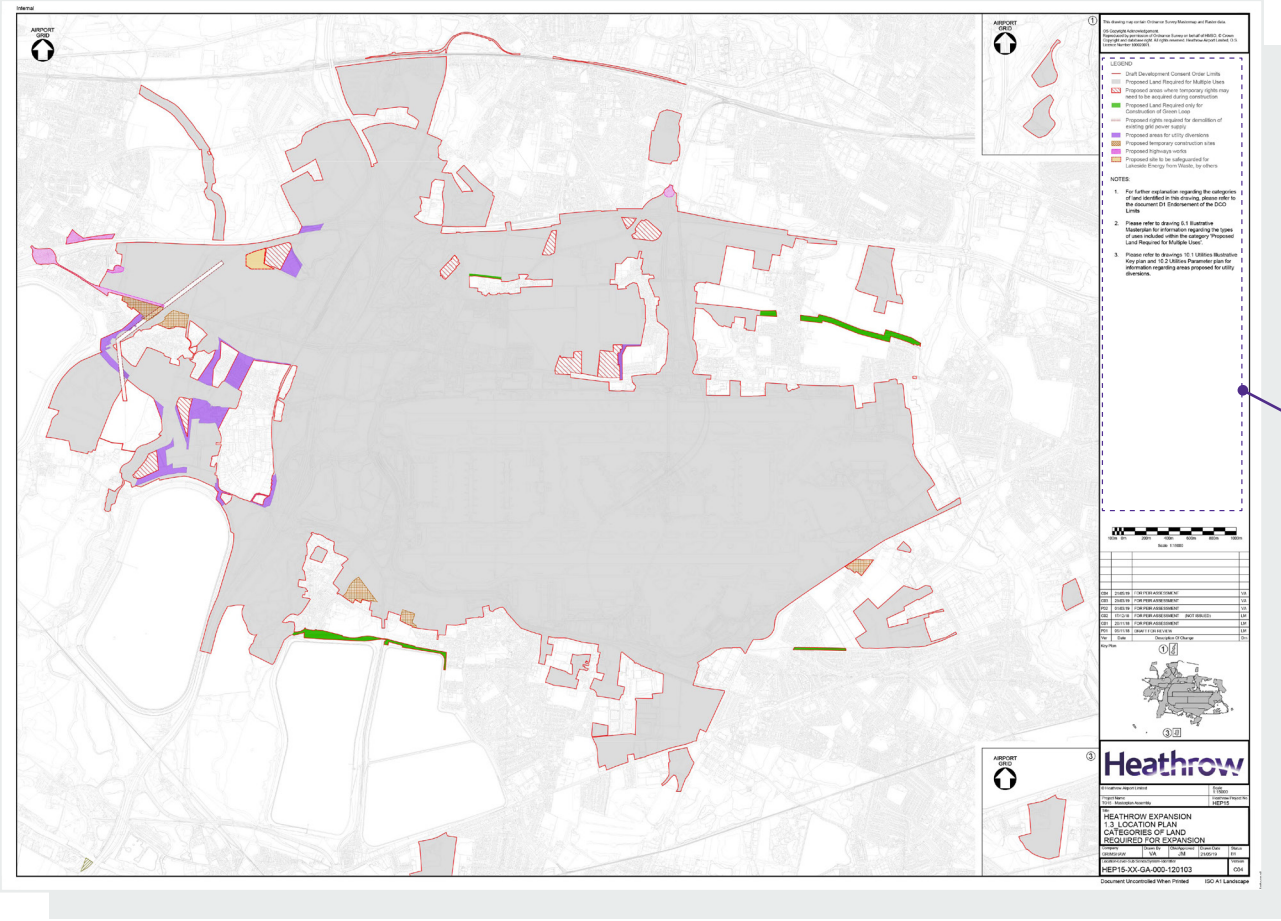


5.4.1

Figure 5.4.1 comprises the '1.2 Location Plan: Draft Development Consent Order Limits', which shows the overall boundary for the Project and has formed the basis of the assessment in the *Preliminary Environmental Information Report* (PEIR). This includes the land where we intend to construct buildings and infrastructure and much of the extensive landscape mitigation areas. It also includes land where we potentially require property and other rights for landscape mitigation areas.

Figure 5.4.1: PEIR 1.2 Location Plan: Draft Development Consent Order Limits

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5.4.2 Further definition of the categories of land required for expansion are illustrated in Figure 5.4.2.

LEGEND

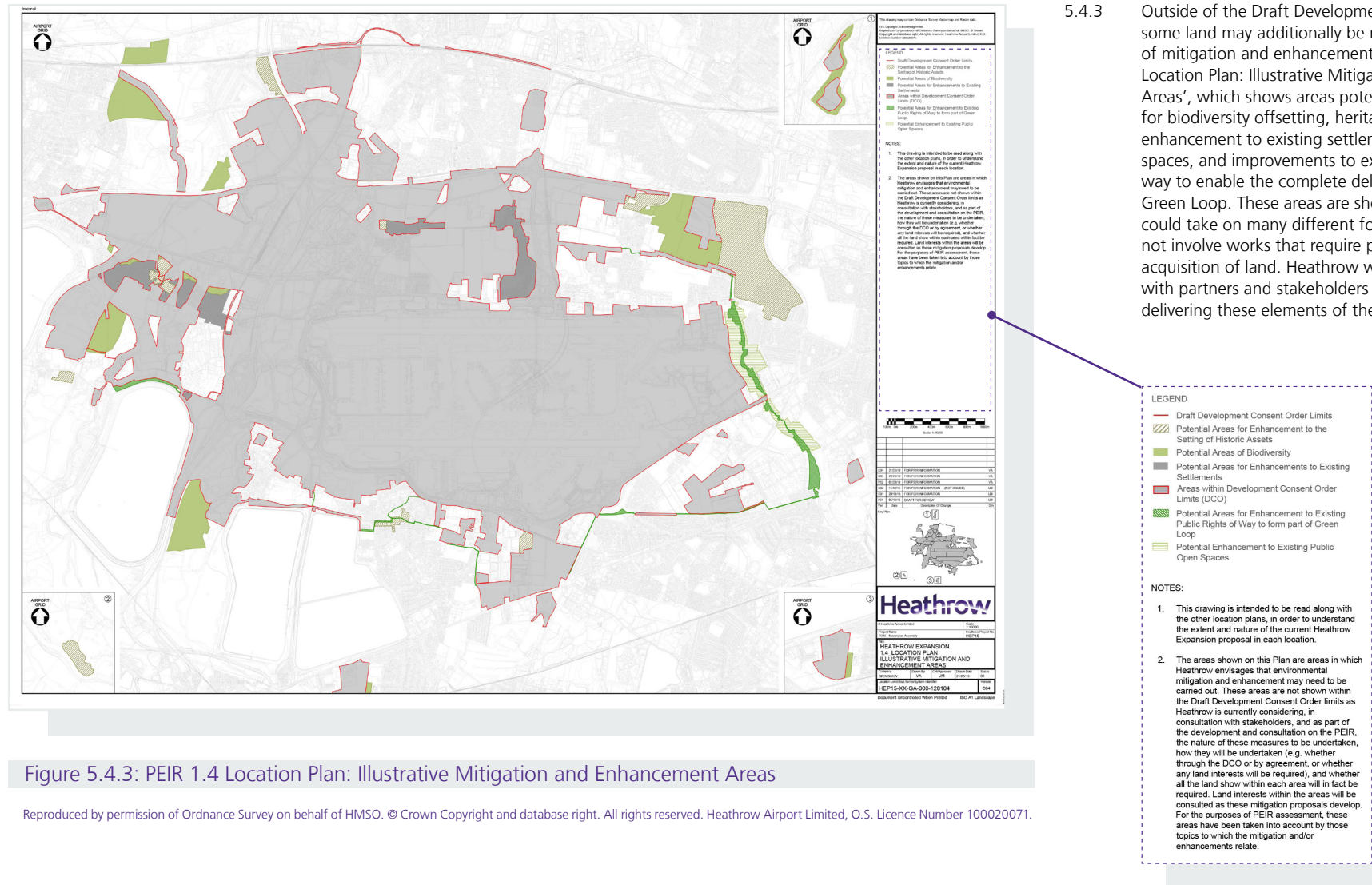
- Draft Development Consent Order Limits
- Proposed Land Required for Multiple Uses
- Proposed areas where temporary rights may need to be acquired during construction
- Proposed Land Required only for Construction of Green Loop
- Proposed rights required for demolition of existing grid power supply
- Proposed areas for utility diversions
- Proposed temporary construction sites
- Proposed highways works
- Proposed site to be safeguarded for Lakeside Energy from Waste, by others

NOTES:

- For further explanation regarding the categories of land identified in this drawing, please refer to the document D1 Endorsement of the DCO Limits
- Please refer to drawing 8.1 Illustrative Masterplan for information regarding the types of uses included within the category 'Proposed Land Required for Multiple Uses'.
- Please refer to drawings 10.1 Utilities Illustrative Key plan and 10.2 Utilities Parameter plan for information regarding areas proposed for utility diversions.

Figure 5.4.2: PEIR 1.3 Location Plan: Categories of Land Required for Expansion

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5.4.3

Outside of the Draft Development Consent Order Limits, some land may additionally be required for the purposes of mitigation and enhancement. Figure 5.4.3 is the '1.4 Location Plan: Illustrative Mitigation and Enhancement Areas', which shows areas potentially required for biodiversity offsetting, heritage enhancement, enhancement to existing settlements and public open spaces, and improvements to existing public rights of way to enable the complete delivery of the proposed Green Loop. These areas are shown illustratively as they could take on many different forms and may or may not involve works that require planning permission or acquisition of land. Heathrow will continue to consult with partners and stakeholders on the approach to delivering these elements of the Project.

Figure 5.4.3: PEIR 1.4 Location Plan: Illustrative Mitigation and Enhancement Areas

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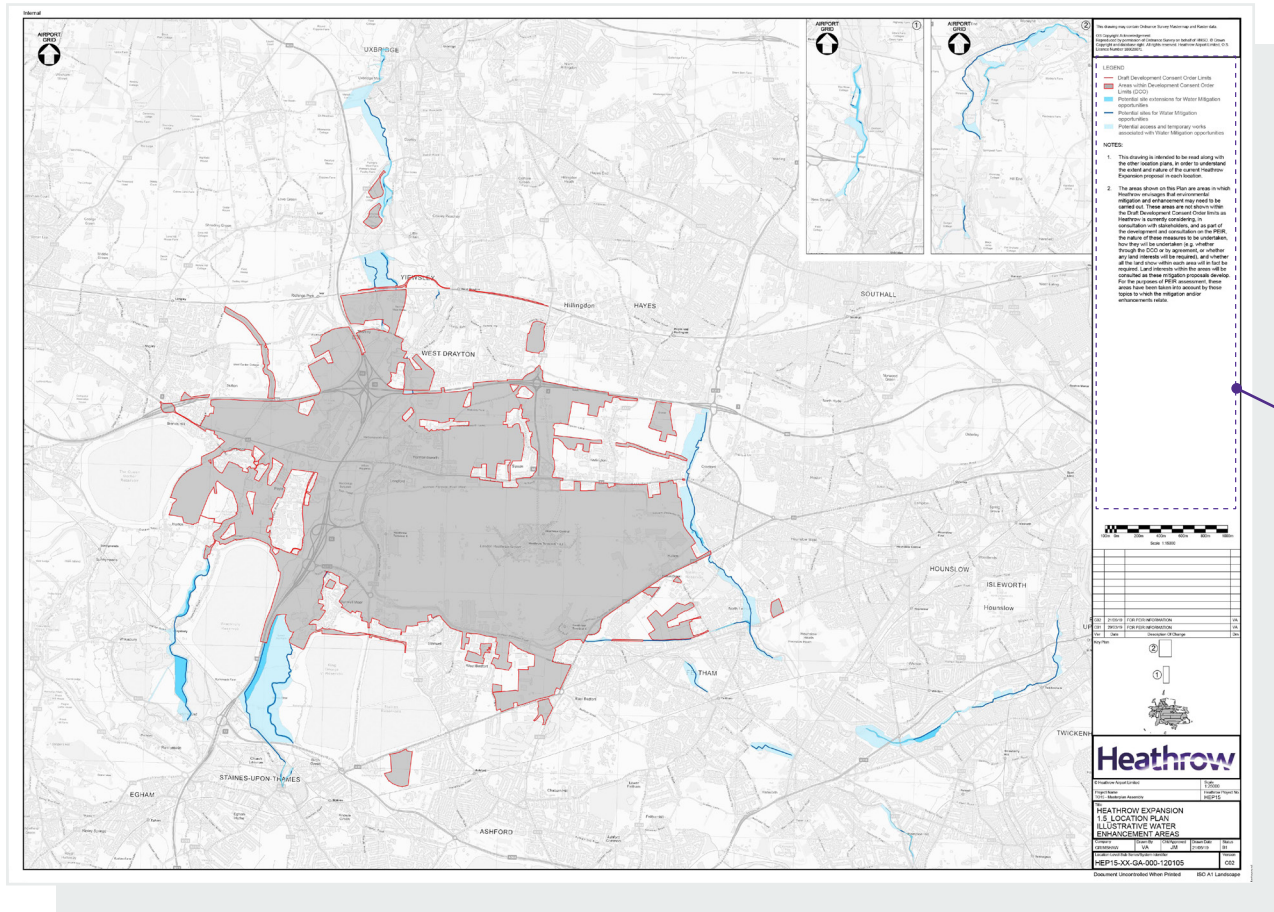


Figure 5.4.4: PEIR 1.5 Location Plan: Illustrative Water Enhancement Areas

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- 5.4.4 Figure 5.4.4 shows more distant areas which may be required for the purposes of mitigation and enhancement to water features, such as rivers. These areas have been put forward by external stakeholders through consultation in 2018 and are shown illustratively and may evolve as the scheme is developed in more detail.
- 5.4.5 The plans that make up the Draft DCO Limits boundary do not include all early preparation works that may be required off-site prior to construction, or other minor off-site works where separate powers may be sought as part of the DCO. These could, for instance, include works to utilities corridors along highways, minor off-site highway works for activities such as cycle improvements, or minor improvements to local transport interchanges required during the construction period.

LEGEND

- Draft Development Consent Order Limits
- Areas within Development Consent Order Limits (DCO)
- Potential site extensions for Water Mitigation opportunities
- Potential sites for Water Mitigation opportunities
- Potential access and temporary works associated with Water Mitigation opportunities

NOTES:

1. This drawing is intended to be read along with the other location plans, in order to understand the extent and nature of the current Heathrow Expansion proposal in each location.
2. The areas shown on this Plan are areas in which Heathrow envisages that environmental mitigation and enhancement may need to be carried out. These areas are not shown within the Draft Development Consent Order limits as Heathrow is currently considering, in consultation with stakeholders, and as part of the development and consultation on the PEIR, the nature of these measures to be undertaken, how they will be undertaken (e.g. whether through the DCO or by agreement, or whether any land interests will be required), and whether all the land shown within each area will in fact be required. Land interests within the areas will be consulted as these mitigation proposals develop. For the purposes of PEIR assessment, these areas have been taken into account by those topics to which the mitigation and/or enhancements relate.

5.5 Areas Directly Affected

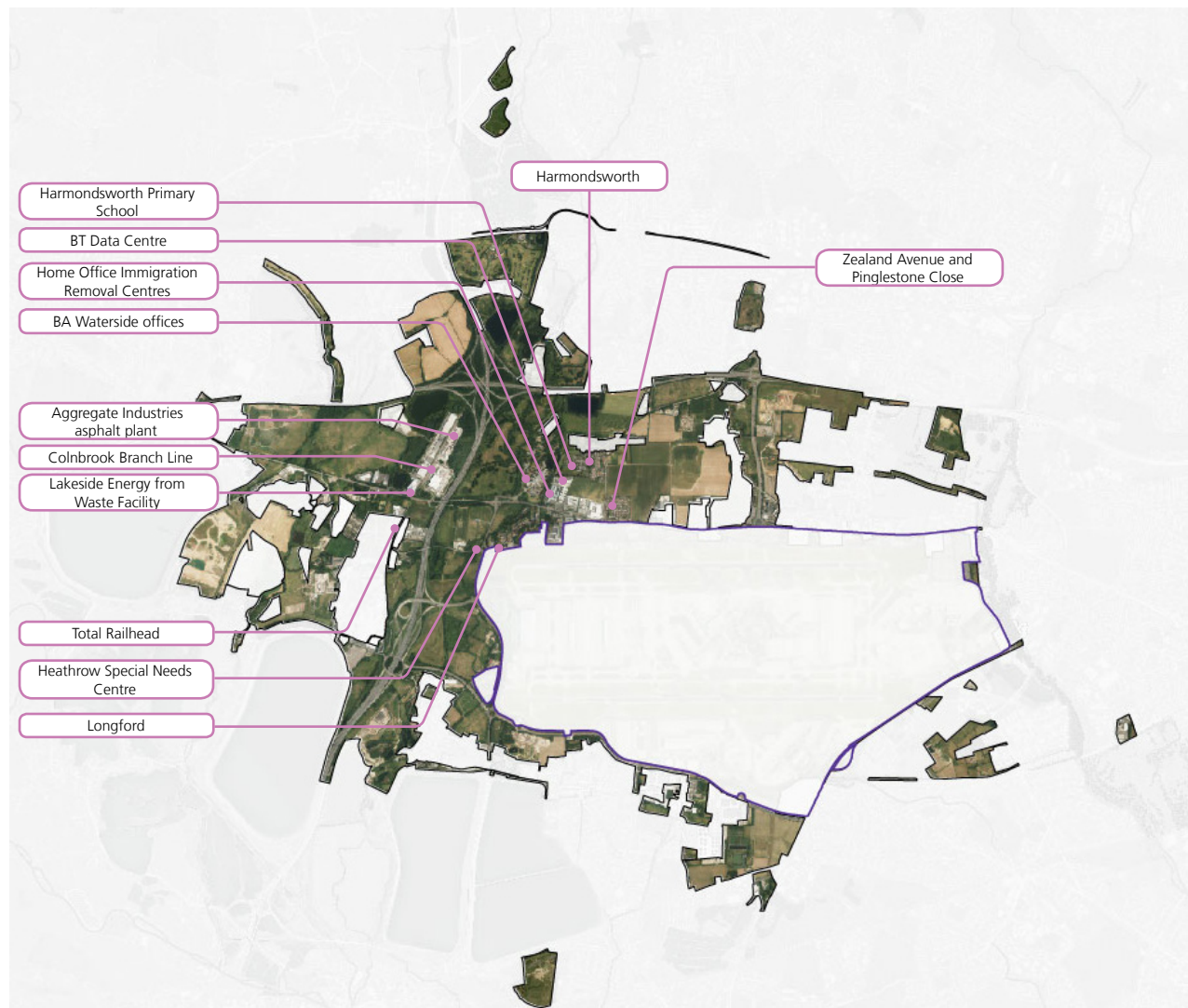
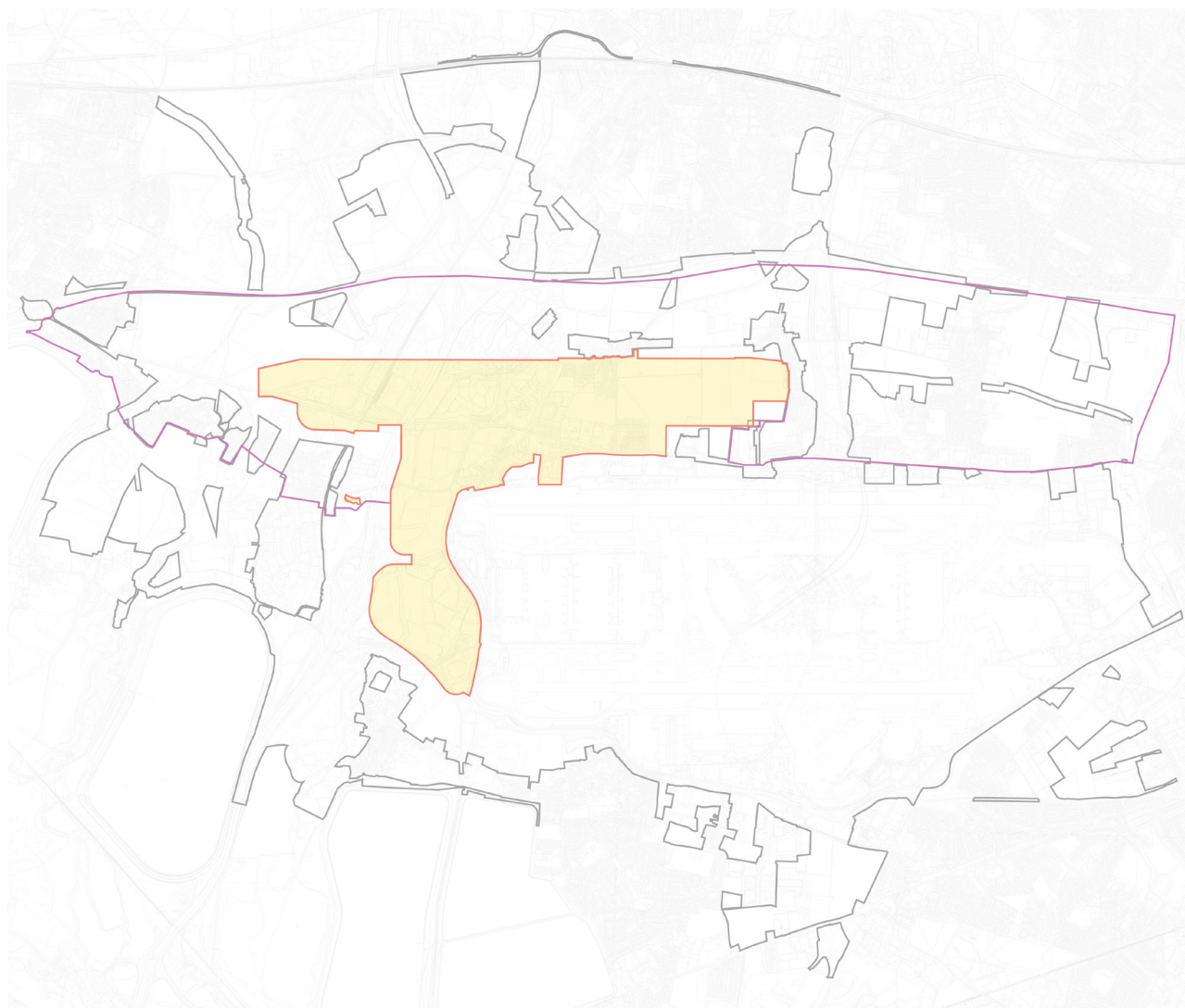


Figure 5.5.1: Areas directly affected

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- 5.5.1 The footprint of the Project outside of the existing airport boundary is shown in Figure 5.5.1.
- 5.5.2 The Preferred Masterplan will displace or remove some existing buildings and infrastructure in use today. Many existing homes, business properties, utilities, airport-related facilities, open space, recreation and community facilities, mainly located to the north and northwest of the existing airport boundary where the new runway is situated, will need to be displaced. Figure 5.5.1 highlights some of the key features, in the area affected by the Project, that will be displaced.
- 5.5.3 We have sought to minimise the extent of building and infrastructure loss as a result of expansion. The Airports Commission recommended that Heathrow's Northwest Runway proposals were selected, in the knowledge that an estimated 783 homes would be displaced. This recommendation has been further endorsed by the designation of the ANPS.



5.5.4 The Preferred Masterplan will result in the loss of an estimated 761 homes. *Our Property Policies Information Paper* explains how we propose to assist those affected within both the Compulsory Purchase Zone (CPZ) and the Wider Property Offer Zone (WPOZ). As shown in Figure 5.5.2.

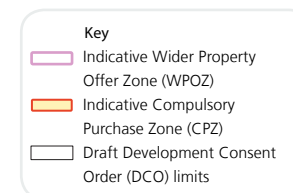


Figure 5.5.2: CPZ and WPOZ Boundaries

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5.5.5 Since consulting at Airport Expansion Consultation One, we have carefully considered the footprint of the proposals relative to the indicative boundary in the ANPS. Figure 5.5.3 illustrates the additional land required for expansion beyond the ANPS Annex A Boundary.

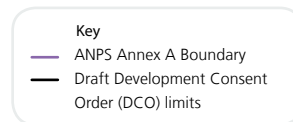


Figure 5.5.3: Additional area outside of ANPS Annex A Boundary

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5.5.6 In order to reduce impacts and costs, we have sought to intensify the use of areas within the existing airport, only including essential Airport Supporting Development around the edge of the expanded airport, and we have carefully reviewed the need for including certain facilities within our proposals. As a result, we have been able to exclude land previously identified at Airport Expansion Consultation One as potentially being required; for example, some sites along Bath Road have now been excluded from our proposals, and portions of demand for facilities (such as offices and hotels) have been excluded on the basis that this demand can be met by others in the vicinity of the airport (see Figure 5.5.4).

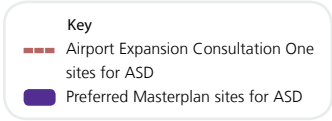


Figure 5.5.4: Proposed Airport Supporting Development (ASD) plan

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