A5. H7 EFFICIENT AIRPORT PROGRAMME APPENDIX

This appendix covers:

- Our Efficient Airport Programme Delivery Objective.
- Objectives and benefits for the investments contained within the H7 Efficient Airport Programme:
    - Compass Centre Exit
    - Passenger Process Automation
    - Baggage Automation
    - Airfield Automation
    - Terminal Capacity Optimisation
    - Service Initiatives
- Providing further detail around each of our H7 Efficient Airport Programme investments

Our proposed H7 Delivery Objective for Efficient Airport

Efficient Airport Delivery Objective
Heathrow will invest £315m (2018p) in H7 to improve resilience, reduce the total cost of operation, maintain service standards and provide targeted service improvements to consumers improving the predictability and reliability of their journeys with specific focus on those that are most vulnerable. Simplification & digitisation of baggage, aircraft & passenger processes will enable greater insight & improved performance of operational functions. This investment will deliver significant benefit to airline operating costs, which Heathrow does not directly benefit from. This investment will also contribute to delivering the opex efficiency overlay applied to the H7 operating costs. This includes the following sub-objectives delivered through sub-projects: • Compass Centre Exit £44m – Transition APOC, data centres, critical surveillance equipment and operational support teams into new fit for purpose locations without disrupting airport operations, delivering operating cost savings through the elimination of the Compass Centre lease cost by 2024. This contributes to the OBR measures of value for money of overall Journey • Passenger Process Automation £50m – Renew, replace and introduce new automation across the passenger journey to meet growing consumer expectations for predictable and reliable journeys. This will also support our airline customers to achieve operating cost savings and support airline customer propositions, ensuring we remain competitive against other airports. Scope includes T4 Self Boarding Gates, T3 Self Service, T4 CUSS Kiosks / Automated Check-in, Automated gate announcements (T2, T3 and T4), onboarding of airline automation requests and implementation of biometrics/ PAX ID across passenger journey. This contributes to

the OBR measures of value for money of overall journey, overall satisfaction, customer effort (ease) and airport that meets my needs

- Baggage Optimisation £43m – Develop and implement automation of a range of baggage handling processes across Heathrow to meet growing consumer expectations for predictable and reliable journeys, and to support our airline customers to achieve operating cost savings and support airline customer propositions. This contributes to the OBR measures of value for money of overall journey, baggage misconnect rate and timely delivery of departures baggage

- Airfield Optimisation £39m – Drive airport efficiency through the implementation of new technology, integration of data and new business processes. The scope includes AI capable CCTV on stands, which can track and time stamp critical turnaround activity, further sharing and integration of telematics, integration of airfield systems and replacement of current stand planning platforms. This will meet growing consumer expectations for predictable and reliable journeys and support our airline customers to achieve operating cost savings and support airline customer propositions. This contributes to the OBR measures of departures punctuality, value for money of overall journey, airport arrivals management and runway operational resilience.

- Terminal Capacity Optimisation £33m – Provide three additional remote stands on GA20, delivering additional efficiency in the western campus through enabling more inter-terminal connections and a more efficient towing operation. This contributes to the following OBR measures; wayfinding, overall satisfaction, customer effort (ease), airport that meets my needs, and departures flight punctuality.

- Service Initiatives £106m – Deliver improved wait times at the Border, improved facilities and service for Passengers Requiring Support, improved seating and charging options for passengers and utilising digital wayfinding, ensuring their journeys are more predictable, reliable, comfortable and providing a more welcoming and accessible airport where passengers feel cared for. We have only prioritised the improvements most valued by consumers (see Consumer Insights chapter). This contributes to the following OBR measures; cleanliness, wayfinding, overall satisfaction, customer effort (ease), enjoy my time at the airport, airport that meets my needs, helpfulness/attitude of airport staff, immigration queue times and passengers with reduced mobility – overall satisfaction..

Objectives and benefits for the investments contained within the H7 Efficient Airport Programme

A5.1 Compass Centre Exit

The objective of Compass Centre Exit is to ensure an efficient and cost-effective transition out of Compass Centre due to the lease expiring and the building being sold to a new owner, where the intention is to demolish.

The main objectives are:

- Transitioning APOC (The Airport Control Centre) into interim resilience facilities ahead of implementation of longer-term solution to establish how to consolidate the APOC operation to an appropriate future facility and to develop a target operating model to be implemented in a phased approach through iterations of this project.

- Transitioning the existing data centres out of Compass Centre and take the opportunity to modernise our data centres.

- Developing new agile workplaces that integrate all Heathrow teams into shared, collaborative office spaces within the terminals.

The benefits are:

- A new operating model to create a new future model for APOC.

- The creation of modern data centres with a view to reducing the total cost of ownership, and increasing reliability, availability and resilience.

- The creation of new flexible working spaces that embrace the new agile working model that has emerged through 2020/21.

- A reduction in fixed operating costs of between [✂] annually, contributing to achieving the opex efficiency overlay applied to the H7 operating costs.

A5.2 Passenger Process Automation

Passenger Process Automation seeks to meet the growing expectations of passengers that they will have a predictable and reliable airport journey, and to achieve airport wide operational efficiencies that deliver greater value to consumers. Capital will be invested to renew, replace or introduce new automation along the passenger journey.

The main objectives are:

- Unlocking capacity, delivering an affordable airport where the end-to-end journey is personal, simple and reliable.

- Become an industry leading airport in automation and passenger identification.

- Asset replacement across the airport to give a consistent offering to airlines.

- Addressing the risk that Heathrow falls behind competitor airports in its automation offering (other airports have improved offering via investment during the pandemic).

- Meeting growing passenger expectations of service automation, such as the use of smartphone apps.

- Revenue generation for airlines through common use payment.

- Improved efficiency – making use of assets and passenger processes which allow for better resource utilisation and operating cost savings for airlines.

- Improve demand planning capability by delivery of a reliable and predictable journey.

- Deliver reduced total cost of operating at Heathrow, supporting airline community regrowth.

The benefits are:

- Improved passenger experience, delivering on consumer expectations of a predictable and reliable journey.

- Improved resource utilisation resulting in operating cost savings for airlines.
- Increased capacity and improved punctuality.
- Revenue generation for airlines.
- Compliance with control authority requirements.

A5.3 Baggage Optimisation

Baggage Optimisation seeks to ensure that passengers have a more predictable and reliable airport experience, knowing that their bag is safe and secure, and will travel with them.

The main objectives are:

- Investigate and trialling automation of baggage handling processes across Heathrow.
- Raise awareness of business drivers (e.g., cost reduction, capacity) and develop a clear robust business case for investment in automation.

The benefits are:

- Improved health and safety, and reduced risk of manual handling injuries.
- Reduced operating costs.
- Improved capability from existing building footprint.
- Supporting reaching our baggage misconnect target.

A5.4 Airfield Optimisation

Airfield Automation seeks to drive airport efficiency in safety, cost and sustainability through the implementation of data, process, automation and optimisation of infrastructure and services. This will help to ensure passengers have a more predictable and reliable airport journey.

The main objective is to:

- Improve multiple dimensions of airfield and airport efficiency through new insights into the operation:
    - Detection, monitoring and measurement of safety issues to drive education & remediation.
    - Flow and turnaround analysis to optimise performance and resilience.
    - Improved critical asset utilization to build capacity headroom.
    - Measure asset utilization to allow rationalisation.

The benefits are:

- Punctuality improvements

- Driving efficiency for airport stakeholders
- Enhancing safety
- Reduced airport emissions through adherence to Ground Operating Procedures
- Reduced aircraft emissions via less airborne holding due to capacity constraints
- Improvement in stand blueprint adherence and efficient accommodation/allocation/siting for ancillary and support services.

A5.5 Western Campus Efficiency and Connectivity

The main objectives are:

- Increasing stand capacity, which is a limiting factor of Terminal 5 capacity.
- Enabling more intra-terminal connections, decreasing operating costs and improving experience for transferring passengers (through avoiding a bussed connection).
- Allowing airlines to co-locate with Joint Venture Partners.

The benefits are:

- Better transfer experience and shorter minimum connection times for passengers.
- Improved operational resilience.
- More airline Joint Venture Partners could be co-located.

A5.6 Service Initiatives

The main objectives are:

- Fixing the key prioritised service gaps (as identified in our Consumer Insights chapter) between consumer expectations and the actual Heathrow passenger experience reality, meaning we will better meet more passengers needs as passenger demand returns post-Covid.
- Compliance to CAA's Special Assistance (PRM) regulations.
- Relieving known pain and congestion points in the Special Assistance user journey ahead of returning to 2019 levels of passenger demand.
- Improvement to Heathrow's wider Passenger Requiring Support product offering, aligned to Accessibility Standards and targeting key current service gaps for Heathrow's least satisfied passenger segment.
- Investment in queue measurement and flow systems for check-in, security and immigration to make passenger journeys more predictable and reliable, and to ensure efficient collection of data in line with H7 OBR framework.
- Improvement of the immigration experience, ensuring that more passengers are able to benefit from the use of e-gates through the deployment of more accessible gates

- Investment in technology and infrastructure at the Border to support Border Force in achieving reduced wait times at the Border.

- Meeting customer expectations around seating and closing our performance gap versus other airports in terms of the variety of seating and charging options that are available.

- Providing on-demand digital customer service products, so that consumers can get help through their digital devices when and wherever they need it, ensuring we keep up with changing consumer expectations and developments in this space at other airports.

The benefits are:

- Targeted passenger experience improvements, delivering more consistent service across all passenger segments, with prioritised improvements based on consumer engagement and willingness to pay research.

- Meeting CAA required compliance and recommendations for Special Assistance Service users (PRS).

- Meeting OBR and consumer requirements for enhanced passenger queueing/flow monitoring, so that passenger journeys become more predictable and reliable.

- Improved efficiency in Special Assistance Service (PRS) process through the introduction of a new software system.

- Supporting Border Force to improve Immigration waiting times and tackle current areas of dissatisfaction with the Heathrow experience.

- Meeting growing consumer expectations around the ability to get instant help and support through their personal electronic devices.

Providing further detail around each of our H7 Efficient Airport Programme investments

A5.7 Note that further detail around the operating cost impacts of our H7 Efficient Airport investments is included in the Operating Expenditure chapter as part of this submission.

A5.8 Below we provide a table summary of the investments within the Efficient Airport Programme, including their current stage in the Heathrow Gateway Lifecycle.

Table 1: Efficient airport investments and their current gateway maturity

Efficient Airport Programme - 18 prices	2022	2023	2024	2025	2026	H7	Gateway	
Compass Centre Exit	23.3	20.9	0.0	0.0	0.0	44.3	G0	
Passenger Process Automation	2.5	4.8	4.8	18.7	18.7	49.6		
B7649 SSBD Improvement Payment	0.0	0.8	0.8	0.0	0.0	1.6	G5	
B7649 PAX ID	0.0	2.6	2.6	0.0	0.0	5.2	G5	
B6649 T4 Self Boarding Gates (Full Roll Out)	0.0	1.3	1.3	0.0	0.0	2.7	G5	
B7649 T3 & T4 Self Service Group	2.5	0.0	0.0	0.0	0.0	2.5	G5	
Automation - Next Generation	0.0	0.0	0.0	18.7	18.7	37.5	Pre G0	
Baggage Optimisation	0.5	4.2	5.2	12.7	20.6	43.1		
B6365.08 Baggage Western Campus Optimisation	0.0	2.8	0.0	0.0	0.0	2.8	G5	
B6318 Baggage Automation	0.5	1.4	5.2	12.7	20.6	40.3		
1. Automation build products	0.0	0.2	1.4	1.9	8.4	11.9	Pre G0	
2. Autonomous dollies and tugs	0.0	0.1	0.5	2.3	4.7	7.6	G5	
3. Automation Infrastructure for in-system optimisation	0.0	0.1	0.5	1.9	2.8	5.2	Pre G0	
4. Manual handling aids	0.0	0.1	1.9	4.7	4.7	11.3	Pre G0	
5. Auto slow down product for bagage halls	0.5	0.9	0.9	1.9	0.0	4.2	Pre G0	
Airfield Optimisation	0.9	3.3	7.5	10.0	17.3	39.1		
Airfield Camera / Sensor Installation	0.3	1.4	1.9	1.6	0.0	5.2	Pre G0	
Stand Efficiency Blueprint	0.2	0.5	0.9	0.9	2.6	5.2	Pre G0	
TMS Stand Planning integration	0.0	0.5	0.9	1.4	0.0	2.8	Pre G0	
(Stand Entry Guidance) SEG Integration	0.1	0.2	0.3	0.0	0.9	1.5	Pre G0	
Airbridge automation enhancements	0.1	0.2	0.0	0.0	3.7	4.0	Pre G0	
Airfield systems integration / optimsation / efficiency	0.1	0.2	1.4	2.8	4.9	9.4	Pre G0	
ATM efficiency	0.0	0.0	0.9	1.9	1.9	4.7	Pre G0	
Optimised service and facilties provision	0.0	0.1	0.2	0.5	1.9	2.6	Pre G0	
Data integration and liberation	0.1	0.2	0.9	0.9	0.9	3.1	Pre G0	
Airfield Automation exploration	0.1	0.1	0.0	0.0	0.5	0.7	Pre G0	
Terminal Refurbishment						0.0		
B6401 Western Campus Connectivity & Efficiency	0.0	0.0	0.0	14.1	18.7	32.8		
Service Initiatives	6.4	17.1	19.1	36.4	27.0	106.0		
B6643.03 Taxi Expert System	2.7	0.4	0.0	0.0	0.0	3.1	G5	
B7677 Flow and Monitoring (incl. Security, Check-in, Immigration)	0.0	3.6	5.0	14.4	5.0	27.9	G1 - G5	Project with multiple tranches
PRS Improvments, incl. BC6650 T2 PRS Host Area Expansion	1.9	10.3	7.5	10.3	12.2	42.2	Pre G0 - G5	BC6650 is at G5
Digital Service	0.0	0.9	2.8	3.7	2.8	10.3	Pre G0	
B6/744 Border Improvements	1.9	1.9	3.7	3.7	2.8	14.1	Pre G0	
B6648 Seating and Charging	0.0	0.0	0.0	4.2	4.2	8.4	Pre G0	
Total	33.7	50.3	36.5	91.9	102.5	314.8		

Source: Heathrow