

Southern Access to Heathrow

*Securing the future for
the UK's global gateway*

August 2021

Heathrow Strategic Planning Group (HSPG) is a partnership of local authorities and Local Enterprise Partnerships surrounding the airport that are proactively planning ahead for the development of the sub-region - regardless of support or opposition for any expansion at Heathrow. HSPG members want to ensure that the airport is developed in a way that is well planned and sustainable, impacts are mitigated, and benefits are maximised for the communities that live around it.

Current members of HSPG are:

Enterprise M3 Local Enterprise Partnership, London Borough of Ealing, Elmbridge Borough Council, London Borough of Hounslow, Royal Borough of Windsor and Maidenhead, Runnymede Borough Council, Slough Borough Council, Spelthorne Borough Council, Surrey County Council, Thames Valley Berkshire Local Enterprise Partnership, and Thames Valley Buckinghamshire LEP.

Other organisations participate in many of the activities of the HSPG with 'Observer' status, including: Heathrow Area Transport Forum (HATF), Buckinghamshire Council, Colne Valley Regional Park, London Borough of Hillingdon, London Borough of Richmond, Department for Transport (Aviation Team and others), Transport for London, Environment Agency, Highways England, Natural England, Public Health England, and the West London Alliance (of West London Boroughs), and West London Business.

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This long recognised 'missing link' in the nation's rail network is essential for our economy and linking our world leading hub airport with the South, South East and South West regions. It will improve air quality, reduce congestion and support sustainable access to jobs and services. And with the right approach it could be so much more than that – delivering much needed new employment space and homes in a sustainable way on the doorstep of the Britain's premier gateway, benefitting local areas that are also amongst the most deprived in the UK, with high prevalence of child poverty. The social and economic benefits are clear and any delay in progressing it is a false economy – the time for action is now.

Seema Malhotra, MP for Feltham and Heston

Executive Summary



“Southern Access would be part of the Government’s plan to build back better, build back greener, and build back faster. We want to rebuild Britain and fuel the economic recovery across the United Kingdom. This Government have committed to building a Britain with world-class infrastructure and have established Project Speed, ensuring that we are building the right things better and faster than before. Project Speed is an ideal method of dealing with some of the delays with the southern link.”

Chris Heaton Harris (MP) Minister of State for the Department for Transport

Southern Access to Heathrow: securing the future for the UK's global gateway



The case for investment:

Addressing a multi-decade problem and unlocking economic potential

Heathrow is the **country's global gateway** for passengers and freight – providing access to markets across the globe and making the South East an attractive place for international companies to locate.

However, as the airport and the region have developed, the impacts of this growth have not been met by improved connectivity, particularly to the south, resulting in **increased congestion, constrained housing supply, and poor air quality**.

These challenges are **impacting productivity** and holding back the **development of a world-class multi-centre region**, with negative economic consequences for the nation as a whole.



“My belief is that a southern rail link fits exactly with the spirit of the times. It exemplifies the ambition set out by the Prime Minister that, after the pandemic, Britain will not only have a thriving future but one that is cleaner and altogether smarter than what went before.”

Angela Richardson, MP for Guildford



The opportunity:

A new model of sustainable growth integrating across housing, transport, and economic development

Delivery of Southern Access to Heathrow (SATH) will **address these challenges** and provide major transport improvements – and not just to the airport. This report details the transport rationale for the project at length.

But there is an opportunity for SATH to deliver on a **much wider and more ambitious agenda**. The scheme could be integrated with a holistic consideration of **regeneration, housing, innovation, and economic development strategies** across a wide arc to the south of the airport.

SATH can be a **platform for sustainable growth** that allows this region to enhance its role as a major contributor to the long-term economic success of the nation – fully capitalising on its unique assets and global relevance.

SATH has a robust and compelling economic story – at national, regional and local levels

NATIONAL

- Supports the **Government's vision of a Global Britain**, fostering inward investment and ensuring the UK economy remains competitive in a new era of trading relationships.
- Aligns with the **three pillars of 'Build Back Better: our plan for growth'** – infrastructure, innovation, and skills – supporting a sustainable recovery from the pandemic.
- Drives modal shift to public transport, supporting the **transport decarbonisation strategy and Net Zero** targets.

REGIONAL

- Contributes to **the levelling up agenda** by providing new access to jobs and opportunities for some of the UK's most deprived communities.
- Integrates, amplifies, and fosters the growth of the region's **cluster of technology and science** innovation centres.
- Provides a platform for further **economic specialisation and clustering**, e.g. the London West Innovation District.
- Reinforces and enhances the region's positional advantage as a **prime location for global businesses**.

LOCAL

- Supports delivery of **sustainable mixed-use development** – including badly-needed new homes and commercial space.
- Provides access to employment and skills development opportunities, and **creates new and better jobs** located close to where people live.
- **Revitalises** town centres and high streets.
- Supports **healthier lifestyles** through active travel and better air quality.

Now is the time for SATH to be delivered

The SATH scheme has demonstrated through numerous studies that it can **deliver against Government priorities**.

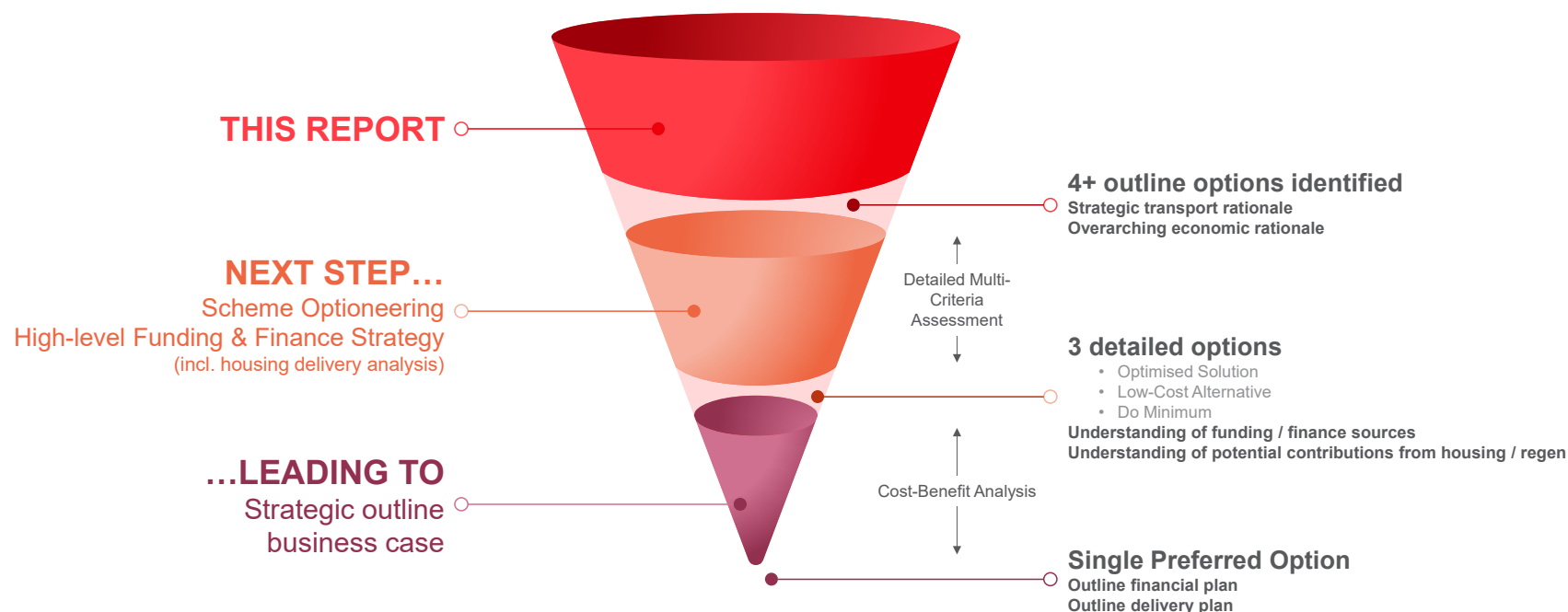
However, the **progress of SATH has not kept pace** with other nationally important projects, with minimal demonstrable progress following DfT's 2018 market sounding exercise.

A **new sponsorship and development model** is needed. This must include central government (DfT and other Departments, such as MHCLG), local governments, Heathrow, and Great British Railways working in partnership, alongside the private sector.

The immediate requirement is for Government to **set out a clear pathway** for the progression of the scheme, so that HSPG and our partners can play an active role in shaping this new model and ensuring successful delivery.

HSPG engagement has demonstrated that local authorities, businesses, and Heathrow Airport are ready to work with Government to shape and deliver this **transformational project for the UK**.

The time to act is now.





4.5 million

people within close proximity of the SATH corridor



£2.1 billion

national GVA impact from SATH*



8,200

jobs created by SATH*



£210 million

annual economic benefits from SATH, across the UK**



4 million

annual car journeys removed due to SATH



250,000

tons of CO2 emissions reduced annually due to SATH



12,000

Heathrow employee journeys improved by SATH (16% of total)



7 million

Heathrow passenger journeys improved by SATH (9% of total)

* *Influencing Strategic Transport in the South East*, March 2016. Figure converted from 2016 prices to 2021. These figures have not been further analysed as part of this report.

** *Reading-Waterloo Line and Southwest Rail Access to Heathrow Economic Impact Study*, Thames Valley Berkshire Local Enterprise Partnership (LEP), Bracknell Forest Council, Reading Borough Council and Wokingham Borough Council, 2014. Figure converted from 2014 prices to 2021. These figures have not been further analysed as part of this report.



SATH enables a number of strategic outcomes – with benefits that will be felt across the country

Introduction



“New public transport facilities like Crossrail, HS2 and rail links to the west and south will transform how people travel to Heathrow and ensure we reach our goal of 50 per cent of passengers travelling by sustainable transport by 2030.”

John Holland Kaye, CEO of Heathrow Airport Ltd

Introduction

What is SATH?

SATH is the name the Department of Transport (DfT) gave to a project to connect the areas to the south of the airport into both the airport and the existing public transport network. However, SATH is far more than connecting passengers to the airport, improved public transport would benefit the wider South East.

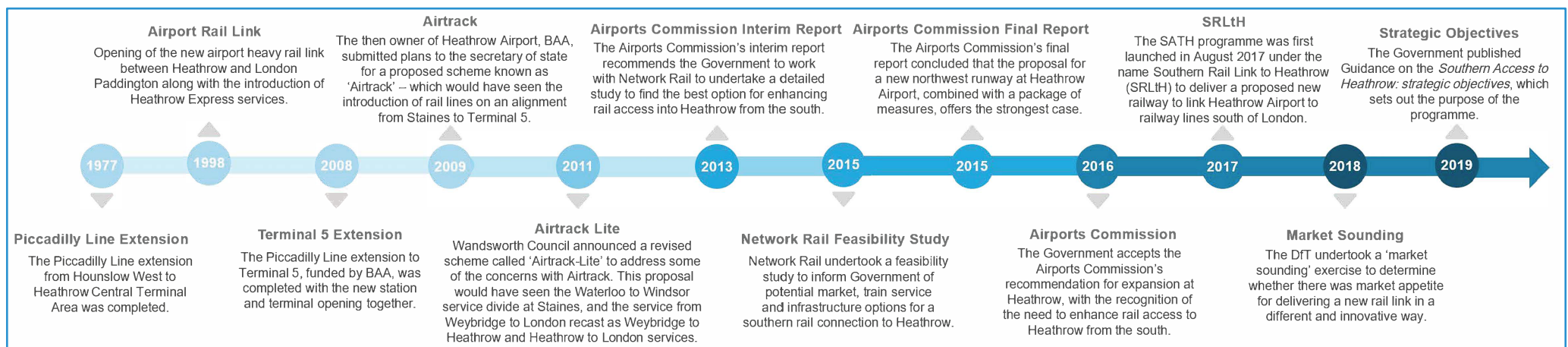
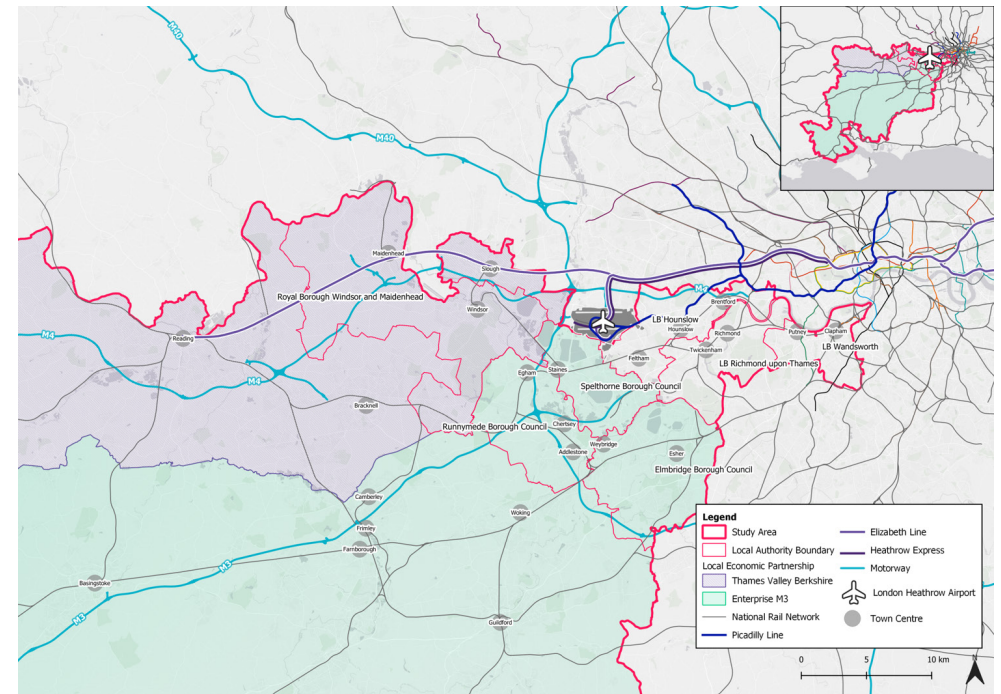
How has this scheme developed?

Connecting the airport network to the South West rail network has been put forward for over 30 years and through various schemes, the most developed of which was 'Airtrack'. The project has been linked with mitigating the impacts of Heathrow expansion, but the benefits would remain with or without a third runway and were originally proposed previously as part of proposals for Terminal 5.

What is the current status of SATH?

Stakeholders have been frustrated by the lack of progress on improving public transport access to Heathrow, which they consider vital for supporting the local economy and reducing environmental impacts. The progress made to date has not delivered a single option, and the pathway to funding and delivery remains unclear.

The Heathrow Strategic Planning Group (HSPG) has worked with its own members and key stakeholders to understand what benefits they could realise from improved connections via a SATH scheme, what challenges a new link might bring, and how it could be implemented in terms of delivery and funding. At the same time, the DfT has been preparing the Strategic Outline Business Case containing three of the five cases. However, there is also work needed to develop a single case for the scheme which addresses the 2019 SATH strategic objectives. Stakeholders are keen to work with the DfT to support this work.



Part 1.

The economic rationale for SATH



“A southern rail link would improve our local infrastructure and economy, but, crucially, it would also help us meet our environmental targets. Air pollution and noise pollution from the M25 and M3 affect Runnymede and Weybridge badly. We want people to use public transport, but the infrastructure needs to be in place.”

Dr Ben Spencer (MP, Runnymede and Weybridge)

01 Southern Access to Heathrow is a key enabler for local, regional and national economic growth and competitiveness

The SATH scheme will play a critical role in improving accessibility to Heathrow Airport – delivering economic benefits for the airport’s passengers, employees, and businesses across the South East. This is due in part to the high-value nature of businesses associated with Heathrow – as both a major passenger and freight gateway to the UK.

However, it is important to recognise that SATH is not solely about the airport, but also about improving a wide range of other journey types and purposes across the region, which will drive economic benefits more widely (see sidebar). For instance, a regional SATH scheme could provide more direct connections in the wider corridor connected via the airport, supporting better economic connections between Surrey and Hampshire, the Thames valley and West London, with a potential national connection at Old Oak Common.

Beyond the transport-related economic benefits, there is the opportunity for SATH to deliver on a much wider and more ambitious agenda in the region. The scheme could be integrated with a holistic consideration of regeneration, housing, innovation, and economic development strategies across a wide arc to the south of the airport (see map overleaf). This approach to sustainable growth could also enhance the overall case for the scheme and potentially provide a model for part-funding the project.

The Heathrow Strategic Planning Group (HSPG) has set out an economic vision for the sub-region in *Heathrow 360: The Gateway to the UK* (May 2021).¹ This vision explores the opportunities for taking a more integrated approach to the wide array of economic challenges and opportunities facing

¹ Heathrow 360 builds on HSPG’s *Economic Development Vision and Action Plan* (EDVAP, March 2020), which was prepared prior to the pandemic and the successful High Court challenge to Heathrow’s expansion plans.

Economic benefits from SATH

Previous studies have demonstrated strong potential national-level economic benefits from SATH. The types of economic benefits that are likely to be assessed in more detail in the next phase of the project’s delivery, as part of a formal business case process, are:



Benefits to users of the new rail service, such as journey time savings or cost reductions – importantly, this would include benefits both for passengers and workers accessing the airport as well as those making other journeys both within the region and beyond;



Benefits to ‘non-users’, such as reduced roadway accidents, reduced greenhouse gas emissions, reduced congestion, and local air quality improvements;

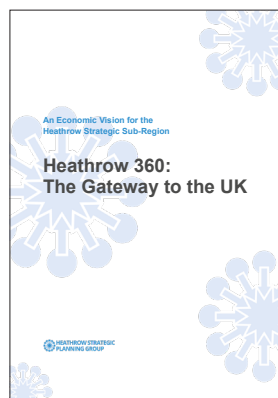


Benefits to the region’s economy, for instance through agglomeration and labour supply impacts; and



Benefits to wider society through delivery of new housing, uplift in land values, decarbonisation, improved open space or cultural amenities, and positive impacts on public health.

Heathrow 360: A Wider Narrative



Heathrow 360 sets out the economic vision for the Heathrow Sub region including:

- A unique combination of local, regional, national, and international connections that come together in the area around an airport of global significance, on the outskirts of a world city.
- A business hub and network built around innovation zones, business assets and a concentration of international HQ buildings.
- A green hub to support decarbonisation of aviation and the airport, sub-region and national economy.
- A transport hub with connections to other economically significant parts of the UK and abroad, as well as delivering enhanced connectivity across the sub-region.
- A gateway to the UK for air cargo and a focus for cleaner, smarter urban logistics.

Extract from HSPG’s Heathrow 360

this part of the country.

In addition to playing a vital role in the region's economic future, SATH also has national economic significance:

- The project supports the **Government's vision of a Global Britain**, supporting inward investment and ensuring that all UK regions remain economically competitive as the nation moves into a new era of trading relationships across the globe. By delivering improved access to Heathrow, the government would be investing in a globally competitive regional economy, with high-value global exports supporting economic growth.
- The project **contributes to the levelling up agenda**, which seeks to tackle the underlying causes of entrenched inequalities and deprivation in communities across the UK. New links and improved capacity provide an opportunity for local authorities in the region, where significant economic challenges and high levels of deprivation remain, to deliver sustainable growth-focused development schemes which deliver vital housing for the region and provide commercial opportunities for new and existing businesses – creating new and better jobs located close to where people live across a range of sectors and qualification levels.
- The project is **aligned with the three pillars of 'Build Back Better: our plan for growth'** – infrastructure, innovation, and skills – supporting a sustainable recovery from the Covid-19 pandemic.

These national economic contributions are explored further in the following sections.



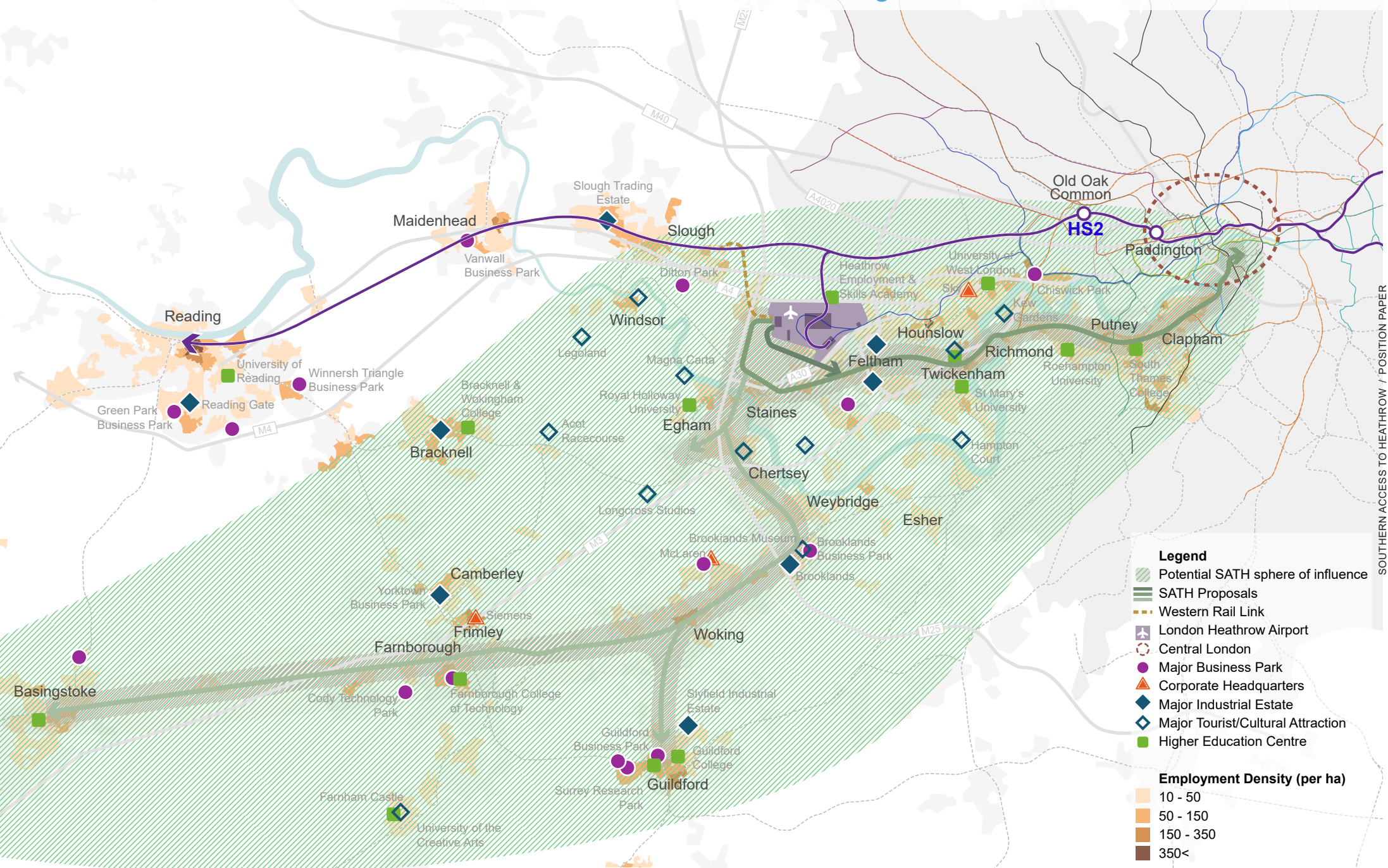
Department for Transport

Government's economic objectives for SATH

The Department for Transport (DfT) has established a set of seven strategic objectives for the SATH scheme. These objectives are important, as they will provide the framework for future decision-making around the project, including the strategic and economic appraisal of different SATH options. Of these, two are directly related to the economic impacts of the scheme. The following text is copied from DfT's *Southern Access to Heathrow: strategic objectives* (published 4 November 2019).

- **Boost economic growth and encourage regeneration:** SATH should benefit the communities around Heathrow, boosting productivity and economic growth, and encouraging regeneration. The development of SATH should identify options for linking current and future economic hubs and residential areas, reducing deprivation and supporting the Government's policy on housing growth. Consideration should be given to the development of public transport interchanges to enable improved pedestrian access, cycle storage, and links to local bus networks. This would provide greater accessibility and connectivity to employment opportunities, nationally and internationally, improving productivity and outputs in the UK economy.
- **Enhance our global competitiveness by making Britain a more attractive place to invest:** The transport sector makes trade possible and supports business across Great Britain and internationally. Businesses need effective international connections to access existing and new markets, integrate their operations into their global networks and supply chains, and to conduct business efficiently. The UK is already well placed to meet these needs, but we are in constant competition with other countries to attract global business. By providing new journey options, improving connections to the airport and the labour market and airport supply chain, SATH will support UK business and trade. There are opportunities to increase usage of rail freight and freight transported by alternative transport modes, further boosting global competitiveness through enabling faster and more economic methods of transporting goods.

SATH at the heart of a wider economic narrative for the sub-region



02 SATH supports the aims of a Global Britain and a highly productive economy

The SATH project can be an important contributor to the Government's objective of boosting international competitiveness in the near- and long-term, particularly in light of Britain's changing trading relationships.

The HSPG region is critical to the health of the nation's economy, with Heathrow acting as the UK's 'gateway for investment' for firms across the globe. The airport is one of the most important infrastructure assets anywhere in the world – a key hub in a complex ecosystem of logistics, freight, and service-based business relying on international connectivity.

There is no dominant industrial sector in the area, but there are several sectors with strong local presences that rely on international supply chains, labour markets, and customers. These include IT, finance and professional services, advanced engineering and manufacturing, and culture and creative industries.

The area that could be directly served by SATH includes a significant presence of firms that would benefit from improved access to the airport. These include major domestic and multinational companies such as BAE Systems, Berkeley Homes, Samsung, Mercedes-Benz, Crest Nicholson, Procter & Gamble, McLaren Group, and Shepperton Studios. When combined with the area's highly skilled workforce and quality of 'place' (in terms of green space, amenities, schools, and other factors), improved access to Heathrow can play a role in attracting other corporate headquarters or expansions.

Improvements in international connectivity, enabled by SATH, can also result in catalytic impacts for beneficiary areas in the form of Foreign Direct Investment (FDI) and trade, which can then translate into increases in productivity. There is strong evidence to suggest that international transport links play a key role in business investment decisions¹ and that FDI leads to increases in productivity.²

Key business sites and industrial zones that are well connected to major airports have been demonstrated to attract a higher level of FDI than less well-connected locations – which in turn has also been shown to increase local productivity, as these firms tend to have higher productivity levels than wholly domestic-owned firms.

For example, prior Arup research in areas relevant to Heathrow found that the level of foreign ownership of large companies located within a 400-metre radius around Paddington station (15 minutes to Heathrow by rail), compared to companies within 400 metres of Reading station (1 hour to Heathrow by rail) was c. 37% compared to c. 22%.³

SATH – by significantly enlarging the 'catchment' area of firms with fast, high-quality, efficient links to Heathrow, could reasonably be expected to have an impact on the South East region's competitiveness, productivity, and inward investment.

¹ PwC - *Air connectivity: Why it matters and how to support growth*

² Department of International Trade (2017) - *Estimating the economic impact of FDI to support the Department for International Trade's promotion strategy: analytical report*

Office of National Statistics (2017) - *Foreign direct investment and labour productivity, a micro-data perspective: 2012 to 2015*

³ Foreign ownership figures calculated by the IDT using a combination of commercial property data from the CoStar database (www.costar.co.uk), and direct online research to establish the ownership of the relevant companies



Global connectivity and investment delivers productivity gains

A similar comparison made of company ownership between Manor Royal business park (located within 10 minutes of Gatwick Airport by public transport) and Slough Trading Estate (a business park similar in scale, located 40 minutes from Heathrow by public transport), found similar results: c. 40% of large businesses in Manor Royal are foreign-owned, compared to c. 27.5% of small businesses in Slough Trading Estate.¹

¹ Foreign ownership figures calculated by the IDT using a combination of commercial property data from the CoStar database (www.costar.co.uk), and direct online research to establish the ownership of the relevant companies.

03 SATH supports levelling up the UK economy

The proposals for SATH should be considered in the context of levelling up, one of the Government's primary policy objectives – as was made clear in the May 2021 Queen's Speech. While often viewed as a policy focused on communities in the North, there is an emerging consensus that levelling up is as much about socioeconomic inequalities within regions as between them.

Despite being considered a wealthy area of the UK, many of the communities close to the airport such as Feltham, Bedfont, and Stanwell all sit in the 20% most deprived parts of the country, and poor transport connectivity and congestion is a key contributor to that condition. Additionally, parts of the London Boroughs of Hounslow, Southwark, and Lambeth are among the most deprived in the UK. These pockets of long-term, structural deprivation are likely to have suffered more intensely during the Covid-19 pandemic, which has disproportionately affected poor communities. Accelerating housing affordability challenges – house prices rose by 57% between 2007 and 2019 in the HSPG area¹ – also mean that people may be increasingly displaced from this area and may have to travel further to access jobs at the airport and other local employers.

SATH can support levelling up through different mechanisms, including improving access to existing job opportunities, increasing employment and economic output, regenerating town centres and unlocking new housing opportunities, and improving health outcomes.

1. **SATH can provide access to new employment opportunities in the area** – current public transport provision is limited, and some rail services are focused on access to high-value jobs in central London. There is a need to improve connectivity to jobs in London but also to the airport, as Heathrow (and its supporting businesses) provide a wide range of jobs both in terms of sector and entry requirements. These jobs include services roles alongside engineering, management, and logistics, with a high number of vocational career paths for apprentices as well as graduate and experienced professions. Access to these jobs do not benefit from the same levels of connectivity as the financial services-orientated London market. A SATH scheme that improves access to jobs in South West London and the wider South East region, via new rail connections and improvements in frequency, can enable people to access new employment opportunities and do so in a sustainable and affordable way. Increased integration of the area through public transport can expand the catchment of the airport and support multi-centre economic growth, creating an effective network of towns that become a single, functional economic area where economic opportunity is accessible to all.

2. In addition to improving access to existing jobs, **SATH can support the creation of new jobs**. The HSPG region hosts 84,000 businesses and is characterised by significant high-value industrial activity – GVA per worker is 28% higher than the England average², including a high share of freight-related economic activity. The congestion relief that SATH could achieve can benefit those businesses relying on road transport, which constitute a higher than national average share in the area³, improving productivity and enabling increases in employment and economic output. Overall, increasing transport capacity in this area of significant high-value economic activity can lead to increased agglomeration and productivity benefits, promoting business growth. This can help create a wide range of jobs accessible to people in deprived communities.
3. By providing new and/or improved stations, **SATH proposals can also support delivery of new housing and revitalisation of town centres**. Deprivation in the area is concentrated in town centres. In the current Covid-19 recovery climate and in the context of struggling high streets, attracting footfall to town centres and revitalising high streets is more important than ever. Stations are gateways to town centres and can play a key role in supporting increased footfall as well as in unlocking higher density mixed-used developments and high-quality housing. This would support town centres and help address housing affordability challenges in the area, as well as sustainable ways of living linked to public transport and local regeneration. Our engagement with local authorities found that they are prepared to maximise the town centre potential of stations linked with new rail services to Heathrow for housing and commercial development. An integrated approach to developing transport and housing/regeneration proposals could lead to significant benefits in the area and support project delivery.
4. **Supporting health outcomes** – The area around the airport is characterised by high levels of congestion and emissions. Reducing congestion – through modal shift to improved public transport services like SATH – can help improve air quality which had prior to Covid seen regular exceedances of legal limits, reducing both air movements and the high level of NO₂ sustained by local traffic. Local authorities are keen to see a holistic vision for this project which encompasses more than just a fixed transport link, but also improvements to walking and cycling access between these nodes, local housing and commercial developments, and town centres. Levelling up is not just about economic but also social outcomes and closing the gap in wellbeing indicators like health.

Employment at Heathrow

Heathrow employed 72,000 people directly in 2019, with a linked supply chain employing a further 30,000. Heathrow is also unique in the regional job market which is focused towards the service sector and central London. Heathrow offers a diverse range of employment opportunities with up to 70% of local employment in the logistics sector. Providing better access to these jobs supports diversification of the local labour market and allows these firms access to a wider labour catchment supporting them in pursuing further growth.

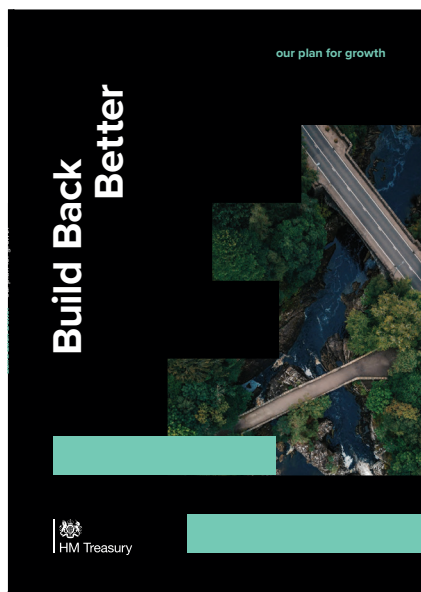
¹ HSPG (March 2020), *Economic Development Vision and Action Plan*

Reference: Oxford Economics (July 2020), *The Economic Impact of Reduced Activity at Heathrow Draft Report for the London Borough of Hounslow*

04 SATH supports the three pillars of Build Back Better – *infrastructure, skills, innovation*

The Government issued its Build Back Better Plan for Growth in March 2021. This plan sets out the strategy for rebuilding the UK economy post-Covid, as well as responding to other economic challenges such as low productivity growth. The plan is centred around three pillars: infrastructure, innovation, and skills. The SATH project contributes to all three of these pillars.

1. **Infrastructure:** SATH will provide new, high-quality infrastructure to the UK network that fills a strategic connectivity gap (this is explored further in the SATH Position Paper, section 03). By providing a sustainable transport alternative, SATH will support the UK towards its 2032 and 2050 climate change targets and reduce local air quality impacts. An early, indicative estimate produced by Arup is that a SATH scheme could reduce CO2 emissions by a quarter of a million tonnes over its first 10 years, through modal shift to public transport. The SATH scheme can be designed, constructed, and operated to take advantage of the latest technologies and innovations in the sector, such as intelligent infrastructure, low-carbon forms of traction, and modern forms of ticketing and information provision.
2. **Skills:** SATH can play an important role in addressing the skills challenges and opportunities across the HSPG region. While generally this region contains a highly skilled workforce, skill levels vary widely across individual communities. SATH can help to spread the skills benefit from, for example, the Heathrow Employment & Skills Academy to a wider part of the South East. The Academy is largely only accessible to people in this region who own cars, given the lengthy and difficult journeys by public transport. SATH would open up new opportunities to young people and others who cannot or choose not to drive. SATH schemes could similarly improve public transport options for a wider segment of the South East to the University of Surrey, Royal Holloway, and the Farnborough College of Technology (amongst other higher education and further education facilities) – allowing a broader cross-section of people to be able to access these important opportunities for skills development at the airport and linked industries.
3. **Innovation:** As noted in the EDVAP: “Cultivating and harnessing innovation is a core principle of sustainable economic growth. The HSPG region is well-placed to become a national and international leader in innovation across multiple sectors, including freight and logistics, media production, and environmentally sustainable aviation.”



The region already has a robust cluster of innovation centres, including the McLaren Technology Centre in Woking, Farnborough International, Surrey Research Park in Guildford, and the University of Surrey 5G Innovation Centre. The HSPG is further exploring opportunities to build upon these and other centres for innovation, as set out in Heathrow 360. These include emerging plans for the London West Innovation District, and working with Heathrow Airport on a collaborative innovation testbed and Research Centre. Innovation in the aviation sector is likely to be a key driver of economic growth in the region. Heathrow Airport has recently secured funding from Innovate UK to deliver two sustainability-related innovation projects, focused on new aviation propulsion technologies to support the UK's path to net-zero.

All of these initiatives would benefit from the improved connectivity and accessibility provided by SATH to Heathrow, London, and other destinations in the region. Depending on the option selected for the SATH, there is the opportunity for the scheme to provide a unifying focal point or 'backbone' to the emerging innovation cluster in the region. Future concepts such as establishing 'innovation testbeds' could also be spatially aligned with the construction and delivery of SATH.

“High-quality infrastructure is crucial for economic growth, boosting productivity and competitiveness. More than this, it is at the centre of our communities. Infrastructure helps connect people to each other, people to businesses, and businesses to markets, forming a foundation for economic activity and community prosperity. Well-developed transport networks allow businesses to grow and expand, enabling them to extend supply chains, deepen labour and product markets, collaborate, innovate, and attract inward investment. Digital connectivity is unlocking new and previously unimaginable ways of working, and is now essential to facilitate public services, including healthcare and education.”

Excerpt from Build Back Better: our plan for growth

Part 2.

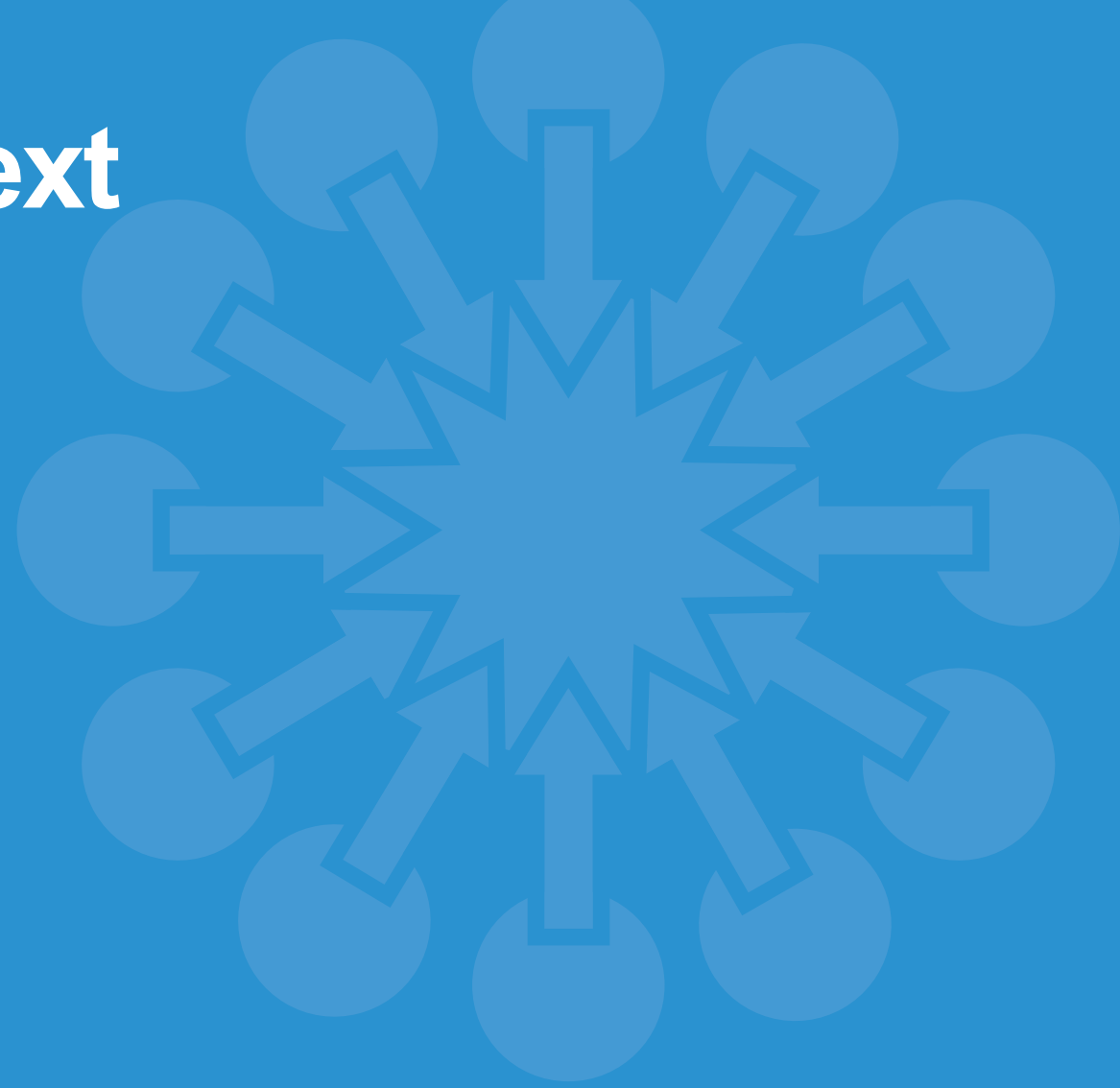
The strategic rationale for SATH



“The Heathrow Area Transport Forum are committed to working in partnership with Team Heathrow, local authorities and communities, transport operators, and other relevant parties to drive sustainable and affordable travel for passengers, colleagues, and freight in order to prevent a car-led recovery.”

Val Shawcross CBE, Chair of the Heathrow Area Transport Forum

2.1 SATH in context



05 SATH fills a strategic connectivity gap

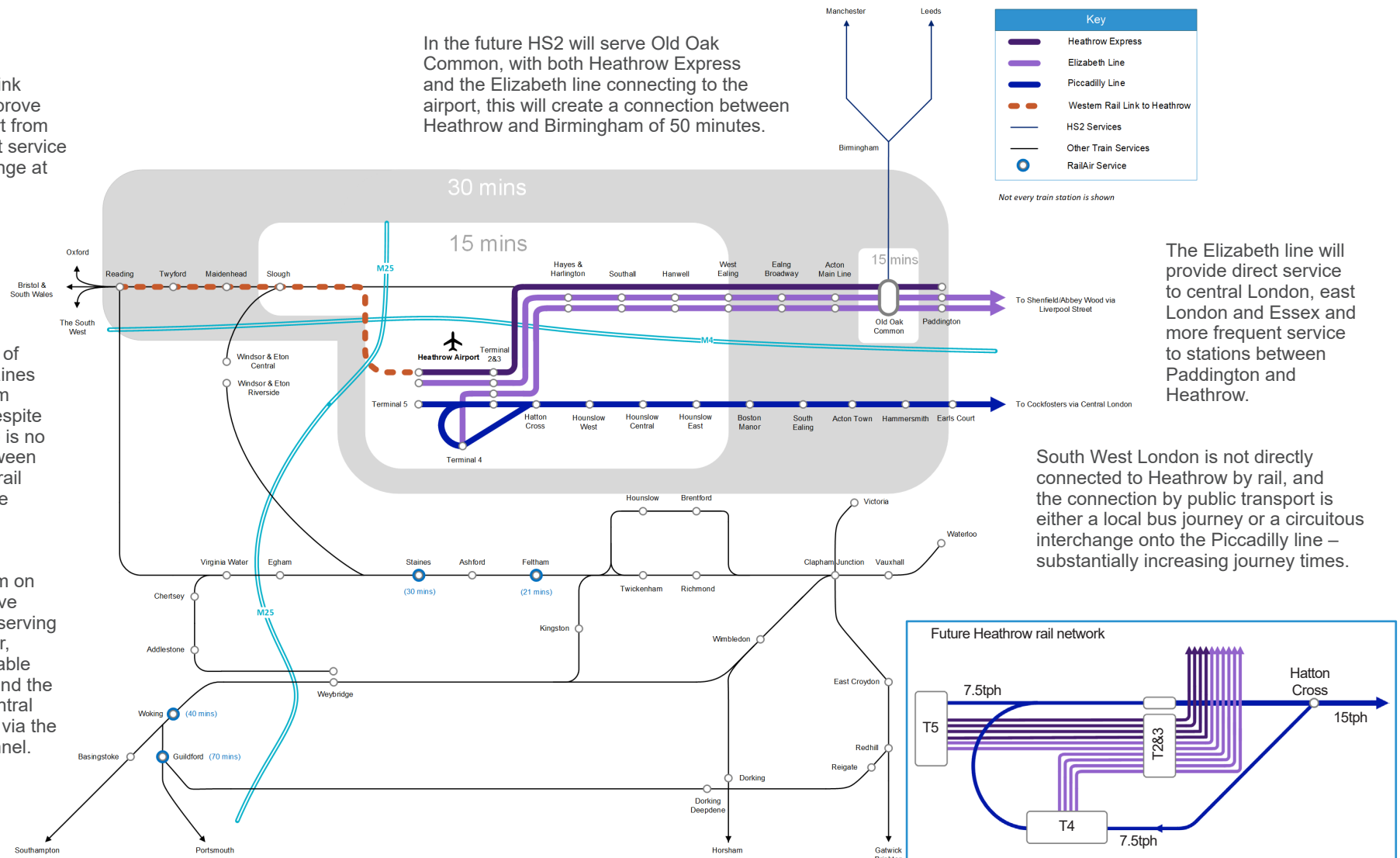
The Western Rail Link to Heathrow will improve access to the airport from the west via a direct service or a single interchange at Reading or Slough.

The Windsor lines run only 2km south of Terminal 4, and Staines station is only 4.5km from Terminal 5. Despite this proximity, there is no rail connection between the airport and the rail network south of the airport.

Staines and Feltham on the Windsor line have direct bus services serving the airport. However, these can be unreliable due to congestion and the only route to the central terminal area being via the northern access tunnel.

Currently, passengers and staff from Surrey and Hampshire have to travel into Central London to interchange with existing Heathrow rail services or use a limited number of bus and coach services. Key interchanges for the region are at Guildford, Woking, and Clapham Junction.

In the future HS2 will serve Old Oak Common, with both Heathrow Express and the Elizabeth line connecting to the airport, this will create a connection between Heathrow and Birmingham of 50 minutes.









The Elizabeth line will provide direct service to central London, east London and Essex and more frequent service to stations between Paddington and Heathrow.

South West London is not directly connected to Heathrow by rail, and the connection by public transport is either a local bus journey or a circuitous interchange onto the Piccadilly line – substantially increasing journey times.

The future plans for the rail network are for 6 trains per hour to reach Terminal 5 (two Elizabeth line and four Heathrow Express). The scope to add more through services is limited by the need to serve Terminal 4 and capacity on the lines between Paddington and Airport Junction. This reduces the number of services that can run through to the Central Terminal Area from the west (from the Western Rail Link) or south (from a SATH scheme).

Terminating services from the south or west at Terminal 5 is possible due to the space provided within the existing station box. However, this means passengers would need to interchange to reach Terminals 2,3 and 4. London Underground is upgrading the Piccadilly line which could create an additional three airport services per hour.

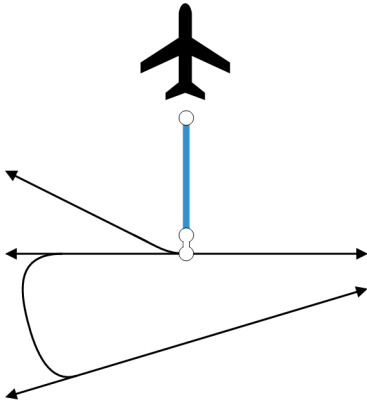
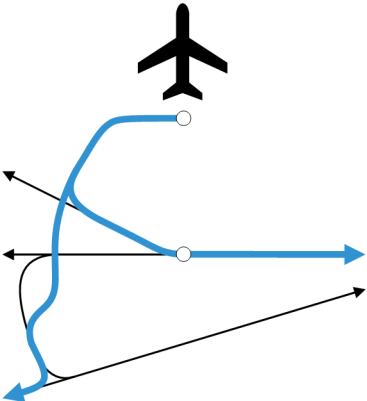
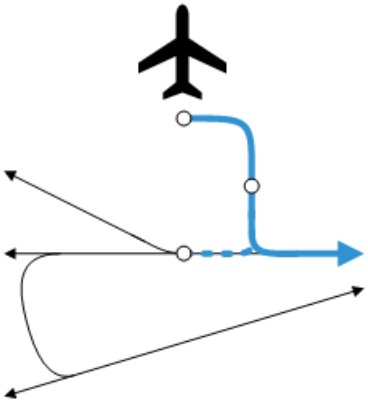
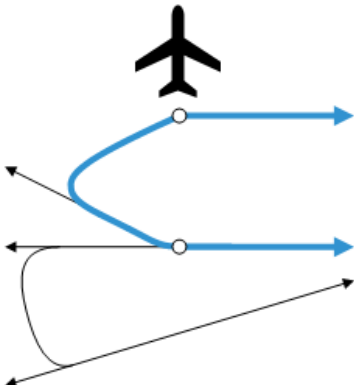
06 SATH is needed to improve sustainable transport mode share to Heathrow airport

 To LHR →		 Public Transport Journey Time (min)	 Car Journey Time (min)	 Public Transport Mode Share	 Estimated Daily Air Passenger Car Journeys	 Estimated Daily Employee Car Journeys
Example Station						
London	Feltham (Hounslow)	21	10	33%	2000	4250
	Richmond (Richmond Upon Thames)	45	30	17%	2000	1000
	Clapham Junction (Wandsworth)	45	25	42%	1250	250
Surrey	Staines (Spelthorne)	30	10	10%	750	2500
	Weybridge (Elmbridge)	80	25	3%	750	750
	Guildford (Guildford)	70	30	9%	750	250
	Woking (Woking)	40	25	22%	500	500
	Bagshot (Surrey Heath)	90	25	2%	500	1000
	Chertsey (Runnymede)	70	20	4%	500	1000
RB Windsor and Maidenhead	Sunninghill	110	20	4%	1500	1250

This table shows the comparative mode shares of selected stations in the potential SATH catchment, and an estimate of daily car trips from passengers and employees. The share of passengers using public transport to access Heathrow is considerably lower than other areas with direct rail connections. Many of these areas have well-used direct rail connections to Gatwick – both Richmond and Guildford both have considerably higher public transport mode shares for Gatwick than Heathrow, demonstrating the importance of good rail access and what SATH could achieve in mode share terms. The mode share improvements are potentially much wider if key interchanges are enabled at stations such as Staines, Clapham Junction, Woking, and Guildford.

Airport-related trips are not only created by passengers; the Heathrow expansion surface access strategy identified the considerable demand from employment at the airport, and a huge variation in transport use between regions with good public transport connections and those without. This also affected the attractiveness of Heathrow to different types of workers: for those without parking permits living outside London or Slough, travelling to Heathrow is very challenging. Neighbouring boroughs want to see growth in employment at the airport, but this needs to be done sustainably, by attracting workers from a wider catchment and shifting away from car dependency.

07 There are a number of developed proposals for SATH

	Light Rail from Staines	Heathrow Southern Rail	Feltham to Bedfont	SLRTH
				
Summary	<p>This option is being promoted by Spelthorne Borough Council and aims to create a new light rail transport link from Staines-upon-Thames to Heathrow. The proposal would see light rail services running between Staines station, Staines Town Centre, and Heathrow Airport. The link would act as a standalone shuttle separate to existing rail services and would require passengers and staff travelling from outside Staines to interchange in order to continue with their onward journeys.</p>	<p>This option for a new rail link is being promoted by Heathrow Southern Railway Limited, a privately funded organisation with the aim of improving rail access to Heathrow Airport. The option creates a link from Heathrow to Woking, Guildford and Basingstoke. In order to avoid level crossings in the Egham area, it requires new tunneled infrastructure allowing it to join the existing network near Virginia Water or Chertsey.</p>	<p>This option is supported by the London Borough of Hounslow and aims to create a new heavy rail link from the Windsor line at Feltham to Heathrow Airport T5, serving a new station in the Bedfont area. The link would allow services to operate to Heathrow from London Waterloo and Surrey/South West England.</p>	<p>This option is for a new heavy rail link from the Windsor line at Staines to Heathrow Airport T5, serving a potential new station at Stanwell Moor. The new link would allow services to operate to Heathrow from London Waterloo and Surrey/South West England.</p>
Key Benefits	<ul style="list-style-type: none">• Deliverable with minimal impact on existing networks• Enables local journeys• Used at other airport to connect to mainline stations	<ul style="list-style-type: none">• Connects to the wider South East region and key interchanges such as Woking, Guildford and Staines• Supports potential link at Old Oak Common to HS2 and Paddington• Improves local connections between Woking and Staines	<ul style="list-style-type: none">• Supports local housing development• Enables link to SE London• Enables local services from eastbound direction	<ul style="list-style-type: none">• Supports development around Staines station• Enables potential link to Old Oak Common and HS2• Limits reliability impact between networks

08 Developing and delivering SATH is achievable



Integrating with existing infrastructure

There is a complex infrastructure ownership picture with Heathrow owning the rail network between Airport Junction, the Heathrow stations, and land at the terminals; while Network Rail owns infrastructure on the Wessex and Western Rail networks. In order for the schemes to integrate successfully and provide the optimal solution, they are to be developed in collaboration between asset owners.

The project is likely to involve crossing other strategic infrastructure such as existing railways, roads, and the airport itself. The owners of those assets will need to be consulted early, and the project design should ensure minimal disruption for those key pieces of local infrastructure during both construction and operation phases.



Utilising existing services

There has been a number of schemes proposed which include the extensions of existing or proposed rail services such as the Elizabeth line and Heathrow Express services which currently terminate at Terminal 5 or services on the Windsor lines continuing into Terminal 5.

Diverting services is the most important impact which stakeholders were keen to see avoided. There were concerns over the impact on the areas where services are diverted from in terms of service quality and capacity.



Mitigating local environment impacts

Reducing the impact of infrastructure projects on the environment has never been more key to building a successful project. Engineering projects such as HS2 have significantly reduced emissions through using the latest low-carbon techniques which should be harnessed. The environmental impact is not limited to carbon - it should minimise impacts on the local area in aspects such as noise and visual impacts, as well as land take, particularly in the local green belt.

With the potential for Western Rail, Southern Rail, and Heathrow expansions to be delivered at the same time, there could be significant impact from construction where these happen concurrently. With the aim of improving local environments, the project should not significantly worsen the environment in the short-term.



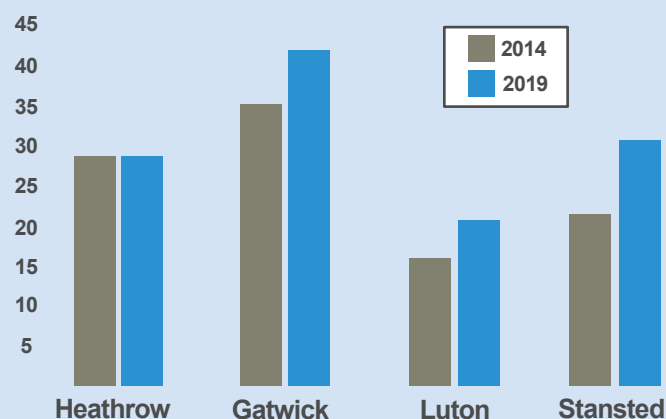
Meeting the demand of multiple markets

Airport passengers have different characteristics to other rail users – passengers are considered to have a higher value of time and a higher dislike of interchanging which is closely linked to reliability. However, the focus on average passenger masks a range of passenger preferences based on income, trip type, car availability, and the cost of alternatives. The evidence from links to airports across the South East is that regular, frequent, reliable, and direct public transport is the key to changing passenger behaviour away from private car and taxi.

For airport workers, affordability is likely to be relatively more important than for passengers, and this needs to be considered as part of the ticketing and pricing. Unlike traditional rail markets, early and late services are critically important for both passengers and workers due to passengers arriving at airports for early morning flights and departing from late night arrivals, and the significant amount of shift working which takes at the airport.

Airport rail services are designed with the specific demands of airport passengers in mind, such as increased luggage storage, lower seat density and level boarding at stations. However, this often comes at the expense of capacity in terms of seats and floorspace which regional rail services are designed to maximise. When designing a single service for multiple markets there may be some compromise in design which could limit modal shift potential.

Rail and Tube mode shares for London airports



Despite being the largest airport in London and the South East, Heathrow has fewer regional rail connections than its competitor airports. Over the past 5 years, other airports have seen improvements to rail connections – Gatwick and Luton have both seen rail use increase as a result of Thameslink programme improvements which have opened up new direct connections to town and cities across the region. Luton will open its new airport link (DART) in 2021 and Gatwick will open its upgraded station in 2023. Connectivity also influences demand with air passengers increasing from areas with good public transport connections – and these additional passengers will all be travelling by public transport.

When assessing mode share potential, it is key to look beyond existing public transport passengers changing modes, and look to understand some of the dynamic changes to passenger preferences and even land use changes that SATH could deliver. As well as using the airport demand models that have been developed, we need to look at similar mode shares from rail links serving other airports in the South East, and internationally at airports in Europe, such as Brussels, Amsterdam, and Vienna.

09 Developing and delivering SATH is achievable



Controlling Unreliability

Reliability is key to the operation of high frequency and high demand railway networks that operate across London and the South East; and there are concerns from operators that the development of a new scheme may make operating their existing network more challenging.

There are two main reliability challenges. Firstly, in order to run to the airport, additional services are required on already highly congested sections of railway, meaning lower resilience when operational delays occur. Secondly, by connecting different parts of the railway network, delays in one section will no longer be contained, but potentially impact other separate networks as trains miss their timetabled paths, calling for adjustments.



Managing increased demand

The scheme will need to ensure that the downstream impacts on crowding are acceptable so that incoming trains do not arrive at stations (either at the airport or at subsequent stations) at full capacity and passengers are therefore prevented from boarding. For airport passengers this is a particular challenge as existing services terminate at the airport, thus providing an empty train for passengers with capacity for them and their luggage. This would not be the case if services are extended beyond the airport.

Interchanging capacity will also need to be assessed where there is forecast to be a significant increase in usage. This could be between heavy rail services, or on to other services, such as light rail and bus.



Avoiding community severance

Previous southern access projects, such as Airtrack, have created significant impacts on the local road networks by altering level crossing timings. Stakeholders are keen that this is not repeated with this project around community severance issues created by increasing the use of level crossings in both Spelthorne and Richmond.

Stakeholders close to the airport are also keen to see that communities impacted by any new infrastructure do not suffer from local connectivity loss as a result of the project as a minimum, and ideally see benefits from the scheme. This could be in terms of public transport services or improvements to local walking and cycling access to local stations and the airport.



Reducing local congestion impacts

The significant potential for modal shift to public transport is, as stakeholders agreed, a key benefit to the proposals. However, there are concerns that for certain trips, induced car trips to transport nodes would create new local traffic demands, especially where airport passengers may be seeking to avoid potential charges (such as the proposed London boundary charge or airport drop-off charges). Proposals need to be developed with local governments to ensure these negative impacts are identified, controlled, and incorporated into the design.

Any linked regeneration scheme will also need to focus on minimising local impacts and maximising public transport use, through integrated design with proposed transport links and the connectivity it delivers.

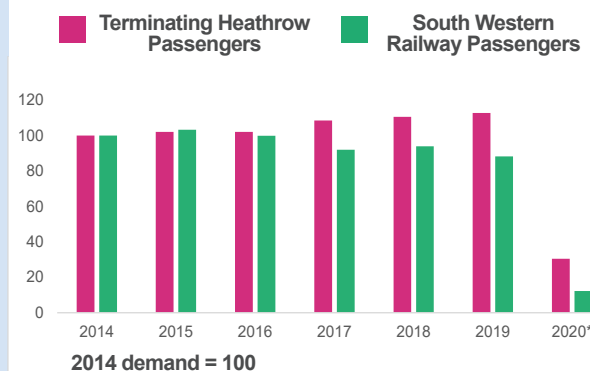
► COVID-19 and Heathrow expansion

COVID-19 has had a major impact on the demand for air and rail travel: demand at Heathrow fell by 72% in 2020, and demand for rail travel by 80%. There is a high degree of uncertainty over its long-term impacts on demand for travel when the pandemic declines. Within the rail market, working from home is projected to significantly and permanently reduce the number of commuter rail trips into major cities. However, unlike other rail projects this scheme is not dependent on commuter trips - its potential passenger market largely consists of those accessing the airport as passengers or employees, most of whom cannot work from home¹. New sources of demand, such as HS2, will open by the 2030s and there would be an opportunity to refocus some capacity away from serving central London towards providing alternatives for orbital and local trips in outer London and the South East.

In the aviation market, similarly, new trends of remote working may reduce the demand for business travel, which is particularly important for hub airports such as Heathrow. However, Heathrow is far more than a business airport as it serves key long haul growth markets in tourism and is a vital freight hub for UK exports, delivering more freight by value than any other UK port. Airlines remain keen to retain their slots at Heathrow indicating that any falls in demand from the London aviation market will not be concentrated at Heathrow. We would expect over the timeframe a southern access scheme would be delivered for Heathrow to again be reaching capacity², and indications from countries such as the US and China demonstrate the underlying demand for travel remains strong.

Heathrow expansion is still undecided with a successful appeal against the 2020 ruling against the national policy statement judgement. Improvements to public transport should not be linked to the expansion, and schemes should be developed independently from the expansion project to avoid further delays and confusion. There is an opportunity to speed up the delivery of SATH so that when demand does return over the next decade, the congestion and air quality impacts on local communities do not.

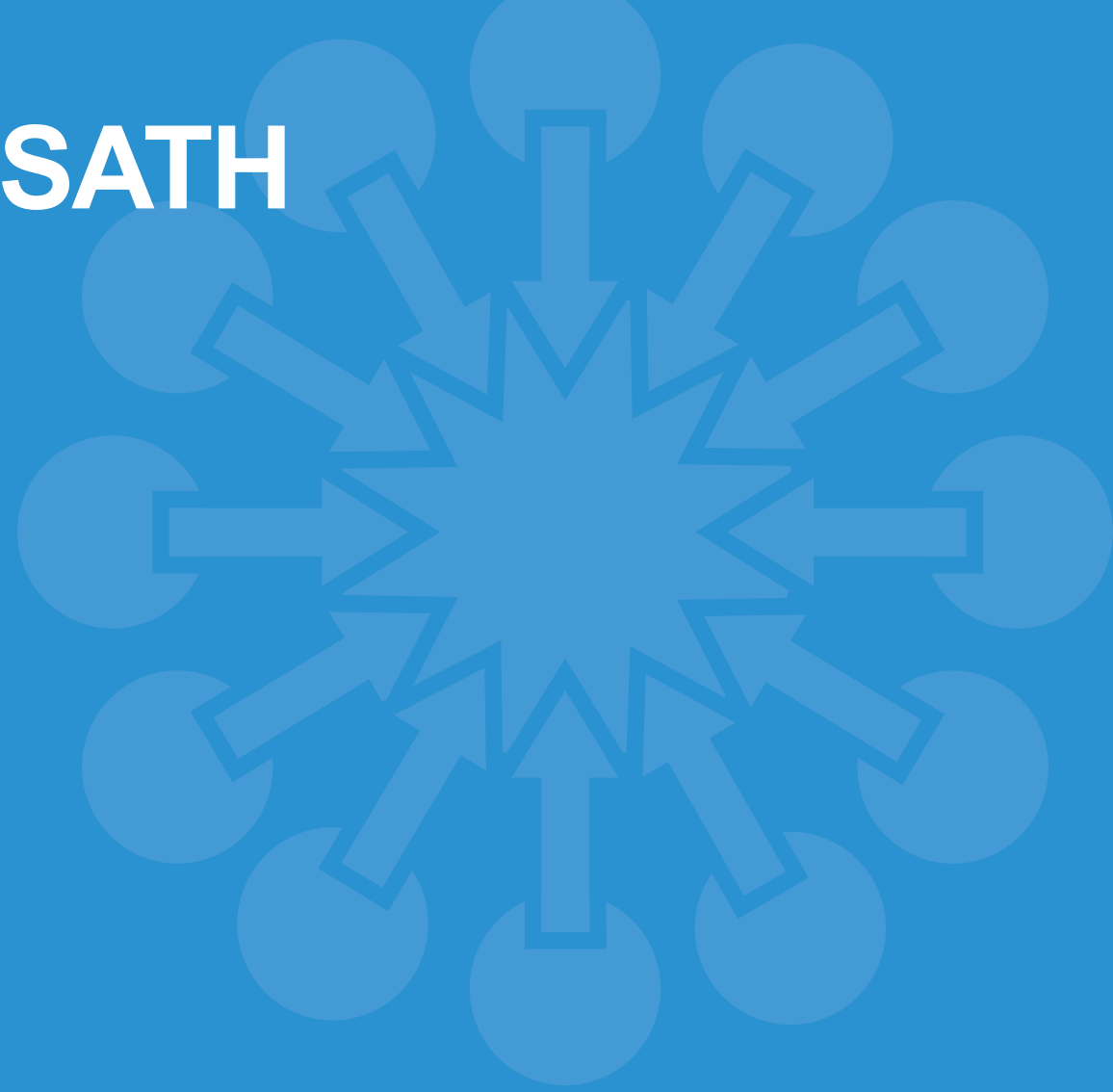
Rail passenger numbers by year



¹ <https://www.transportfocus.org.uk/news/end-of-the-monday-friday-commute-transport-watchdog-calls-for-urgent-rail-fares-reform/>

² <https://www.iata.org/en/pressroom/pr/2020-07-28-02/>

2.2 Why we need SATH



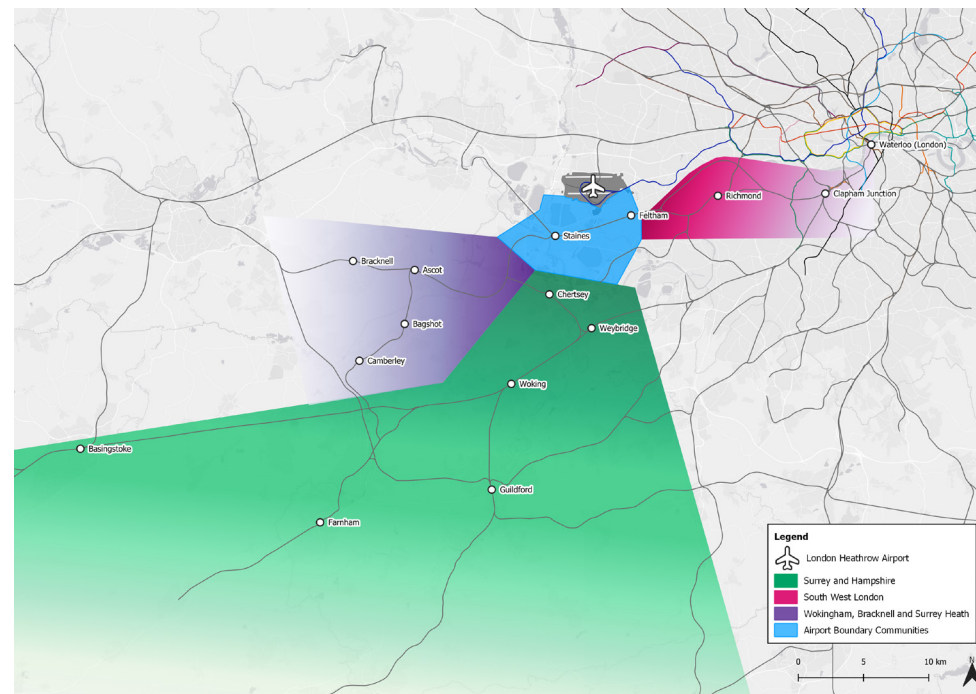
10 SATH has a broad catchment for air passengers and airport staff

In discussion with stakeholders, we have identified four key demand markets which could be served by a southern access scheme. Scheme options need to identify how each of these markets can be served: for some it may be via an interchange, while some may be better served by a direct service. Where a trade-off is necessary due to capacity or financial constraints, it must be led by the evidence, and options for future adaption and expansion should be included.

These trade-offs need to be made clear, and a phased approach to delivery may be best, where a core scheme is put in place allowing a large share of the benefits to be delivered in an early phase, with an allowance for flexibility and expansion to serve future markets. Another key consideration should be the potential for utilising different modes for different markets on the same infrastructure corridor. Heavy rail, for example, might suit passengers from South East London, Surrey, and Hampshire markets, but for communities closer to the airport a more frequent and localised option might be more appropriate.

We have identified the potential markets of annual passengers trips and the number of workers employed at the airport (using any modes), though it is not expected that all of these passengers and workers would switch to rail.

We have identified below the potential markets in terms of annual passengers trips and the number of workers employed at the airport from each catchment (using any modes), though it would not be expected that all of these passengers and workers would switch to rail. New links can also change the share of passengers each airport attracts.



Market 1: North Surrey and West Hounslow

Employee market: 4,500 workers
Passenger market: 0.55 mil/year

The communities directly to the south and west of the airport have a particularly high density of workers travelling to and from the airport. These communities suffer adverse impacts such as congestion and noise. These areas could utilise additional connectivity to the airport's transport network, which despite the proximity is relatively inaccessible. Options to improve services here are more diverse with distances to the airport much shorter. There are opportunities to use the scheme to support regeneration, in particular supporting new housing with new stations or upgrades to existing stations.

Market 2: South West London

Employee market: 4,000 workers
Passenger market: 3.2 mil/year

South West and Central London have the highest current passenger demand and provide strategic connections to key interchanges at Clapham Junction and Waterloo. A route via South West London would be a significant benefit to existing users of public transport, who would get much-improved journey times, and would therefore create a large amount of modal shift – it may also attract passengers who currently travel to Gatwick. Schemes serving these markets are less focussed on regeneration but could provide resilience for other rail routes during disruption or closure.

Market 3: Surrey, Hampshire and wider region

Employee market: 2,000 workers
Passenger market: 2.2 mil/year

The wider region to the south includes Surrey and Hampshire. Passengers from here would benefit most from a scheme which included a direct connection to Heathrow from across the region, including Portsmouth and Southampton, with much faster journey times avoiding London. A direct link could offer new direct routes and better service frequency benefiting non-airport users. There are significant amounts of air passengers from the wider region with low levels of public transport use compared to London and the Thames Valley.

Market 4: Wokingham and Bracknell Forest

Employee market: 1,000 workers
Passenger market: 0.6 mil/year

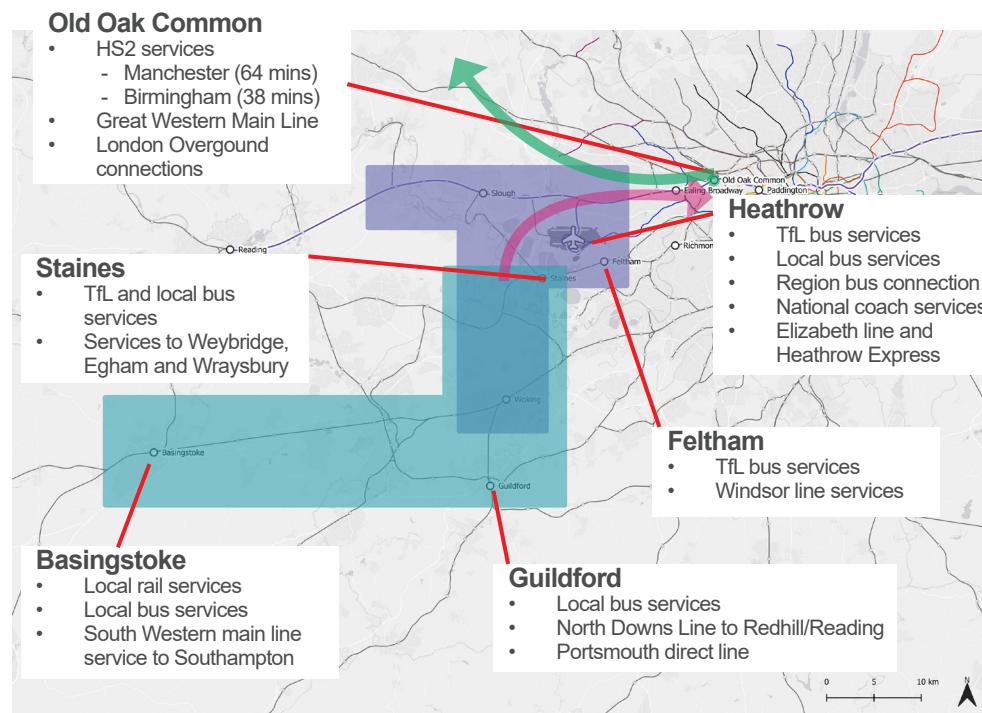
This potential market is smaller as Western Rail Link will provide connections to the Thames Valley region at Slough, Maidenhead, and Reading. However, there are opportunities as services run to both Staines and Feltham where passengers could interchange. These areas have proportionally high numbers of Heathrow employees and passengers, but the overall scale is likely to be small due to the smaller area.

11 SATH can support a range of public transport improvements for non-airport passengers

Heathrow has the potential to play an increasingly important role as a transport interchange in the future, benefitting communities around the airport and removing the need for many passengers to travel via Central London. With new connections from Central London via the Elizabeth line, the Western Rail Link serving Reading, and the existing bus and coach networks, the benefits of a link to the south will open up a significant number of journeys by public transport centred around the airport network.

Southern Access would not only support a multi-modal hub it could potentially deliver local transport improvements outside Heathrow. Depending on the option selected, the scheme could deliver new connectivity within Surrey, new options and capacity for commuters, and direct connection to HS2 – supporting the development of Old Oak Common. By working with local government the link can be fully integrated in local transport plans – with onward connections possible by improved and integrated bus services, walking and cycling, and new services, such as demand responsive transport.

When choosing an option the impact on improving existing connections through greater capacity and opening up new direct journeys and interchange opportunities should be considered alongside the benefits to airport passengers.



Better journeys within Surrey and Hampshire

The regional southern rail options could offer opportunities for significant increases in frequency and new services, in particular between local transport hubs at Basingstoke, Guildford, Woking and Staines.

Potential benefits:

- More direct connections between Basingstoke, Farnborough, Woking, Guildford and Staines
- Improved service levels on the Chertsey line

New commuting options to London

Many of the options provide new commuting options to London, providing a connection via interchange or directly onto services into Paddington or via the Elizabeth line.

Potential benefits:

- Better access from Staines to West London via the Elizabeth line
- Direct services from Guildford/Woking to Paddington

Integrating with HS2 at Old Oak Common

With the pause in development of Crossrail 2, HS2 will be poorly connected to the region in the short-term with no direct rail services and long journey times to reach Euston or Old Oak Common.

Potential benefits:

- Improved national connections such as Guildford/Woking to Manchester reduced from 2 hr 30 mins via Euston to 1hr 40 mins via OOC.
- Staines to Birmingham reduced from 2hours to 1 hour 10 mins via OOC.

Enabling local orbital connection

Increasing the frequency and offering direct connections has been key in supporting increased attractiveness for local rail services. Successes such as London Overground have demonstrated that modal shift is achievable when high-quality and frequent connections are delivered.

Potential benefits:

- Staines to Ealing Broadway reduced from 1 hour and 1 interchange mins to 30 mins direct
- Feltham to Slough reduced from 1 hour to 30 minutes via Terminal 5.

12 Previous work has demonstrated a positive business case for SATH

Proposals for a new link to Heathrow have been assessed, with most previous studies finding a positive business case in both two-runway and three-runway scenarios.

Both Network Rail studies' base assumptions relate to a two-runway airport, with consideration given to various expansion scenarios. Heathrow Southern Railway's initial appraisal shows a Benefit Cost Ratio (BCR) of 6.82, based on Heathrow's 2015 runway capacity and passenger numbers, increasing to 15.44 with a third runway. This is primarily due to the relatively small amount of fixed transport infrastructure required to access significant existing transport at Heathrow. With HS2 now progressing and potential new demand forecasts for rail and air demand, previous work will need to be re-assessed.

Value for money in transport business case terms has been focused on journey time savings for existing public transport passengers. Recent changes to the use of the Green Book have pointed to the importance of the strategic case and this has been laid out by the DfT, as well as local stakeholders. Assessments should focus on the potential transformation benefits the scheme can bring, with a greater focus on valuing the modal shift to sustainable modes and the benefits that this can have on UK carbon targets for 2032 and 2050; improving health and quality of life in the region, and unlocking development potential through step changes in connectivity and service frequency.

Assessments should be developed in a phase by phase way that captures the build out of the various potential component options, rather than look to assess competing schemes. The business case will also need to demonstrate the impacts on existing passengers, as well as looking at a range of background scenarios; in terms of both delivered infrastructure where this is required by the scheme but also different future growth scenarios, both in terms of aviation and background rail growth. It will also be important to assess a range of policy and societal scenarios, including how new charges, such as Heathrow drop-off charges, a London Border charge, and any proposed regeneration schemes, will impact modal shift and demand for travel. In light of COVID-19 and changes to how people are travelling, we need to understand how the project will deliver change under a range of potential futures.

Study	Organisation	Date	Options	BCR range
Southern Rail Access to Heathrow Feasibility Study ¹	Network Rail	Dec 2015	London	1.8 - 16.4
			Surrey	0.3 - 1.0
			Combined	3.9
Southern Rail Access to Heathrow - Modelling to Appraisal Update ²	Network Rail	Mar 2017	London	1.2 - 3.1
			Surrey	0.5 - 1.8
			Combined	2.5
Heathrow Southern Railway ³ (Private promoter)		Apr 2017		6.82 - 15.44

What is a good BCR range?

Rail extension schemes have been approved with a range of BCRs, some schemes (such as Woolwich DLR Extension) have been approved with BCR close to 1 due to their strong strategic case or strong financial case. A case above 2 is considered by the DfT to have a high level of value for money and above 4 is considered very high. A challenge for valuing Heathrow-related schemes has been the uncertainty over demand forecasts with a large difference in passengers and mitigated impacts between the third runway forecasts and the existing two runways. Scheme appraisal generally favours a single case approach, as set down in the transport appraisal guidance. The choice of different values of time has also impacted BCR for airport rail schemes as airport passengers are deemed to have a higher value of time compared to other public transport users.

Regulation of public transport funding.

The Government may also need to review how airport links are funded as current airport regulations do not support the use of landing charges for public transport investment outside of an expansion scenario. A clearer funding mechanism would help national and local governments, the airport, and private sector investors play a greater role in supporting sustainable transport access to Heathrow.

The U.K should look to recent changes in the United States, where changes to the regulation of passenger facility charges have allowed airports to play a greater role in supporting surface access investments in their key markets.

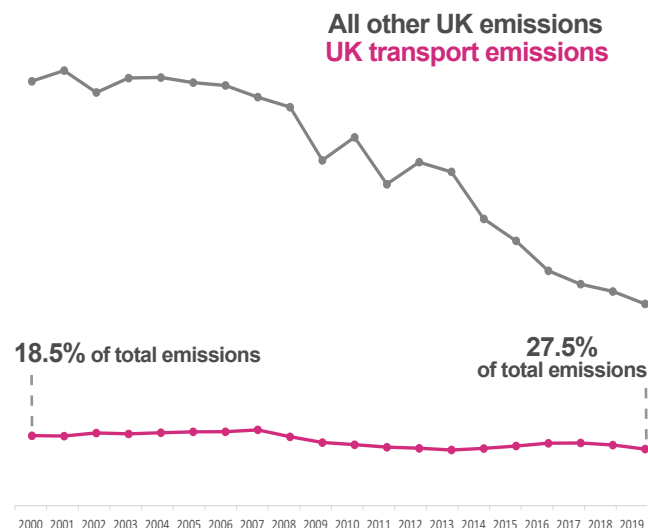
¹ <https://cdn.networkrail.co.uk/wp-content/uploads/2019/04/Southern-Rail-Access-to-Heathrow-Feasibility-Study.pdf>

² <https://www.networkrail.co.uk/wp-content/uploads/2019/04/Southern-Access-to-Heathrow-Modelling-and-Appraisal-Update.pdf>

³ <https://www.railfuture.org.uk/DL1540>

13 SATH can bring positive impacts for people's lives and the environment

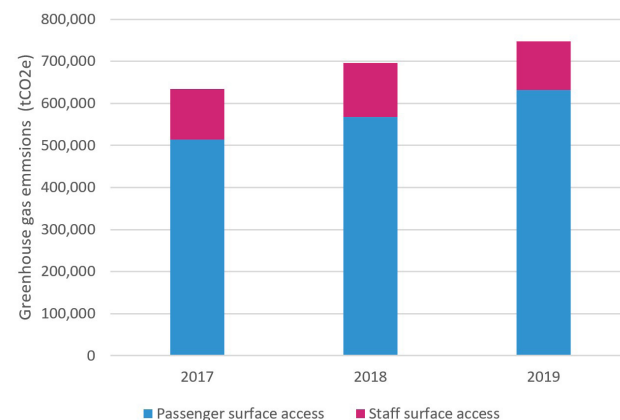
Greenhouse gas emissions in the U.K.



Airports bring positive impacts on local employment levels and wages, and are often a big driver of attracting international businesses. However, airport activity creates negative environmental impacts such as noise, poor air quality, congestion, demand for land, and the segregations they create between adjacent communities.

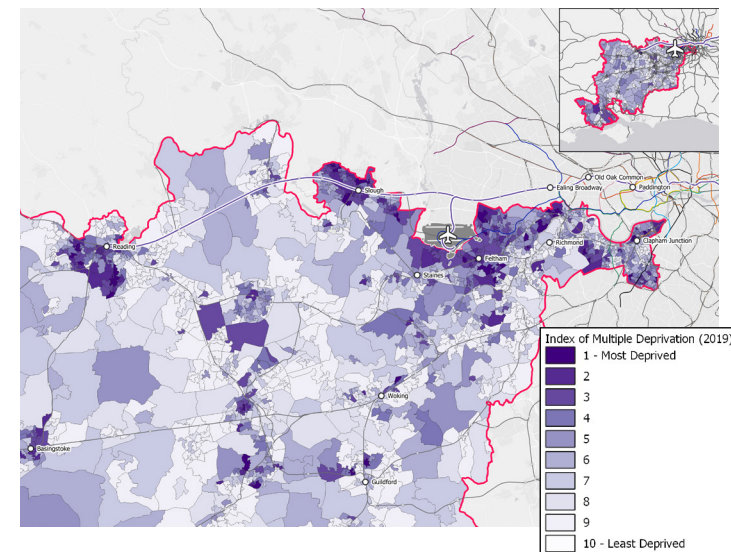
Heathrow Southern Rail Access will not mitigate all these impacts, but it will address some of the key local challenges. Modal shift to public transport will reduce congestion on the Strategic Road Network, addressing air quality issues on routes into the airport, and there is huge potential for new capacity to support housing delivery.

Heathrow surface access emissions



Not all benefits will be related to modal shift from airport passengers; areas across the South East want to decarbonise, but to achieve modal shift they need the higher standards of infrastructure and public services found in major cities. Transport connections between towns in the South East are also needed to develop sustainable local economies and a public transport network which support this. SATH has potential to link areas within the region via the transport hub at the airport and connect other key regional networks such as the North Downs line and mainline services to Hampshire. London has demonstrated how successful orbital rail improvements can bring new passengers to the network and new connections with better frequency, not only in commuting but also for leisure, tourism, and educational purposes, improving the choice for residents.

English indices of deprivation (2019)



Many communities with poorer connections cannot access the significant labour market that exists around the airport without private cars – this is in stark contrast to the areas with good public transport where public transport use is high. Levelling up access by high-quality public transport will open up Heathrow and linked sector job markets across the region to those without private transport.

The Government has launched JETZERO to find ways of reducing emissions from aviation, but there are cost-effective ways to reduce emissions from the surface access element of flying which can be delivered over a shorter time frame. Passengers and commuters travelling to the airport by car emit more carbon than those travelling by public transport, and will continue to do so even as road transport decarbonises.

14 SATH can help Build Back Better and deliver sustainable growth

Case study: Amsterdam Airport City



Many countries around the world have identified the commercial opportunities around airports not only in the area of freight and logistics but also hospitality, commercial, and industrial developments. With high-quality transport links to the airport, developments catalyse on this in a more sustainable way. Amsterdam Airport City is a proposed development adjacent to Amsterdam Airport. The development includes offices, hotels, and logistics. Its explicit selling points are the local national connections available by public transport combined with international connectivity offered by the airport. It has a broad range of sectors operating with international headquarters, tech firms, energy and smart logistics, and aerospace.

Whilst the benefits of modal shift were considered to be key across all stakeholders, there was more divergence in the regeneration benefits within the London Borough of Hounslow, Runnymede, and Spelthorne all seeing huge potential for regeneration as part of a new link. The linking of housing to new stations, or existing stations with increased service levels and new connectivity would provide sustainable developments helping them to meet their local targets.

There is huge economic potential which can be supported through better transport in the area around Heathrow. Currently the agglomeration impacts are not fully realised due to poor connectivity and congestion. By delivering improved access to Heathrow, the Government would be investing in a globally competitive regional economy with high-value global exports supporting the economic growth, which is vital to investments in levelling up the economy.

Case study: Northern Line Extension (NLE)



The NLE between Kennington and Battersea is enabling the regeneration of the Vauxhall, Nine Elms Battersea (VNEB) Opportunity Area in Central London, on the South Bank of the River Thames. Up to 25,000 jobs and 20,000 new homes are expected to be created as a result of the improved transport links and connectivity, with landmark developments such as the Embassy Gardens (centred on the new US Embassy building) under construction. The extension, which is scheduled to be completed in Autumn 2021, has been funded mostly by private developer contributions and business rates generated and retained within a newly formed Enterprise Zone.

The links between transport, connectivity, and growth are well established with international and national connectivity listed by companies as a key reason why they locate in regions around the airport. However, companies also want to attract a wide range of staff, some of whom may not have access to a car; and in many cases smaller towns are losing business to larger towns and cities with greater regional connections.

New links and improved capacity provide an opportunity for local authorities in the region to deliver sustainable growth-focused development schemes which deliver vital housing for the region and provide commercial opportunities for new and existing businesses.

Case study: Barking Riverside extension



The Barking Riverside extension will add 4.5km to the London Overground Gospel Oak to Barking line and take it from Barking to a new station at Barking Riverside. The extension is just one of several transport measures aimed at serving the Barking Riverside area – the largest brownfield development site in East London, with planning permission for up to 10,800 new homes, as well as healthcare, shopping, community and leisure facilities.

The extension, which is expected to be fully operational in Autumn 2022, has been funded mostly by private developers, with the remainder of the total funding package being met through TfL's Growth Fund.

Freight is a substantial component of transport creation by Heathrow and of the related industry around the airport. To date, rail at the airport has been focused on passenger movement. However, with the right infrastructure and services, rail freight services could be delivered which better suit the requirements of the air freight market. This could follow the service models currently being proposed from Rail Operations UK Ltd for the West Midlands to Scotland and the London Gateway port to London Liverpool Street. With support from the Government and industry, this could help to lower the congestion and air quality impacts of transporting the vital imports and exports via Heathrow.

2.3 What we need to do to deliver SATH



15 The business case for SATH needs to be taken through the appropriate process

Decisions about transport investment in the UK take place in three phases, shown below. Each business case builds upon the last, as evidence is accumulated and the project proposal scoped in further detail. Between each phase is an investment gateway where a DfT Investment Committee makes recommendations to the Minister about whether to proceed and any amendments necessary. The total size of the project will determine the level of government scrutiny at each gateway - larger projects need additional sign off from Treasury and the Major Projects Authority.

Phase 1: Strategic Outline Business Case (SOBC)

The purpose of this first phase is to establish the need for the proposed project and alignment with wider Government strategic ambitions. The Strategic Outline Business Case, the output of this phase, should define the scope of the project, establish the need, outline options, identify and analyse stakeholders, and define measurements of success. The DfT is currently undertaking the first three cases, and subject to agreement, the subsequent cases will be developed for more detailed proposals. As the cases become established, a more detailed scheme and a service proposal will also need to be produced.

Phase 2: Outline Business Case (OBC)

After obtaining initial approval to proceed, Phase 2 focuses on a detailed assessment of the options to find the best solution. Full economic and financial appraisals take place during this phase and a detailed cost-benefit analysis is conducted on each option, before selecting a preferred option.

Phase 3: Full Business Case (FBC)

A Full Business Case builds on and confirms previous phases of work, and sets out plans for implementation, including the monitoring and evaluation of stated benefits, proposed contract management, and benefit realisation plans.

Development Consent Order (DCO)

This is a statutory order which provides consent for Nationally Significant Infrastructure Projects (NSIPs), meaning that other consents, such as planning permission, listed building consent, and compulsory purchase orders are not required. Applications are examined by the Planning Inspectorate and decided by the Secretary of State for Transport.

DfT's Five Case Model Approach

The Strategic Case	demonstrate the case for change that fits with wider public policy objectives
The Economic Case	demonstrate value for money
The Commercial Case	demonstrate that the proposal is commercially viable
The Financial Case	demonstrate the proposal is financially affordable
The Management Case	demonstrate the proposal is achievable



16 We want to work with the DfT to agree a funding and delivery model for SATH

► Examples of project funding

There is considerable development that needs to take place alongside the official business cases to optimise the scheme. Stakeholders have proposed the following steps to develop a holistic approach to the scheme that both maximises SATH potential and treats schemes developed to date fairly. This development work does not have to be solely done by the DfT and could be developed through joint working with the airport, local authorities, and investors. Projects across the U.K. have been developed by devolved authorities, but without a single entity covering the area in question there is no existing group to progress the scheme.

Propose a funding and delivery model

The market studies led to a set of funding proposals designed to support a private sector-led scheme, but in discussion with stakeholders a diverse range of funding options could be pursued to create a diverse funding base. Alternative options stakeholders considered were:

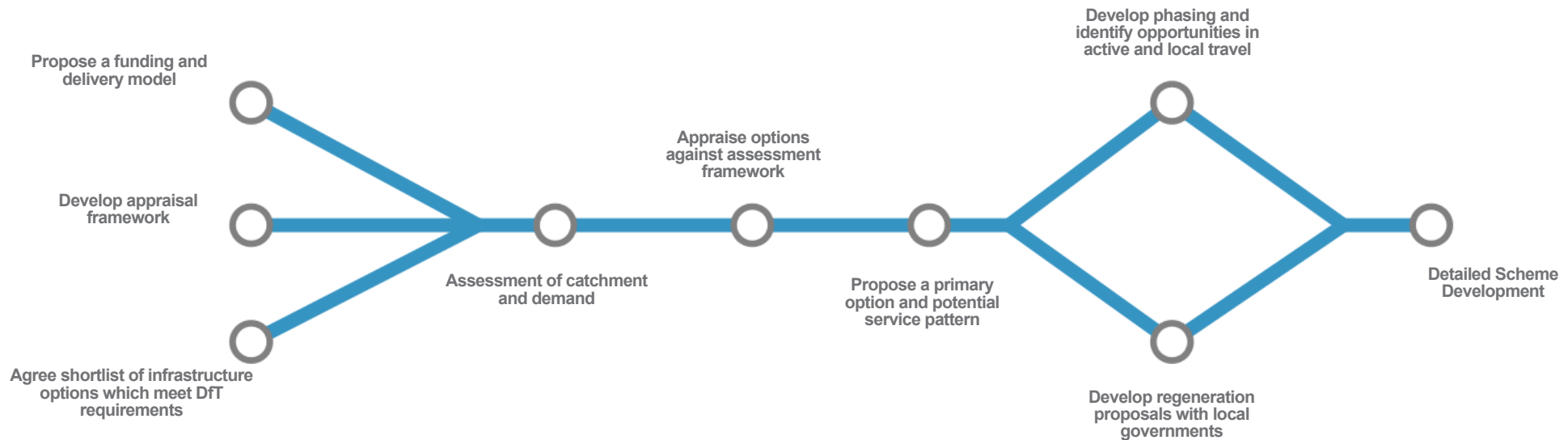
- Taxation of land value uplift in areas of improved connections
- Developer contributions for regeneration schemes
- Reviewing CAA policy in regard to the environment, to allow greater contribution from airlines and passengers to sustainable transport
- Hypothecation of property taxation
- Hypothecation of road user charging revenues
- Airport supplement on airport rail fares (as used in Brussels Airport)

The DfT should develop a bespoke mechanism which fits the specific nature of schemes and the nature of proposals.

Stakeholders are keen that the DfT establishes a delivery model which captures the private sector effectively to both drive efficiency in delivery, and also provides funding and financing. However, it was made clear that input from local government and stakeholders would be vital to ensuring the optimal scheme was developed and also delivered. This proposed delivery model must therefore consider options which maximise the wider linked regeneration benefits and support local economic growth through integration with local plans.

	Project description	How it is funded
Crossrail	New high capacity east-west railway between Paddington in the west and Stratford and Woolwich in the east; linking services from Reading, Heathrow and Shenfield.	Government Grant Infrastructure Levy Transport authority Commercial property owners Property developers
Northern Line Extension	2.5km underground extension with two stations to support 16,000 homes. 25 years of property taxes from within the Enterprise Zone used to finance the project.	Commercial property owners Property developers Future tax revenues
East-West Rail	Mixture of new and upgraded railway built in stages connecting Oxford to Cambridge. East West Rail Alliance, Network Rail and the DfT established the East West Rail company. It is primarily funded by the DfT but earlier sections were funded by the rail operator with support from local growth funds.	Government grant Transport operators
Western Rail access to Heathrow	5km of track partially in tunnel linking Terminal 5 with the Great Western Main Line allowing a 4tph service to Heathrow from the west. Current timeline proposes a DCO in 2021 subject to a funding agreement between Heathrow and the Government.	Airport contribution Central government
Barking Riverside Extension	4.5 km of new railway line and an additional station to facilitate extension of London Overground services to Barking Riverside to facilitate 10,000 additional homes. To be completed in 2021.	Property developers Transport authority
Brussels Airport Diabolo	A new chord linking Brussels Airport with the new Brussels – Antwerp main line allowing services to operate via the airport in both directions, converting the airport from a terminus into a through station.	Government grant Hypothecated supplement on all rail fares (€5.50/passenger)

17 Our proposed action plan for Government to develop a robust single option



Develop appraisal framework

With the different markets, challenges, and regeneration identified, an assessment framework needs to be developed which can assess the relative merits of the scheme in a fair and consistent manner. This assessment should encompass the wide range of benefits that stakeholders and the Department for Transport have identified.

Agree on a short list of options

The Department should agree a short list of distinct options and components to be appraised in the short-term which meet the minimum requirements of the project. Currently there is no clear list of projects which are being assessed, or how proposals are being selected.

Assess catchment and demand

It is clear that SATH is a complex transport project with a complex potential market across air passengers, airport workers, and the wider transport market. This should look to understand the true market potential, including dynamic impact, such as airport choice, employee catchments, and potential for modal shift for a range of local and regional trips, through connections with HS2 and the onward transport network at Heathrow.

Appraise options against assessment framework

After producing an appraisal framework, a good understanding of potential demand markets, and a short list of deliverable options, it will be possible to appraise and evaluate the proposals as either individual options or components of a final scheme.

Propose a primary option and service pattern

There needs to be a clear roadmap for how and when a single option, or phase of options, will be developed. This roadmap should be developed through the appraisal framework and the catchment and demand assessment, and form the basis of consultation with stakeholders and the public.

Develop phasing and identify opportunities in active and local travel

Once a primary route is chosen, the developer should work with local government to maximise the impacts of the scheme through local schemes which can support SATH, particularly in active and public transport, to widen the scheme's impact. This could include opportunities utilising new technology, such as demand responsive transport.

Develop regeneration proposals with local government

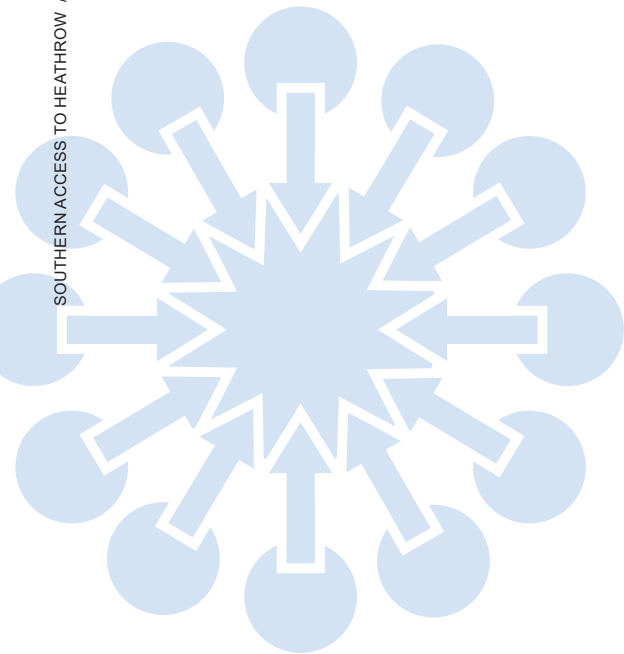
It will be key that local governments play a role in ensuring that the scheme delivers local development opportunities and supports their strategic plans. Objectives such as providing housing and commercial developments which can be fully integrated into the design of the scheme need an appropriate mechanism.

Finalise detailed scheme development

The next phase is to finalise the options to a complete proposal encompassing the route option, supporting schemes combined with funding, delivery proposals, and service models.

Heathrow Strategic Planning Group

SOUTHERN ACCESS TO HEATHROW / POSITION PAPER



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