



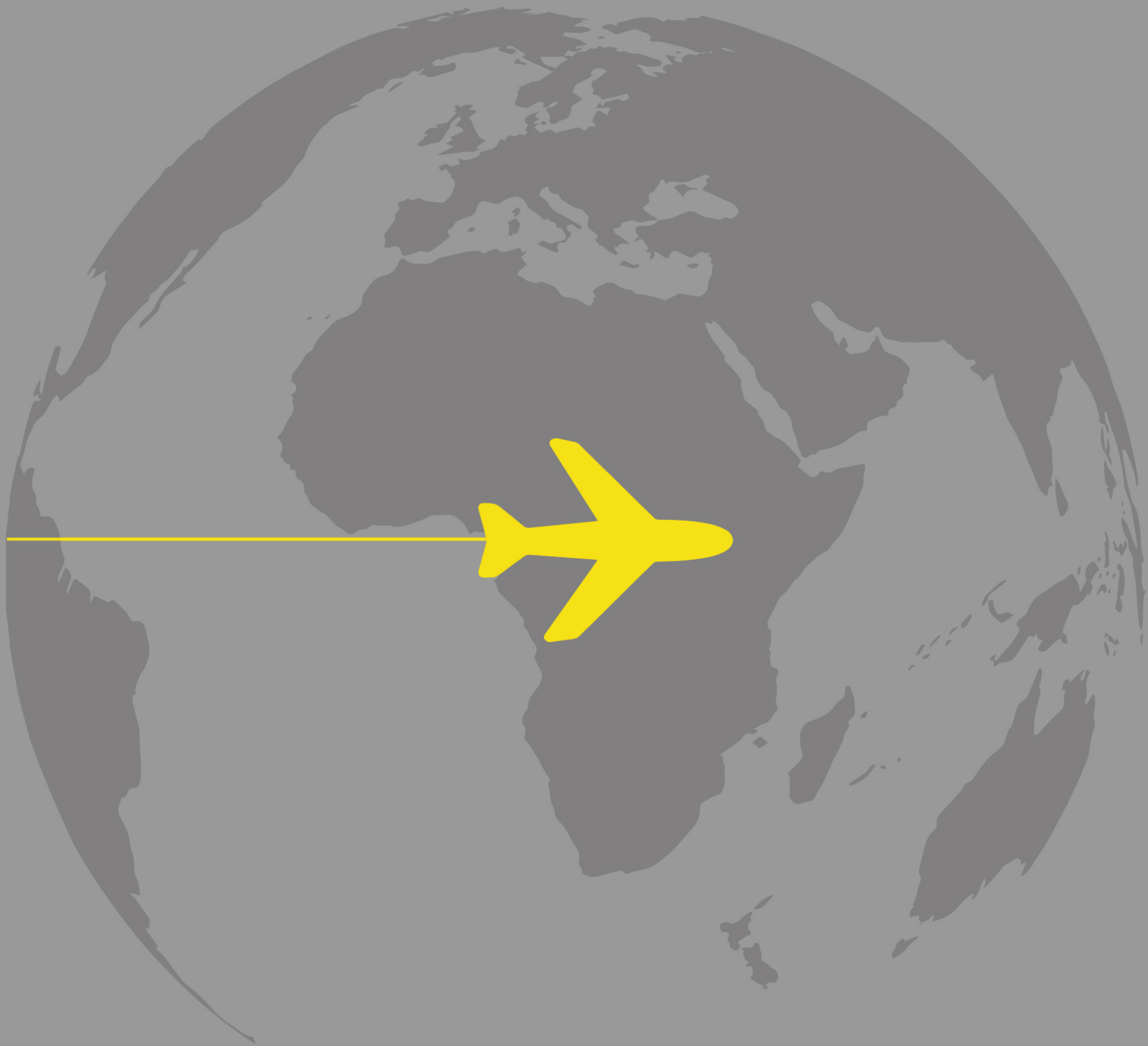
Leeds Bradford[®]
Airport

Route to 2030

Strategic Development Plan

Surface Access Strategy

March 2017



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1 Introduction

Good transport connections are important to the effective functioning of any airport. All air transport trips start and end with a connection to the point of departure and arrival, whatever their purpose. Similarly, all airport and associated business employees require access to the site. So, the provision of surface access infrastructure that supports the connections needed by travellers and employees is an important part of any growth strategy.

Leeds Bradford Airport (LBA) is the international gateway for the Leeds City Region, and much of neighbouring North Yorkshire. It has a crucial role to play in supporting the economic growth potential of the City Region and beyond, as well as satisfying the increasing demand for leisure trips from City Region residents, and those who are drawn to the Airport due to its range of destinations.

The Airport currently serves 3.6 million passengers per annum (mppa), of which approximately 69% are from within the Leeds City Region. The Airport has performed well over the last five years with passenger growth of 3.8%, compared to other adjacent airports, such as Doncaster Sheffield and East Midlands. However, LBA captured only 32% of the short haul and 4% of the long haul demand generated by Yorkshire and the Humber area. Adding business growth potential, this represents a huge opportunity for local growth, if the right routes and appropriate infrastructure are offered.

The Airport is continuing to grow, and the Government's own UK Aviation Forecasts (January 2013) state that by 2030, passenger numbers could increase by 114% to 7.1 mppa. This supports the positioning of the Airport as an economic hub as well as an international gateway, and has led to the agreed position that LBA has great potential to support the economic objectives of the City Region if individual development plans are integrated.

One such plan will be the Airport Surface Access Strategy (ASAS). There is no doubt that surface access infrastructure improvements will be necessary to support an airport of the size forecast by the Department for Transport (DfT). As part of the new integrated planning approach, defining the necessary surface access improvements, in line with other transport improvements being taken forward in the City Region, is a critical part of ensuring that the Airport can play its full role in the growth of the Leeds City Region.

The approach to developing surface access improvements needs to be truly multi-modal, with a recognition of the origins, needs and expectations of all of those who will use the Airport in the future. Again, this multi-modal approach aligns with the development of an integrated transport network for the City Region.

The ASAS complements the LBA Strategic Development Plan (SDP), ensuring there is a joined up approach to airport operations, land use planning and transport. The SDP and the ASAS together provide a clear statement of intent to enable future development of the Airport

to be given due consideration in local planning processes. Together they also provide transparency and aid long term planning for other businesses within the Leeds City Region.

Since 1998, the government has required most airports within the UK to prepare an ASAS. The first ASAS for LBA was produced in 2000, and was compliant with the local and national government objectives at the time. An update of the ASAS was published in 2006 and this took on board the objectives of the 2003 Aviation White Paper, particularly the requirement to increase the proportion of passengers who travel to and from airports by public transport. This version of the ASAS also recognised the link between surface access infrastructure and airport and economic development.

There is now a need to produce a further revised ASAS to sit alongside the SDP for the Airport, as well as the City Region Aviation Strategy, published by the Local Enterprise Partnership (LEP) in Autumn 2013. The SDP will take on board the requirements of the Government's Aviation Policy Framework (March 2013) that fully replaces the 2003 Air Transport White Paper. Furthermore, it will reflect the changes to the planning system introduced by the National Planning Policy Framework and the Planning Act 2008.

The Aviation Policy Framework sets out what the Government expects to see covered in surface access strategies. Accordingly, this ASAS will:

- Outline the strategic context;
- Review the current surface access infrastructure and a snapshot of its usage;
- Identify the drivers of change for airport surface access over the coming years and discuss what impact these drivers may have on demand and behaviour;
- Present a new vision for surface access for the Airport and the development of surface access measures and infrastructure over the short, medium and long term;
- Identify committed/planned and possible surface access improvements both for the Airport and also those that offer the opportunity to provide much improved connectivity between the main settlements in the Leeds City Region;
- Set out challenging and ambitious targets for increasing the proportion of journeys made to the Airport by public transport for both employees and passengers, in order to reduce the carbon and air quality impacts of the Airport;
- Outline the arrangements to oversee implementation of the strategy and how its performance will be measured against the targets in a clear and transparent way.

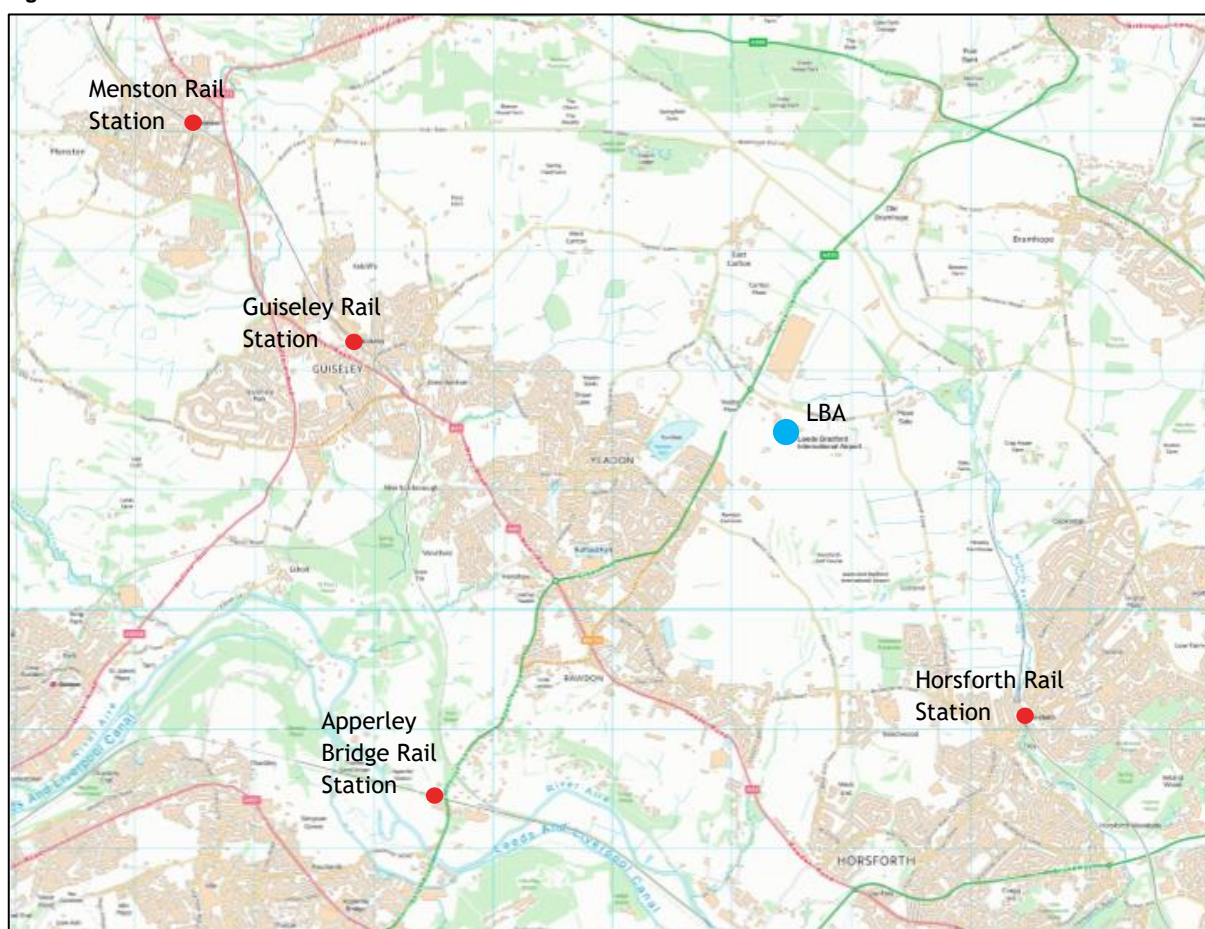
The ASAS will also seek to coordinate with, and influence, local planning and economic strategies so that a collaborative approach is taken to the development of a successful and vibrant airport for the Leeds City Region.

2 Surface Access Infrastructure and Services

2.1 Rail

There are currently no direct rail services to LBA. The nearest railway stations to LBA are Horsforth, Guiseley and Apperley Bridge, as shown in Figure 2.1.

Figure 2.1: Nearest Rail Stations to LBA



Horsforth rail station is 3.0km to the south east of the Airport on the Harrogate Line. A half hourly service is provided between Leeds and Harrogate with alternate trains travelling to York. Train services on the Harrogate Line operate between 0600 and midnight Monday to Saturday, and between 0920 and midnight on Sundays. Car parking and taxi facilities at Horsforth are limited and no public transport services link the station to the Airport. Bus service 757 from Leeds to the Airport provides a service between the Airport and New Road Side in Horsforth where further changes can be made with service(s) 31 and 32 to connect with Horsforth railway station (Monday to Saturday, daytime).

Guiseley rail station is 3.7km west of the Airport on the Wharfedale Line. This station is served by services between Leeds and Ilkley and Bradford and Ilkley, both of which operate half hourly. Train services on the Wharfedale Line operate between 0600 and midnight Monday to Saturday, and between 0920 and midnight on Sundays. Again, car parking and taxi facilities are constrained, but there is a direct bus link via the 737 Bradford-Airport bus from the Airport to Guiseley.

Apperley Bridge rail station opened in December 2015 and is 4.1km south west of the Airport on the Airedale Line. The new station is served by services between Leeds and Bradford which operate half hourly. Car parking facilities are provided at the station for 300 cars, and there is a direct bus link via the 747 Bradford-Airport bus from the A658 at the end of the station access road.

The nearest mainline rail stations to the Airport are Leeds and Bradford Interchange, both of which are connected to the Airport by direct bus services described in the following section. One of the Bradford services also links to Harrogate, providing an onward link to the mainline rail station at York.

There is also a local bus connection between the Airport and Menston rail station, the next stop to Guiseley on the Wharfedale Line, also shown in Figure 2.1.

2.2 Bus

LBA is served by direct, frequent bus services from Leeds, Bradford, Harrogate and Otley. Services to Bradford and Leeds link the Airport with the national rail network via Bradford Interchange, Leeds and Harrogate rail stations, and connect with long distance coach services at Bradford Interchange and Leeds City bus station. A summary of current bus services serving LBA is set out in Table 2.1. The start times of the 737 and 747 services shown are generally earlier than the start times of other bus services that could connect into them.

The 737, 747 and 757 services were rebranded in April 2014 as the “Flying Tiger” services. The 757 service now operates on an increased frequency offering three rather than two buses per hour between Leeds City Centre, rail and bus stations to the Airport. This service is operated using five new high specification buses that offer seats trimmed in leather, charging points beneath eleven seat pairs, specially designed racks for luggage, free wi-fi and audio/visual next stop announcement facilities. Other Flying Tiger buses operated by Yorkshire Tiger (737/747) have been refurbished - these buses are usually low floor, easily accessible vehicles with additional space for luggage.

Table 2.1: Existing Bus Services to/from LBA

Service Number	Operator	Frequency	Hours of operation	Route
737	Yorkshire Tiger	Daytime: hourly Evenings & Sundays: hourly	Mon to Sun: 0600-2347	Bradford - Shipley - Guiseley - Yeadon - Airport
747	Yorkshire Tiger	Daytime: hourly Evenings & Sundays: hourly	Mon to Sun: 0437-0017	Bradford - Apperley Bridge - Yeadon - Airport - Harrogate
757	Yorkshire Tiger	Daytime: every 20 minutes Evenings: hourly Sundays: every 30 minutes	Mon to Sun: 24 hours	Leeds - Kirkstall - Horsforth - Airport
967	Keighley Bus Company	Daytime: every 30 minutes Evenings & Sundays: hourly*	Mon to Sat: 0646-2345 Sun: 0900-2350	Menston Rail Station - Otley - Pool - Airport * Between Menston Rail Station, Otley and Pool only

All of the buses serving the Airport drop-off and pick-up passengers outside the terminal building (four stands with real time information provided). Table 2.2 presents a summary of typical bus fares for the Flying Tiger services.

Table 2.2: Flying Tiger Bus Service Fares

Journey	Ticket Price	
	Single	Return
Leeds – Airport	£3.80	£6.00
Bradford - Airport	£3.80	£6.00
Harrogate - Airport	£5.20	£8.00

2.3 Coach

There are no direct coach services to the Airport at present. Connections with long distance coach services can be made at Bradford Interchange and Leeds City bus station.

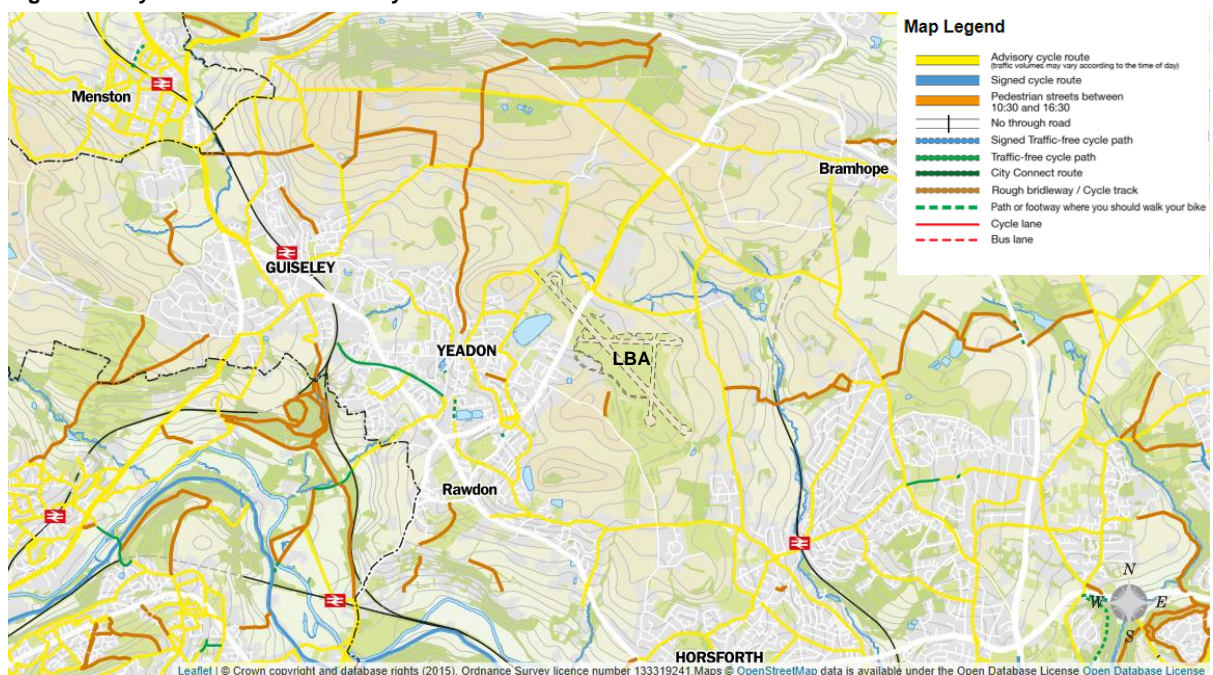
2.4 Walk/Cycle

A footway (approximately 2m width) runs along the southern side of Whitehouse Lane and along the access roads into the airport site. There are zebra crossings within the vicinity of the airport allowing pedestrians to cross internal car park links, along with raised crossing points identifying the presence of pedestrians to drivers. A public footpath skirts the southern boundary of the Airport between the A658 and Scotland Lane.

Yeadon lies to the south west of the airport which is the main residential area from which passengers and staff are likely to walk. Footways are provided along both sides of Victoria Avenue between Bayton Lane and the airport runway tunnel. A signalised pedestrian crossing is located to the south of Glenmere Mount and a further uncontrolled crossing point is located to the south of the runway tunnel. From this point a dedicated footway is located on the eastern side of Victoria Avenue running under the runway and linking into Whitehouse Lane.

A shared pedestrian/cycle way is located along the eastern side of the A658 for the section which passes underneath the airport runway. Provision for cyclists travelling from the south of the airport via the A658 is provided with a short cycle lane to enable cyclists to safely leave the carriageway and cross the road to join the cycleway underneath the airport runway. The cycle lane finishes to the south of Whitehouse Lane and links directly to the footways linking to the airport accesses. An on-road signed cycle route crosses the A658 north of the Airport. Figure 2.2 illustrates the available cycle routes in the area.

Figure 2.2: Cycle Routes in the Vicinity of LBA



Bicycles may be left chained-up in any of the Airport's public car parks. In order to promote cycling as an alternative means of travel, cycle showers and changing facilities have been made available for all employees to use. Covered and secure cycle parking has been provided for 20 cycles and 10 motorcycles located adjacent to the main staff parking area approximately 200m from the Whitehouse Lane/Victoria Avenue roundabout.

2.5 Taxi

Arrow Cars is the official private hire company at LBA. The company has an office just outside the main terminal building, where passengers can book and pay for their taxi in advance. A selection of single taxi fares for journeys to the Airport is presented in Table 2.3.

Table 2.3: Selected Arrow Cars Taxi Fares

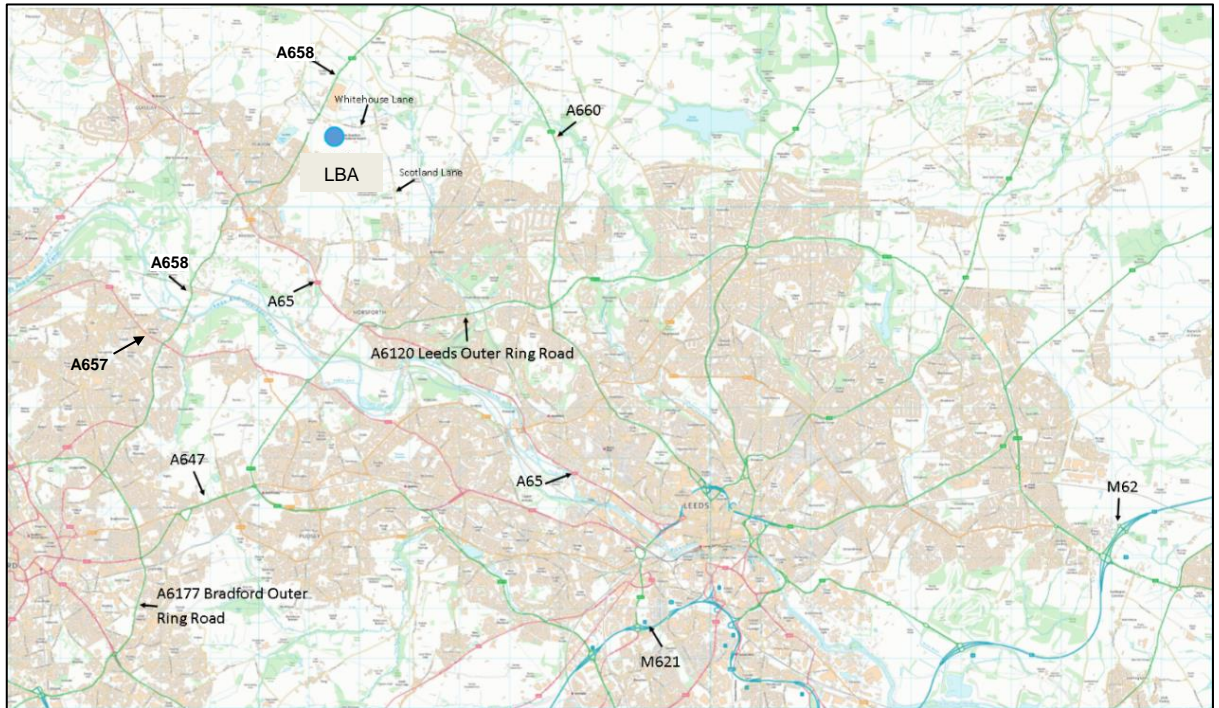
Origin	Typical Single Fare
Bradford	£23.00
Harrogate	£27.30
Halifax	£35.30
Huddersfield	£42.20
Leeds	£21.80
Wakefield	£40.00
York	£60.90

Other taxi companies (both Hackney carriage and other private hire companies) can also use the Airport, dropping off and picking up passengers at the terminal front, but these companies cannot actively seek business/ply for hire at the Airport. It should be noted a parking fee is charged for cars dropping-off and picking-up passengers at the terminal front and this includes taxis.

2.6 Car

Highway access to the Airport can be gained from the national motorway network (M62, the M1, or the A1(M)) by using either the Leeds Outer Ring Road (A6120), and the local road network surrounding the Airport (A658, A6177 and the A65) as shown in Figure 2.3 overleaf.

Figure 2.3: LBA Highway Access Links



The Airport is primarily accessed via Whitehouse Lane, from a roundabout on the A658, to the west of the Airport. The access road comprises a lit single carriageway. It is also possible to access the Airport via Scotland Lane to the east. On average, 82% use the A658 to access the Airport, with the remaining 18% using Scotland Lane.

Many of the routes that provide access to the Airport are congested, particularly during the peak periods and especially the AM peak period between 0730 and 0930. Average speeds on some of the routes are less than 10mph, specifically the radial corridors towards Leeds and Bradford City Centres. Parts of the M62 and M1 motorways are also congested, even though speeds are generally higher.

2.7 Car Parking

There are numerous on-site car parking facilities at the Airport, as shown in Figure 2.4 overleaf. The existing on-site car parking provision at the Airport is summarised in Table 2.4. 91 of the spaces are specifically for use by disabled travellers.

Not all car parks are used throughout the year – the more remote long stay car parks tend to be opened up as demand requires in the peak summer period.

Table 2.4: Existing On-Site Car Parking Provision at LBA

Car Parking Area	Total Spaces
Premium Short Stay and Yorkshire Premier Club	169
Terminal Frontage	155
Short Stay 1 & Business	300
Meet and Greet	564
Short Stay 2 & Mid Stay	648
Free One Hour Zone	48
Long Stay 1	1702
Long Stay 2	992
Long Stay 3	952
Total	5,530

Figure 2.4: Location of Existing On-Site Car Parks at LBA



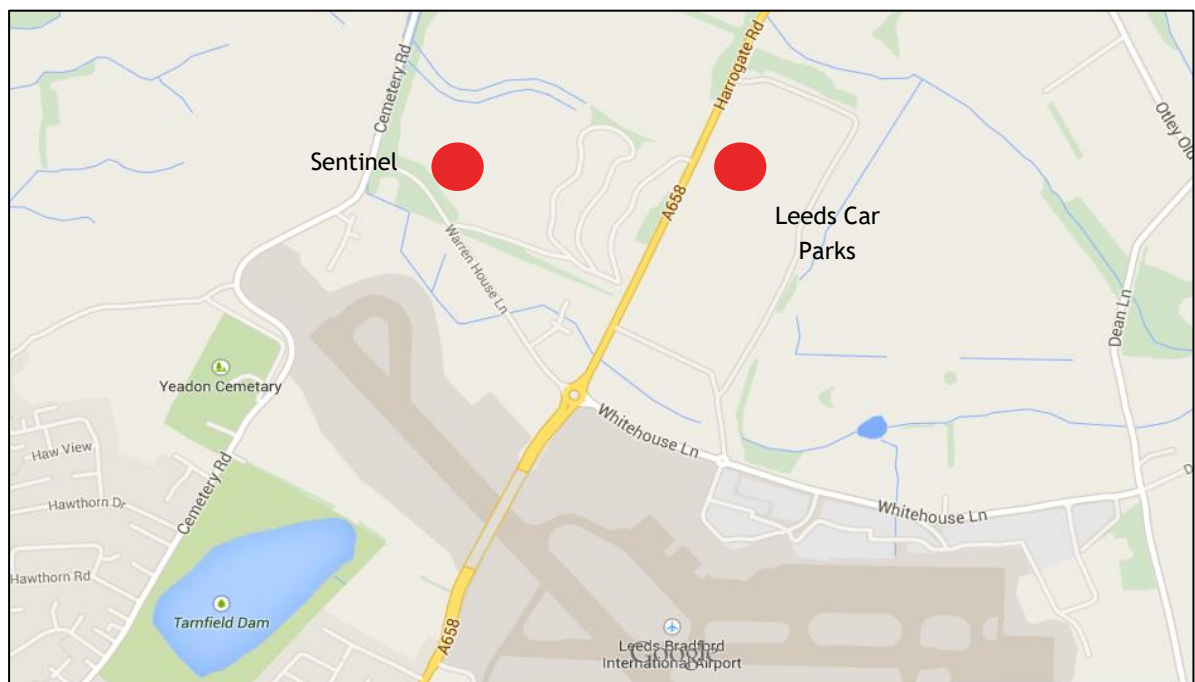
A parking fee is charged for cars dropping-off and picking-up passengers at the terminal front. Free drop-off and pick-up provision is available for up to an hour in the 1 hour free zone located next to the short stay/mid stay car park, with a free shuttle bus to the terminal.

There is an issue with drop-off occurring on Whitehouse Lane, however the 1 hour free zone was introduced to help address this and LBA is working with Leeds City Council to explore further possible measures.

The majority of staff parking is accommodated in dedicated areas, marked 'Authorised Vehicles Only' on Figure 2.4, and in other areas to the west of the terminal building. To encourage car sharing, 14 preferential, more convenient, car parking spaces for car sharers have also been provided for staff.

There are also two off-site car parks offering parking for the Airport, with shuttle buses provided to the terminal building (see Figure 2.5). Current planning permissions across both sites provide an additional 4,542 spaces, although 500 of these spaces are subject to a temporary permission that is due to expire in 2020.

Figure 2.5: Location of Off Airport Car Parks



The costs for both on-site and off-site car parks varies throughout the year, and depend on the advanced nature of any booking as well as the level of service provided alongside the actual parking space.

A Car Parking Delivery Plan has been developed by LBA to support the ASAS to forecast what car parking need may be over the period of the SDP, and where such need could be accommodated in line with the sustainable growth of the Airport. It is intended to be a working document, revised in line with changing circumstances, updated baseline data and planning policy, on an annual basis.

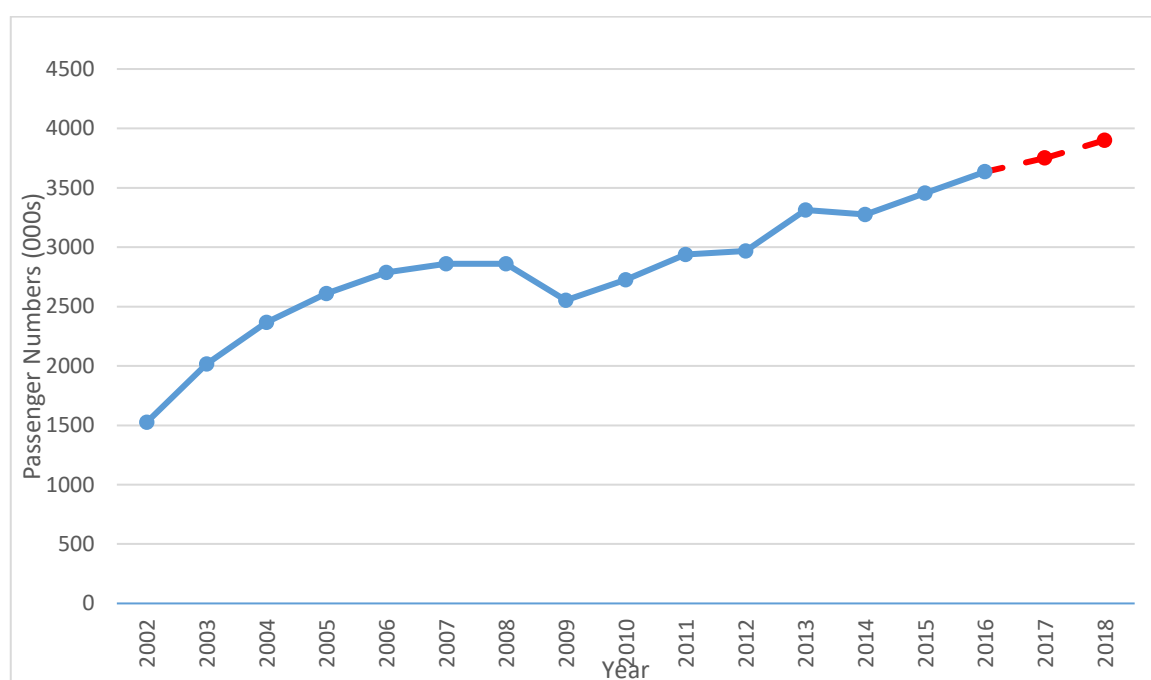
Using the timeframes of the SDP, the Car Parking Delivery Plan identifies a potential shortfall in long stay spaces by 2024 and a further shortfall in both long stay and short stay spaces by 2030, based on passenger demand forecasts and mode share assumptions.

3 Surface Access Trends and Usage

3.1 Airport Passengers

The Airport currently serves 3.6 mppa. Figure 3.1 illustrates how passenger numbers have changed over time and how they are forecast to grow in the short term. Long term DfT central case demand forecasts show passenger numbers could reach 8.4 mppa by 2050, with 6.4 mppa by 2030 (7.1 mppa under the high forecast scenario).

Figure 3.1: LBA Passenger Numbers – Historic Trends and Future Forecasts (CAA data)



3.1.1 Passenger Origins

Approximately 69% of passengers come from within the Leeds City Region, with approximately 86% from the wider Yorkshire and the Humber area.

Within the Yorkshire and Humber area, Table 3.1 indicates that nearly 59% of passengers using the Airport are from West Yorkshire (primarily Leeds and Bradford), and that just over a quarter of passengers are from North Yorkshire (primarily Harrogate District and City of York).

Table 3.1: LBA Catchment by Yorkshire and Humber Area (CAA 2014 data)

District	2014 Passenger Numbers (%)
East Riding	7.3
Lincolnshire	1.7
North Yorkshire	26.1
South Yorkshire	6.2
West Yorkshire	58.6

3.1.2 Passenger Mode Share

Passenger mode share has been monitored on an annual basis through terminal frontage forecourt surveys which record the number of passengers and mode used to travel to the Airport within a one week period each August. The percentage of air passengers using each mode of surface transport over the last ten year period is shown in Table 3.2 below.

Table 3.2: Passenger Mode Share Breakdown (Terminal Frontage Surveys)

Mode	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Private Car	56.5%	55.5%	60.0%	62.4%	65.3%	63.9%	60.5%	56.3%	60.0%	61.8%
Taxi	19.2%	19.7%	17.5%	15.4%	12.4%	11.8%	11.7%	14.5%	12.5%	12.1%
Minibus/ Coach	9.1%	8.3%	8.5%	8.8%	8.0%	8.5%	10.0%	10.6%	8.0%	8.1%
Public Service Bus	6.3%	6.2%	5.5%	6.4%	6.6%	6.9%	5.8%	5.1%	5.7%	5.4%
Off-site Car Park	9.0%	10.3%	8.5%	7.0%	7.8%	8.9%	12.0%	13.4%	13.7%	12.4%
Private Car + Off-site Car Park	65.5%	65.8%	68.5%	69.4%	73.1%	72.8%	72.5%	69.7%	73.7%	74.2%

The table illustrates that the private car has remained the dominant mode for accessing the Airport with some fluctuations in this mode share over time, noting that private car usage (including trips to off-site car parks) was at its highest level over the last ten years in 2016.

Taxis remain a popular choice for accessing the Airport, and the most recent surveys indicate their usage has increased a little in recent years after a reduction between 2011 and 2013.

Public service bus mode share was generally above 6% for much of the period between 2007 and 2012, but in the last four years, bus use has dropped.

The share of both minibuss and off-site car parks is generally highest over the last four years (although minibuss use did show a reduction back to previous levels in 2015 and 2016).

According to CAA data (see Table 3.3), Liverpool, Manchester and Birmingham airports have a higher percentage of trips made by public transport modes than LBA. LBA performs slightly better than East Midlands and Doncaster Sheffield airports. For Liverpool Airport, the opening of Liverpool South Parkway rail station in 2006 and regular bus services to and from the airport boosted public transport mode share, whilst Manchester and Birmingham (being significantly larger airports) benefit from direct rail links and multi-modal transport interchanges.

The higher public transport mode share for other airports demonstrates the potential to increase public transport mode share at LBA and suggests that LBA needs to continue to make improvements to surface access to reduce the private transport mode share in line with the principles of the previous ASAS.

Table 3.3: Modes of Transport Used at 2014 Survey Airports (CAA 2014 data)

Mode	Birmingham	East Midlands	Liverpool	Manchester	Leeds Bradford	Doncaster
Private	76.5	92.4	79.3	83.5	88.5	90.8
Public	22.7	7.4	20.3	16.2	11.3	9.0
Other	0.9	0.3	0.4	0.2	0.1	0.2

Private = Private car, hire car and taxi

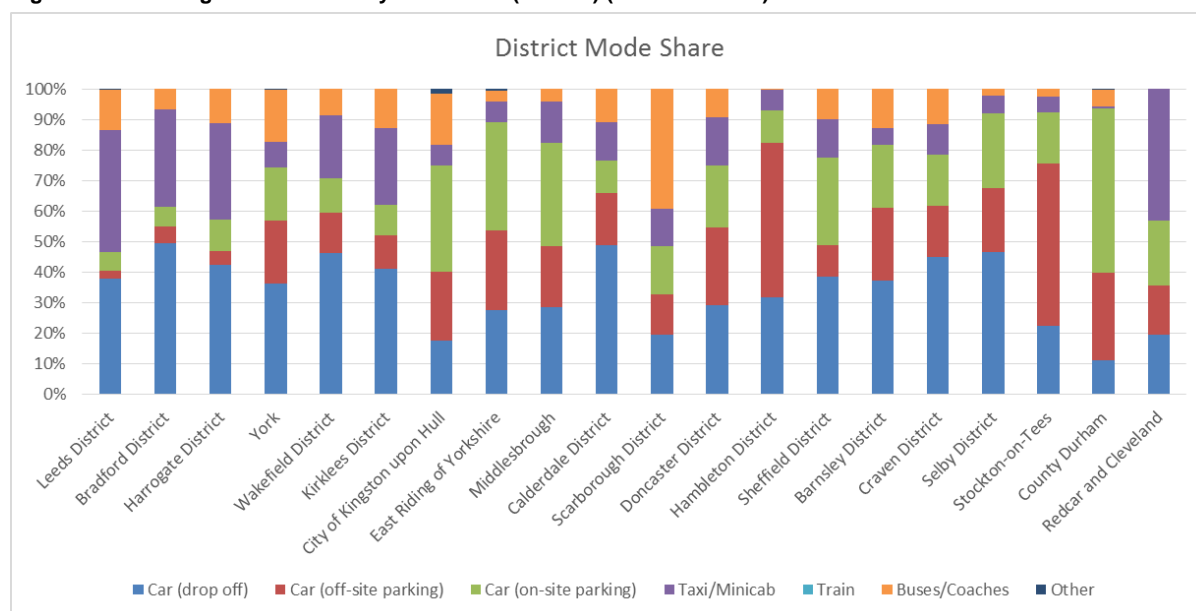
Public = Public transport

3.1.3 Mode Share by Passenger Origin

Passenger mode share varies by catchment area, reflecting both the profile of the passengers and the transport options available in each area.

Figure 3.2 shows the mode share data at district level for the top 20 districts. Taxi use is unsurprisingly strong in Leeds, Bradford and Harrogate districts given that the proximity of the Airport that makes this a more affordable option. However, it should be noted that taxis (and private car pick up and drop off trips – known as “kiss and fly”) generate four vehicle trips per return air trip, in contrast to two trips when passengers park at the Airport or use an off-site car park. Taxi use declines for those travelling from districts located further away from the Airport.

Figure 3.2: Passenger Mode Share by Catchment (District) (CAA 2014 data)



Off-site car parking appears to be utilised more by those passengers travelling from districts further away from the Airport, and has a high proportion of use in districts with lower bus and coach mode shares, such as East Riding of Yorkshire and districts within North Yorkshire. These areas also tend to be those which are more rural in nature and consequently are less well connected by bus and coach services.

Bus and coach mode share is higher for trips from Hull, York and Scarborough. This may be related to the direct and more frequent train and express bus/coach links between these origins and Leeds, with passengers transferring to local service buses for the last part of their journey to the Airport.

3.1.4 Mode Share by Journey Purpose

Mode choice also varies by journey purpose. For example, the CAA data in Figure 3.3 shows that the majority of business passengers using LBA access the Airport by taxi (39%) although car drop-offs and on-site car parks are also important modes for business passengers (44% combined).

The 1% mode share indicated for “Other” relates to walk trips or another unspecified mode, with a proportion of these trips associated with businesses located at the Airport.

Figure 3.3: Business Passenger Mode Share (CAA 2014 data)

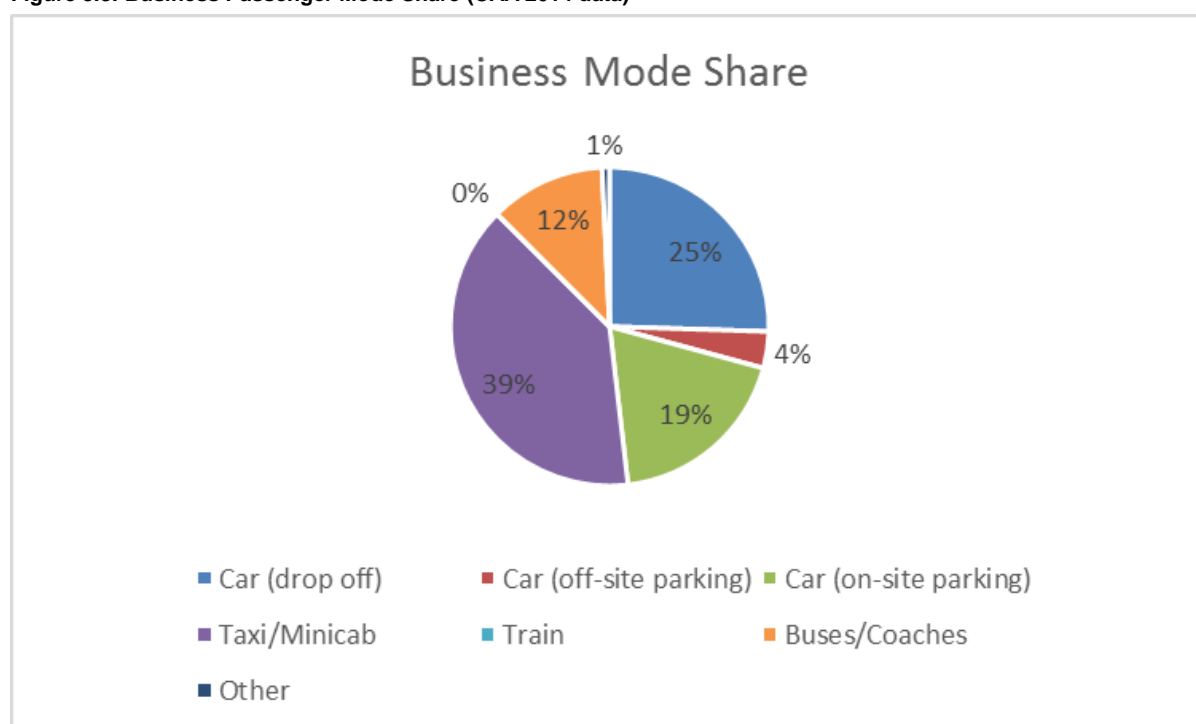
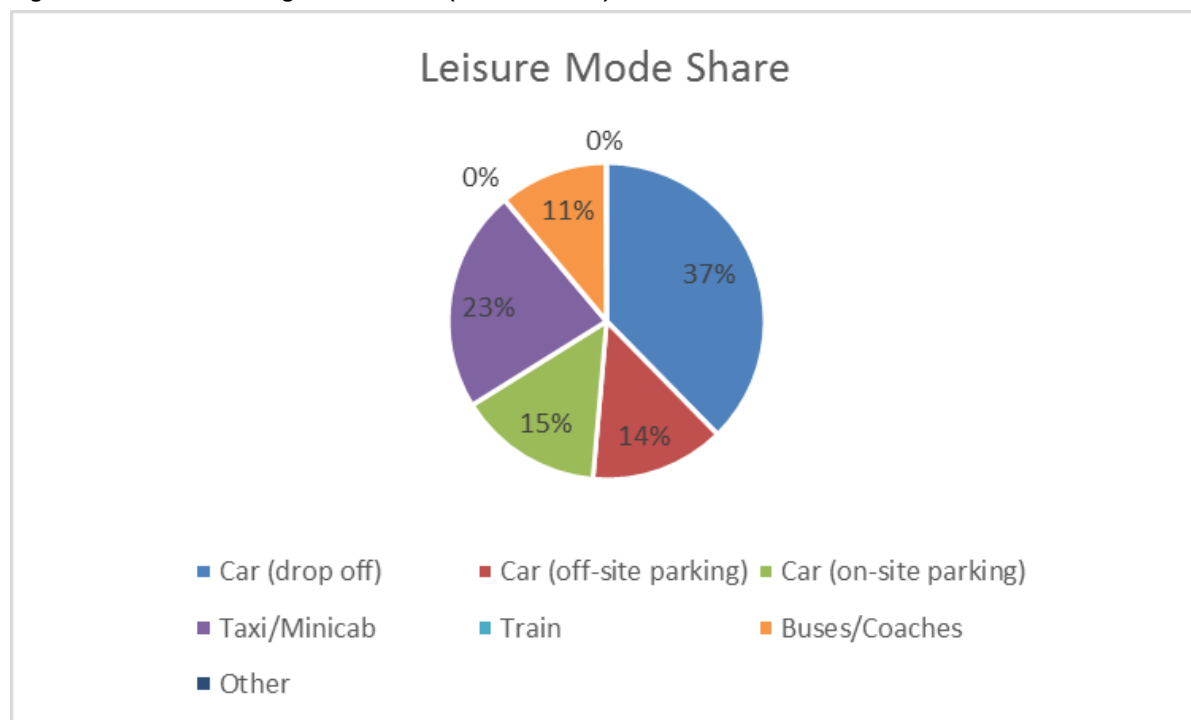


Figure 3.4 indicates that the majority of leisure passengers using LBA tend to be dropped off by car (37%) although taxis and on-site parking are also important (38% combined).

Off-site parking is less important for business passengers than leisure passengers although the levels of bus/coach travel are not dissimilar between leisure and business passengers.

Figure 3.4: Leisure Passenger Mode Share (CAA 2014 data)



3.2 Airport Employees

The Airport is a seasonal operation and as such the numbers of employees varies throughout the year. There are approximately 1,500 (winter) to 2,700 (summer) people currently employed at the Airport, with jobs being spread across a wide variety of companies, including the Airport Company, the airlines and the service providers within the Airport. The Airport Company itself currently employs 384 staff.

LBA's Travel Plan is a vital component of the airport's overall transport strategy. It was first produced in 2009 and was updated in 2013. The Travel Plan sets out a series of measures and actions that will be implemented to influence travel behaviour, many of which are focused on employee travel. Table 3.4 provides a summary of selected measures that are included within the latest version that seek to influence employee mode choice.

Table 3.4: Selected LBA Travel Plan Measures Summary (2013)

Topic	Measure
Information Provision	Employee Welcome Packs
Walking	New footways and pedestrian facilities to be provided in the future will be designed to the appropriate standards
	The health benefits of walking will be promoted with information and advice regarding safe pedestrian routes to and from the airport being provided
Cycling	Set up a Bicycle User Group to promote cycling to/from the airport
	Promotion of events offered by Go:Cycling, including adult cycle training and bike maintenance
Public Transport	Further publicising of the discounted Metrocard offer
Reducing the Need to Travel	Employers will be encouraged to reduce the need for their employees to travel by supporting home working, flexible working conditions and promoting video and tele-conferencing where applicable
Personalised Travel Planning	Provision of Personalised Travel Planning for all staff
Monitoring	Annual staff survey data to be collected and analysed to identify existing travel to work patterns

3.2.1 Employee Origins

Figures 3.5 and 3.6 overleaf illustrate the location of employee residence based upon a sample of data from staff surveys undertaken by LBA. Figure 3.5 shows that employees come from a wide catchment area, although most live within West and North Yorkshire. A small number of employees live as far afield as Southport, Hull, and Stockton-on-Tees. These tend to be specialist professional staff or flight crew. The majority of Airport employees live in Leeds, Bradford, Harrogate and York, as shown in more detail in Figure 3.6.

Figure 3.5: LBA Employee Catchment

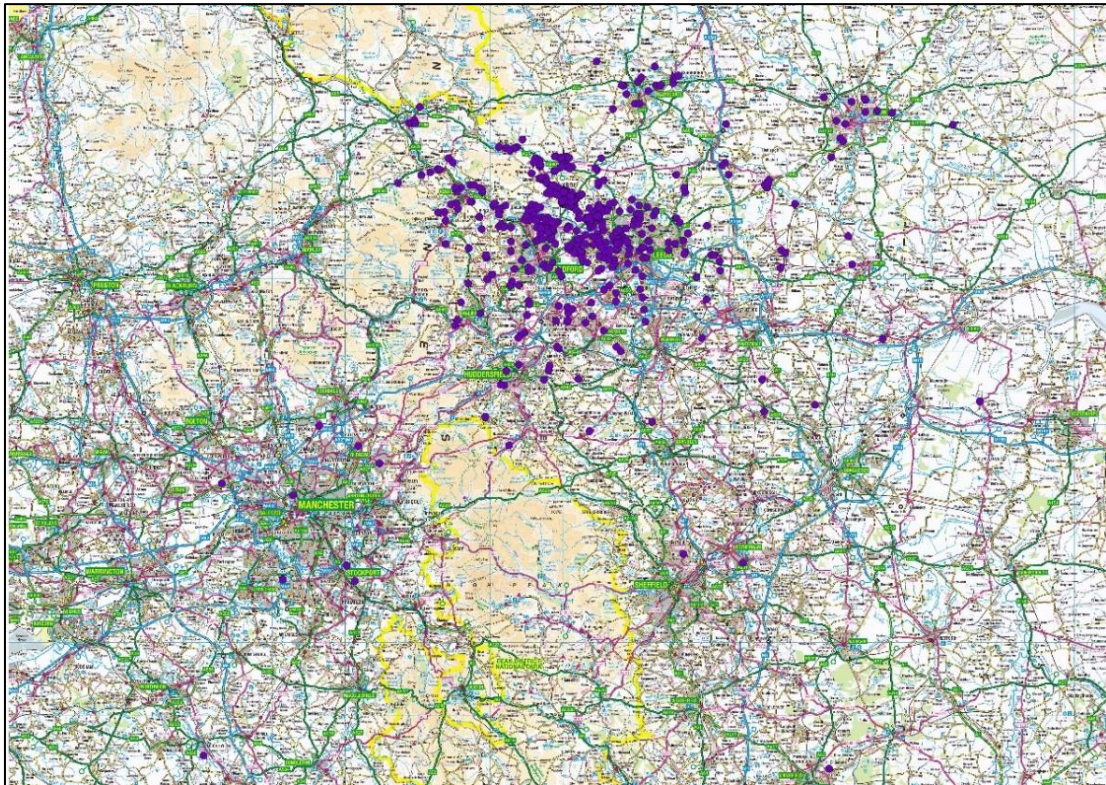
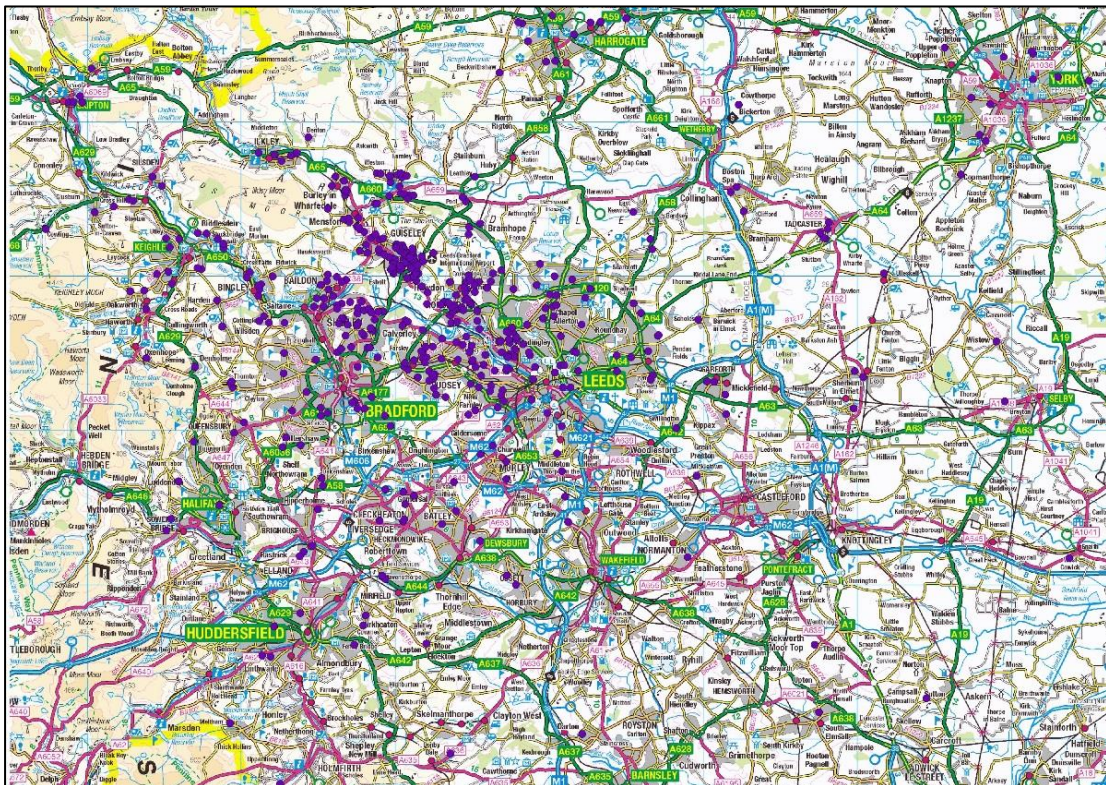


Figure 3.6: LBA Employee Catchment (Immediate Vicinity)



3.2.2 Employee Mode Share

Since the introduction of the LBA Travel Plan in 2009, which was updated in 2013, employee travel by single occupancy vehicle has been measured on an annual basis through the West Yorkshire Annual Travel to Work snapshot survey undertaken by Leeds City Council and staff surveys undertaken by LBA.

The percentage of employees travelling to work by means other than a single occupancy car over time is shown in Table 3.5.

As can be seen from the table, the percentage of employees travelling to work by means other than a single occupancy car has fluctuated but generally increased over the past four years. The increase is related to the measures that have been introduced to encourage staff to make more sustainable travel choices.

Table 3.5: Proportion of Multiple Occupancy Car Journeys over Time

Employee Type	Year	Mode share of staff travelling to work by means other than single occupancy vehicles (%)	Response Rates
Airport Company Staff	2010	13	77%
	2011	22	74%
	2012	26	53%
	2014	23	56%
	2016	9	58%
Non Airport Company Staff	2010	32	35%
	2011	17.4	46%
	2012	26	37%
	2014	26	84%
	2016	29	11%

3.3 Traffic Flows

There are significant seasonal and daily variations in traffic demand accessing the Airport site. Over the day, traffic levels fluctuate in response to flight schedules, particularly during the summer months with an early morning peak prior to 0630, preceding the build of traffic up on the highway network from 0700 onwards. There is also an afternoon peak in airport related traffic between 1300 and 1500. In December traffic demand related to the Airport is lower and the profile is much flatter as demand is more consistent over the day.

4 Drivers of Change

In looking forward to enable the development of the required surface access infrastructure, the primary driver of change will be the nature of the Airport itself – hence the importance of the SDP.

The City Region Aviation Strategy explores the key role that the Airport has to play in supporting the existing and new economy of the Leeds City Region and asks a number of questions about what sort of airport, and consequently what type of surface access infrastructure, is needed to fulfil this potential.

Globalisation and growing demand for air travel mean that 21st Century airports have evolved from transport gateways to much wider economic hubs. The evolution of airports complement their surrounding city regions, by not only offering a gateway for travel, connecting city regions together and internationally, but also by providing modern facilities and services that raise the profile of city regions and create positive first impressions, critical when seeking to attract new inward investment.

Working with Leeds City Region partners, LBA started to put forward the concept of the Airport as an economic hub for the City Region in 2013, and this is a theme that runs through the revised Masterplan. It is based on viewing the future development of the Airport in the context of its surroundings and what it has to offer, rather than just the confines of its operational boundary.

In terms of surface access, the economic hub concept suggests a number of aspects that will be important for the future infrastructure and services to support this ambition, including:

- A wider range of surface access mode opportunities will need to be developed and greater demand for travel to the area will allow an improved public transport offer to be developed;
- Connections to other key drivers of the Leeds City Region economy will be important; and
- Reliability and resilience of surface access connections will be vital for businesses.

The need to improve surface access to the Airport has been recognised by Government, through its commitment to fund feasibility work to identify short and long term surface access improvements. It has also been recognised by the Leeds City Region with the inclusion of both a new road link and a new rail link within its programme of schemes within the West Yorkshire plus Transport Fund (WY+TF).

Taking note of these commitments will be important, but the timing and phasing of their implementation needs to be complementary to the Airport's growth if the economic opportunities are to be maximised.

The future development of the global aviation sector and how this impacts on surface access requirements remains difficult to predict. In recent years market liberalisation and technological change have together fundamentally changed the structure of the industry. However, there are a number of other drivers of change that can be identified and will impact on surface access need and provision, such as:

- Political – EU and Government regulations, national and local planning policy, the role of regional airports within a national strategy;
- Environmental – desire to reduce carbon emissions from car-borne and air travel;
- Social – population changes, travel behaviour, increased demand for air travel;
- Technological – smart ticketing, online check-ins.

The first category is somewhat outside the control of the Airport, but as capacity at UK airports becomes scarcer in the immediate future, the role of regional airports within a national strategy will become more important, and hence demand will continue to increase, possibly widening the existing catchment area.

There may also be a consolidation of regional airport availability based on market forces that will naturally widen the catchment area of LBA, although providing a suitable public transport offer for a wider catchment area becomes more problematic and less commercially viable.

Environmental constraints will lead LBA and the aviation industry as a whole to look at new ways of reducing emissions, primarily through new aircraft technology, but also in terms of building materials and how the Airport operates. Increasing the proportion of passengers using public transport, as well as considering car parking pricing and provision as a fundamental part of an integrated strategy, will help minimise the environmental impacts of car traffic. Encouraging public transport vehicles to be low emission vehicles and providing electric vehicle charging points are all measures to aid environmental sustainability.

There have been considerable social changes over the period since the previous ASAS was prepared, with the advent of low-cost airlines and a growth in city breaks driving an overall growth in demand. Whilst this may not increase at the same pace over the next 5-10 years, the UK Aviation Forecasts suggest that population and economic growth in the Yorkshire and Humber area will see a continued growth in air travel at LBA at a faster pace than at other airports in the North of England. Price sensitivity is likely to continue to be important to the majority of passengers, however, awareness of environmental factors may well allow greater opportunity to influence travel behaviour to/from airports.

Furthermore, in order to achieve the identified passenger growth figures, additional low-cost flights will have to be provided at LBA, and these are likely to take place outside of the existing busier flight periods (currently in the early morning and early to mid-afternoon) because of limits on the number of Air Transport Movements on single runway. As a result, there is a greater opportunity to influence travel behaviour and encourage the use of sustainable modes as public transport will be a more viable option during these times of the day (daytime and early evening) than early morning.

The role of the Airport within the Leeds City Region means that an increasing proportion of the passenger growth at LBA will comprise business passengers. Some of these may be based in the area, but it should also be expected that a significant number will be inbound visitors first. This provides a much greater opportunity to influence travel behaviour and encourage public transport use, as many of these trips are unlikely to have a car parked at the Airport. However, the frequency and quality of the public transport offer for such users needs to be higher than at present, or else taxis are likely to be the mode that will benefit from an increase in business trips.

Technological advances in web bookings and smart ticketing may also help with behavioural change and mode shift. Other lifestyle areas such as health and leisure facilities are starting to link appointments with travel opportunities so as to provide customers detailed travel option information at the point of booking, and the airline industry could do something similar, assisted by airports. The increase in online check-ins may mean that passengers will arrive much closer to the flight time than before, meaning that they will be much more reliant on surface access infrastructure that is both reliable and resilient.

From these drivers of change, it is clear that there are a number of themes emerging, some of which are similar to the themes arising from the economic hub concept being promoted through the revised Masterplan. These themes include:

- Increased demand for greater mode choice, with frequency and quality being important for particular market segments;
- Reliability of journey times;
- Opportunity to influence travel behaviour; and
- Price sensitivity.

This collection of themes, mindful of the existing and committed situation, gives the Airport the chance to set out its new vision for surface access and the means by which this vision will be achieved. The themes also form the basis for selecting the strategy measures to meet the vision alongside how the identified potential growth in passengers could affect and influence surface access requirements.

5 A New Surface Access Strategy

5.1 Vision

The Airport's vision for taking forward its surface access infrastructure is:

“To improve surface access to the Airport by sustainable transport modes so it can better perform its function as a key gateway and economic hub and thereby raise the profile of the Leeds City Region as a location for business and tourism.”

In support of this vision, the Airport has identified a number of high level objectives for this ASAS and a set of related principles for future investment, both set out below.

5.2 Objectives

The objectives for this ASAS, and in particular for examining and addressing future surface access needs, are as follows:

- To enhance the economic and social development of the Leeds City Region by planning for growth collaboratively with local partners;
- To ensure that, as a gateway, the first impression of the Leeds City Region is of a well-connected, positive, thriving, and sustainable centre for business and culture;
- To target investment in surface access to support the Airport's defined role as a sustainable economic hub for the growth sectors of the Leeds City Region, as well as a tourist destination;
- Contribute to a package of investment to address the leakage of passengers to competitor airports and hence reducing highway congestion and vehicle emissions;
- To function as an attractive and sustainable local employment centre;
- To build the Airport's role as a potential regional interchange centre to further improve public transport services in the area; and
- To minimise impact on neighbouring communities.

5.3 Principles

The principles to be used to guide any investment in surface access measures at the Airport are that any measures must:

- Align with local and national policy including transport, economic and planning policy;
- Prioritise investment in measures in accordance with a hierarchy of transport choices to maximise the use of non-car modes, although take a multi-modal approach to developing future measures;
- Support the Airport's corporate values and objectives; and
- Offer good value for money and as wide and equitable distribution of benefits as possible.

It is also the Airport's intention to inform and consult local stakeholders, employees and passengers as any surface access infrastructure measures are developed and implemented.

5.4 Key Issues to Consider

The profile of passengers and staff is extremely pertinent to the planning of surface access. It is important to understand what they require from transport links to develop targeted strategies that influence travel mode choice. The following summarises some of the key issues that have been considered in developing the strategy measures:

- The current and likely future origins of both passengers and staff will play a significant part in understanding what interventions are needed, and where;
- Cycling and walking are most likely to be used by employees living close to the Airport, although there is also potential to target inbound visitors to the region on cycle touring holidays;
- Many employees work shifts and require flexibility from their transport choice;
- Passengers travelling in groups, particularly families, and with large amounts of luggage are likely to place greater value on the convenience of different travel options;
- Early morning trips to LBA are less likely to use public transport given that the wider bus offer within the City Region is limited during the early morning period;

- Business passengers tend to travel with less baggage and in smaller groups than leisure passengers but have an increased sensitivity to time and decreased sensitivity to cost;
- According to research conducted by Manchester Airport, passengers travelling on low-cost airlines have a higher propensity to choose public transport; and
- Frequent users of LBA will be used to using particular modes for accessing the Airport.

The Travel Plan Co-ordinator will play an important role in providing targeted information about travel options, for example, continuing to provide regular updates on alternative transport modes and offers to the Airport's business partners.

5.5 Summary

In light of the objectives, principles and key issues set out above as well as the analysis and information presented in Chapters 2 and 3 a set of measures has been defined for the short, medium and long term to improve existing surface access and ensure it meets the future needs of the Airport. These measures are summarised in the following three chapters which outline known opportunities and threats and set out measures according the group they target (such as staff, passengers or both).

6 Short Term Measures

For this ASAS, “short term” is defined as up to 2019, which takes in current committed funding and schemes, as well as planning horizons. These will also be the measures that will make best use of the existing infrastructure to encourage greater use of sustainable modes in this time period.

The following outlines the opportunities and threats over this time period, and sets out the range of measures proposed by LBA.

Opportunities	Threats
The main airport traffic flows occur outside the main traffic peaks on the local highway network	Heavy employee and passenger dependency on car
West Yorkshire Bus Strategy proposals can help enhance bus services to the Airport	Taxis/“kiss and fly” trips generate a disproportionately high level of road journeys
Smartcard ticketing rollout underway led by the Combined Authority	No direct rail or regular direct coach service to the Airport
Funding identified for A658 Harrogate Road/A657 New Line junction improvements through the WY+TF	Bus routes reliant on subsidy and often depend on public transport operators’ wider networks
WY+TF – funding confirmed for next 20 years via Local Growth Deal for Leeds City Region	Increasing traffic congestion affecting journey time reliability, particularly for bus services
Possibility for further Local Growth Fund funding	Availability, pricing and quality of off-site car parks not within Airport control – lack of certainty over future car parking supply
Possible local junction improvements to reduce congestion and improve network reliability	Staff shift patterns undermine attractiveness of public transport for trips to work
Areas for new car parking identified	Increased car dependency
Strategy Measures	
Passengers	
Support bus and rail operators to deliver an improved offer for passengers to travel via rail to a local station and then by bus to the Airport (e.g., through ticketing) following the opening of Apperley Bridge rail station	
Improve wayfinding and onward travel facilities for passengers inside and outside the terminal building, particularly to assist inward visitors to determine their travel options	

Agree and initiate a sustained marketing campaign to raise the profile of public transport to/from the Airport, to include promotions aimed at target passenger groups
Improve road signage to the Airport, particularly at the entrance points from the adjacent highway network
Provide a journey planning page/link on Airport website to give passengers point to point journey plan, focusing on sustainable travel options
Consider how new media channels and technologies can assist with journey planning, with a particular link to airline ticket websites
Work with public transport operators and the airlines to deliver improvements in the cross selling of public transport tickets
Provision of new on-site long stay car parking areas as and when required to satisfy anticipated demand, but as part of a balanced approach to promoting public transport
Staff
Provide sustainable travel information for new members of staff as well as a “taster” ticket for local public transport services
Update the Airport Travel Plan and ensure at least 95% of Airport Corporate Partners are committed to delivering the measures identified
Introduce incentives for staff to make more sustainable travel choices, eg priority car sharing spaces, discounted tickets and products, prize-draws
Develop a specific plan for employee car parking provision that supports the objective of reducing single occupancy vehicle trips to the Airport - this could include relocating staff parking to make public transport more attractive and convenient compared to the private car
All
Develop a standalone strategy for improving walking and cycling access to the Airport - this should, as a minimum, include undertaking an audit of existing facilities to identify areas for improvement and the production of a cycle map for the area around the Airport
Continue further feasibility and design work into the new road and rail links within the WY+TF
Strengthen partnerships with bus operators and the Combined Authority to identify any further improvements to bus services, eg frequency and reliability improvements
Look to introduce additional bus services to areas not currently served based upon analysis of Airport passenger and employee origins - this should include identifying and promoting alternatives to conventional buses for times or areas of low demand
Pursue further improvements in real time passenger information, providing door-to-door information for passengers

Assist bus operators and the Combined Authority in delivering smartcards and bespoke airport ticketing products that can be supported by such a platform

Continue to closely monitor the balance between public transport usage and car parking demand in order to adjust the focus of the strategy measures as appropriate

The first principal short term improvement will be to provide additional on-site car parking to reflect future demand, and Appendix A shows the areas identified by the Airport for future car parking for the periods up until 2024 and 2030 within the Car Parking Delivery Plan.

Development of areas A1 and A2 (both located within the Airport Operational Land Boundary) shown on the first drawing as standard parking gives 2,710 extra spaces. Conversion of the existing Long Stay 3 parking area to a mixture of traditional and block parking would give around 487 additional spaces. Taken together, this should provide sufficient additional capacity to accommodate the shortfall in mid/long stay parking up until 2024.

LBA's intention is to phase the delivery of additional parking spaces up to 2024 to meet the expected increase in passenger numbers over this period. With this in mind, an 'application' under a Town and Country Planning (General Permitted Development) Order to provide an initial number of spaces on area A2 was submitted to Leeds City Council in December 2016, with further 'applications' anticipated.

Given the planning permissions in place, off-site parking will accommodate some of the demand but there will continue to be uncertainty over off-site supply as shown by the temporary nature of one of the current planning permissions. Consistent with the Aviation Policy Framework, the ASAS sets out how the Airport will accommodate likely future parking demand within a balanced transport strategy, mindful of the targets relating to a reduction in private car mode split over time and the objective to encourage increased public transport use.

A second concentration of the short term measures will be the attempt to influence travel behaviour by passengers, building on the lessons learnt elsewhere in the City Region from travel behaviour programmes and using new technologies.

7 Medium Term Measures

For the purpose of this ASAS, “medium term” is defined as up to 2024, and reflects the fact that some elements will require longer planning and delivery timescales than the short term measures and will also necessitate working with a range of partners and funding bodies to drive them forward.

The following outlines the opportunities and threats over this time period, and sets out the range of measures proposed by LBA.

Opportunities	Threats
WY+TF includes a new link road to the Airport	Cost, time and risk of delivering new infrastructure schemes
A new Parkway Railway Station on the Leeds-Harrogate Line including Park and Ride facilities for surrounding residential areas.	Cost, time and risk of delivering new infrastructure schemes
Potential to develop a Transport Hub to provide for Airport and other local services opportunities	Continued capacity restraints on the rail network (e.g., Leeds railway station)
Largely untapped coach market and potential to extend bus services to areas not currently served	
Medium term rail developments, such as Northern Hub, TransPennine rail electrification, South Yorkshire tram-train trial and the early stages of Northern Powerhouse Rail	
New technological product development will assist with promotion of sustainable modes	
Areas for new car parking identified	
Strategy Measures	
Passengers	
Work with airlines, transport operators and tour operators to develop and promote integrated ticketing, particularly through online channels	
Provision of new on-site long stay car parking areas to satisfy anticipated demand, but as part of a balanced approach to promoting public transport	
All	
Deliver the new highway link to the Airport in line with economic growth opportunities identified in the SDP	

Work with Leeds City Council, the Combined Authority, TfN, the new Northern Rail franchisee (Arriva), and Network Rail to deliver a Parkway Station on the Leeds-Harrogate Line.
Support bus operators to promote journey opportunities involving bus to bus transfers at the Airport as part of the developing Transport Hub
Work with the Combined Authority to ensure bus service subsidies complement investment in other airport related transport schemes to ensure a coherent and effective bus network is delivered for the Airport
Provide an e-commerce sales route for Airport public transport travel tickets
Liaise with coach and taxi operators to develop innovative, bespoke and smaller scale services to underserved public transport markets, e.g., shared minibus taxi services
Develop an Airport Cycle Centre for use by both passengers and staff as part of the developing transport hub

Central to the package of medium term measures is the completion of road improvements, potentially a new link road to the Airport between the A65 and the A658. The Department for Transport's Leeds Bradford International Airport Connectivity Study Option Assessment Report (November 2014) recommends a 40mph link road is pursued in conjunction with improved bus services.

Leeds City Council, with the support of WYCA and the WY+TF, is now undertaking more detailed development work which will determine the most suitable option and includes engagement with stakeholders, residents and businesses. This work, which builds upon previous work use to establish the priorities for the WY+TF, will determine the preferred option and the design details and standards for the improvements with the aim of providing better access to LBA with an expectation that traffic relief to local residents can also be achieved.

The actual line of route will be defined by the more detailed feasibility work as part of the WY+TF. However, an initial sifting of options has shortlisted three options, including two new road routes and the alternative of improvements to the existing routes that were taken forward for public consultation at the end of 2015:

- A new road from the A65, running along the eastern edge of the Airport, tying in to the A658 Harrogate Road to the north of the Airport;
- A new road from the A65, running to the east of Rawdon and tying in to the A658 Harrogate Road to the south of the Airport; and
- Improvements to the capacity and quality of existing routes with localised schemes at key locations.

Given the economic hub concept outlined previously, the first of these options is the one that best supports the Airport's strategic objectives, and is also the option that has featured in previous Airport Masterplan documents.

The feasibility work is ongoing, at which point an outline business case will be presented to the Combined Authority in Summer 2017. However, initial business case work suggests that a new link road has the potential to provide positive benefits to the regional economy and employment.

Once a preferred option is confirmed, it is anticipated that improvements could be completed by 2024.

If the Airport is to fulfil its role as an economic hub, provision of rail connectivity to Leeds and Bradford will be important. The DfT-led Leeds Bradford International Airport Connectivity Study Option Assessment Report (November 2014) recommended that a heavy rail link between Guiseley, LBA and Horsforth was taken forward for further more detailed appraisal. Initial business case work (that does not account for all potential benefits generated) suggested that the scheme has a relatively low but positive benefit: cost ratio and would represent value for money once all the benefits of the scheme had been fully considered.

Further feasibility work and business case development was undertaken in early 2016, led by the Combined Authority, to assess the benefits of a new rail link so that it can be considered for inclusion in future investment programmes. This work concluded that a heavy rail link would be unachievable on a direct surface alignment (which exceeds permissible gradient) and longer alignments would involve extensive tunnelling and cuttings which would incur significant additional costs and compromise the business case. The most viable option for a future rail link to the Airport would therefore appear to involve light rail or tram train technology.

The Combined Authority then commissioned a further study examining the feasibility and benefits of establishing a new rail station just north of the existing rail station at Horsforth on the Leeds-Harrogate-York rail line as a means of achieving an earlier rail-based connection to the Airport.

The more recent work was completed in December 2016 and concluded that an additional station stop could be accommodated on the rail line, subject to the removal of a two minute engineering allowance, and a preferred location for the station was put forward. The economic appraisal undertaken shows that, based on a central growth forecasts for passengers at the Airport, the proposed station would deliver a financially positive business case. The work also demonstrated that a new station would be used by a wider range of passengers than those for the Airport, given the park and ride opportunities and connections to employment sites nearby.

Based on these conclusions, the next stage of work would involve a more detailed review of the design of the new station and its associated facilities (including the connection to the new link road), and a refinement to the business case.

8 Long Term Measures

For the purpose of this ASAS, “long term” is defined as up until 2030, which coincides with the time horizon for the SDP. Although there is much more uncertainty at this stage about this time period and the surface access infrastructure required, it needs to be considered as the delivery timescales for some elements will involve development work much earlier than this time period.

The following outlines the opportunities and threats over this time period, and sets out the range of measures proposed by LBA.

Opportunities	Threats
Feasibility work for a fixed link to the airport as part of wider City Region plans for an integrated mass transit scheme	
Long term rail developments, such as Northern Powerhouse Rail and HS2	
Areas for new car parking identified	Managing balance between car parking and public transport usage
Strategy Measures	
Deliver any further phases of the new highway link to the Airport	
Deliver any remaining phases of the Parkway Railway Station	
Provision of new on-site long stay car parking areas to satisfy anticipated demand, but as part of a balanced approach to promoting public transport	

To accommodate forecast car parking demand up to 2030, decking of the existing short stay area could provide an additional 280-300 short stay spaces, and meet the forecast short stay shortfall by that date, as shown on the second drawing in Appendix A. For mid/long stay parking up to 2030, the Airport will consider either decking part of the existing mid stay car park, or taking an early decision to provide a multi-storey car park on either area A1 or A2 shown on the third drawing in Appendix A, to accommodate the additional demand. Decking of existing car parks will include the provision of lifts.

Following completion of a Parkway Station on the Leeds-Harrogate line, there remains the potential for the airport to be connected, through a new fixed link, to an integrated mass transit scheme for Leeds, Bradford, and the City Region more widely in the future.

9 Monitoring the Strategy

The overall vision, as outlined in Chapter 5, sets out the need to improve surface access by sustainable modes whilst supporting the Airport in developing its function as a key gateway for the Leeds City Region for both business and tourism. It is crucial that progress towards the achievement of this vision is monitored throughout the life of the ASAS.

LBA will therefore produce a biannual performance report. This document will track progress against a number of targets described in more detail below. The report will also identify what actions and measures have been implemented, their success and any lessons that have been learned with respect to the implementation of future elements of the ASAS.

The performance report will be presented to stakeholders and local partners whose contribution to the ASAS will be key to its success. Furthermore, to ensure transparency and accountability, the report will be placed on the Airport's website.

LBA is also committed to reviewing the ASAS should local and national strategies and policies fundamentally alter the context of it, and within five years of its publication at the very least. When the document requires alteration, this will be done in an open and transparent manner by LBA.

9.1 Indicators and Targets

A set of indicators and targets has been developed in order to monitor progress towards delivering the vision. These targets are summarised in Table 9.1 and discussed in greater detail below. The targets will be reviewed regularly during the life of the ASAS as part of the performance monitoring regime.

Table 9.1: ASAS Indicators and Targets

Indicator	Targets
Passenger Public Transport Mode Share	18% (excluding taxis) by 2024, 25% by 2030
Staff Vehicle Occupancy	30% by means of other than a single occupancy car by 2024, 35% by 2030
Vehicle Trips per Passenger	0.475 trips per passenger by 2024
Long Stay Parking Spaces per mppa	2050 by 2024

Targets for 2030 assume the implementation of a new rail link to LBA from 2025 onwards

9.1.1 Passenger Public Transport Mode Share

Modal share targets for public transport are a robust method to monitor the success of the ASAS, given the emphasis on promoting sustainable modes.

The previous ASAS included the following targets:

- To achieve a public transport mode share of 40% (under the DfT definitions which include taxis) by 2011 – this would have necessitated achieving a public service bus mode share of 10% by 2011;
- To achieve a public transport mode share of 50% by 2016.

The first of these targets has unfortunately not been met given that bus services from Leeds City Centre to the Airport have only recently been improved, the A65 Quality Bus Initiative only opened in 2012 (three years later than envisaged at the time of the previous ASAS) and there remains no public transport fixed link to Airport.

Therefore, whilst the measures set out within the previous ASAS have improved surface transport connectivity, they have not managed to have the level of impact required to deliver the first of these targets. Since the previous ASAS it has been decided that as one of the objectives of the strategy is to increase the use of sustainable modes the new target should relate purely to the use of public transport including bus, minibus, coach and rail (excluding on or off airport car park buses).

The baseline figure for Passenger Public Transport Mode Share is 13.5% (excluding taxis), based on the terminal frontage forecourt survey in August 2016. Minibuses and coaches are classified as 'Public Transport' here, contrary to the definition used by the CAA. Through the measures and opportunities set out within this revised ASAS, the Airport has a long term ambition, in view of the likely delivery timescales for certain measures, that 18% of passengers will use public transport to access the Airport by 2024 (with 14% taxis) and 25% by 2030 (with 15% taxis). These represent challenging but achievable targets, and will require inputs from all partners to achieve them.

LBA will monitor its progress towards meeting this target through the continued use of the annual terminal frontage forecourt survey. The methodology for the surveys will be reviewed prior to the next set of surveys to ensure that it is robust and fit for purpose and also includes walking/cycling which are currently not considered.

9.1.2 Staff Vehicle Occupancy

LBA is keen to take the lead in promoting the increased use of public transport and other sustainable modes, but there needs to be a recognition that the shift patterns and times of some employees do not readily lend themselves to use of public transport. In such cases, greater use of car sharing would achieve a similar objective, and so it is considered that vehicle occupancy is a more suitable measure for Airport staff than public transport mode share.

LBA will seek to reduce single occupancy staff vehicle movements to and from the Airport, thereby reducing the impact of the Airport's staff on the local road network. The 2014 baseline figure for Staff Vehicle Occupancy is 23% by means other than single occupancy vehicles for Airport Company staff and 26% non-Airport Company Staff. The target is to achieve 30% of all staff traveling by means other than a single occupancy vehicle by 2024 and 35% by 2030.

LBA will monitor its progress towards meeting this target through the use of annual employee surveys, which measure and analyse travel to work data.

9.1.3 Vehicle Trips per Passenger

The total number of vehicles entering and leaving the Airport site (including passengers, employees and visitors) can be accurately measured using existing automatic traffic counters and car park entry data. As such, a measure of the number of vehicle trips per passenger (excluding air to air transfers) can be calculated. This high level measure is a useful indicator of monitoring trends in the overall volume of road traffic, mindful of the predicted growth in passenger numbers to place it in context.

Based on traffic count and car park entry data, the 2013/14 baseline figure for Vehicle Trips per Passenger is 0.50, that is every car trip to the Airport carries, on average, two passengers. Over time, it would be desirable that as the number of passengers rises, road traffic should increase at a slower rate. Therefore, in line with proposed Passenger Public Transport Mode Share targets set out above, the target is for this figure to be 0.475 Vehicle Trips per Passenger by 2024, or an average of 2.1 passengers per car trip.

Monitoring of this measure will encourage the development of both public transport and non-public transport measures to improve sustainable access to the Airport including, car share schemes, car parking strategies, walking and cycling measures and other incentives.

9.1.4 Long Stay Parking Spaces per Passenger

As part of a balanced approach to surface access infrastructure, LBA is aware that it needs to provide sufficient long stay car parking to meet demand whilst continuing to encourage the use of public transport. Therefore, monitoring the number of long stay parking spaces

provided as a ratio against passenger numbers will provide an indication of how this balance is maintained. This calculation includes long stay spaces provided off site although the Car Park Delivery Plan shows that the airport will be able to provide sufficient spaces to accommodate future demand without the need for further off-site parking provision.

The 2015 baseline figure for Long Stay Parking Spaces per million passengers per annum is 2500. In line with proposed passenger growth forecasts and the availability of parking spaces, the target is for this figure to be 2050 by 2024.

10 Delivering the Strategy

The UK Aviation Framework emphasises the importance of collaboration, noting that local stakeholders have the experience and expertise to identify solutions to a wide range of issues tailored to their specific circumstances. LBA recognises that the policies and actions of other partners will impact upon the success of this strategy, especially as for some elements, partners' assistance will be required to deliver and fund the proposed measures.

From planning to funding bids, from delivery to monitoring and review, there needs to be a new, improved partnership between the Airport, the LEP, local authorities, the businesses that drive the City Region, service providers and the local community.

The following sections outline the key partnerships, potential sources of funding, proposed delivery programme and potential risks.

10.1 Partnerships

10.1.1 Airport Consultative Committee/Surface Access Forum

The Leeds Bradford Airport Consultative Committee Meeting is held quarterly and acts as a formal link between LBA and its neighbouring communities. The Committee is made up of representatives from the Airport, the local community and local trade and industry bodies.

The Airport Surface Access Forum meets around twice each year to consider surface access issues.

10.1.2 Leeds City Region LEP

The LEP promotes the Leeds City Region's interests on a national and international scale, helping business and enterprise to thrive by unlocking potential through partnership. The LEP's vision is to unlock the potential of the City Region, developing an economic powerhouse that will create jobs and prosperity. The UK Aviation Framework states that scope exists for LEPs to develop local strategies to maximise the catalytic effects of airports to attract business and support growth, and that there could also be scope for LEPs to take a more active role in feeding into airports' plans for surface access.

The Leeds City Region LEP has already endorsed the key role that the Airport has to play in its growth strategy as well as producing an Aviation Strategy in 2013, and so relationships with the LEP will be fundamental to taking forward the economic 'hub' concept and the required surface access improvements. It should also be noted that the Local Growth Fund allocation is channelled through the LEP and therefore it has a key financial responsibility.

Given the current and widened catchment area for LBA, the Airport will also use the SDP and the ASAS to establish closer links with the neighbouring LEPs of North Yorkshire and East Riding, Hull and The Humber and South Yorkshire.

10.1.3 West Yorkshire Combined Authority

The West Yorkshire Combined Authority is the driving force for economic growth across the Bradford, Calderdale, Kirklees, Leeds and Wakefield districts and the City of York Council area. The Combined Authority brings together key decision-making powers into a single body, putting West Yorkshire and the wider Leeds City Region, including the City of York, in a much stronger position to tackle its shared economic challenges - including improving transport - by boosting jobs and growth. The WYCA Board is made up of the leaders of each of the five West Yorkshire Councils, plus the chair of the Leeds City Region LEP, and the leader of York City Council.

The Combined Authority is responsible for the £1 billion WY+TF, and will work closely with business through the Leeds City Region LEP to ensure that business and the regional economy is at the heart of the decisions taken. Given the inclusion of the proposed new road and rail links within the WY+TF approved programme, the Combined Authority will be a critical partner in delivering the required surface access improvements.

As the Combined Authority also owns the West Yorkshire Local Transport Plan (soon to become the Single Transport Plan) and has responsibility for public transport across the Leeds City Region, LBA will also work closely with the Combined Authority to bring forward continued improvements in bus services in the shorter term, and on wider initiatives such as smart ticketing.

10.1.4 Local Authorities

LBA is the principal airport serving the Leeds City Region. As such the Local Authorities within the Leeds City Region (Barnsley, Bradford, Calderdale, Craven, Harrogate, Kirklees, Leeds, Selby, Wakefield and York) will be involved as partners in taking forward the Airport's economic hub concept.

Leeds and Bradford in particular, will be important partners in developing a highway network that provides the required resilient and reliable surface access connections, as the Local Planning Authority, Leeds City Council is fundamental to supporting the growth plans of the Airport and realising the economic potential for the City and the wider City Region.

10.1.5 Transport for the North/Rail North

Transport for the North (TfN) brings together local representatives across the North of England to speak with one voice to Government on strategic transport issues. Local and combined authorities are working with Highways England, Network Rail and HS2 Ltd to

develop a Strategic Transport Plan for the North in Spring 2017. TfN also submitted its proposal to become the first sub-national transport body in England in October 2016.

In February 2017, the Independent International Connectivity Report was published by TfN. The report examined the economic role of international connectivity for the North of England. It identified a list of surface access interventions required to improve international connectivity at the North's airports and ports. These included the provision of a Parkway station serving LBA in the medium term and the development of a link road connecting LBA to the A65 and A658 in the long term.

Alongside the Independent International Connectivity Report, TfN are developing a Strategic Transport Plan in 2017, which will identify a long term, sequenced investment programme for a series of strategic development corridors, and the potential for high speed rail connectivity to Bradford and Leeds through Northern Powerhouse Rail, all of which would support the growth of the Leeds City Region and improve surface access to LBA.

TfN will also assume an overseeing role for Rail North, a partnership of local and combined authorities established to co-manage the new TransPennine Express and Northern Rail franchises with the DfT. Again, this is a new way of working in partnership to deliver improved rail services and identify future growth in the rail market across the North, and the work done to date on a new rail link and station is being shared with Rail North at all key stages.

10.2 Funding Sources

10.2.1 West Yorkshire plus Transport Fund

As part of a package of investments, the Government has confirmed a Local Growth Deal with Leeds City Region that will provide an initial £180 million over six years (2015/16 to 2020/21) to support the WY+TF. This agreement could be worth up to £600 million over 20 years, dependent on the economic impact of local investments. This agreement, when combined with local commitments, could deliver a £1 billion+ Transport Fund in the Leeds City Region.

As indicated previously, the WY+TF approved programme already includes both a new road link and a new rail link to LBA, with the former included as a named scheme within the initial 10 year programme, and the latter identified within the "Development Pool" of schemes. More detailed design and business case development work on the road link will be complete in 2017, with the current Transport Fund programme showing a delivery date for the new road of 2024.

A new parkway station for LBA on the Leeds-Harrogate rail line was included in the package of works identified within the new Leeds Transport Strategy in November 2016, for delivery in

the early 2020s. £173 million of Government funds is potentially available to Leeds City Council following the decision not to proceed with the Leeds trolleybus scheme.

There are other schemes within the WY+TF programme that will help improve surface access to the Airport, including the A658 Harrogate Road/A657 New Line junction improvements scheme, which is identified as an early priority for delivery by 2019.

10.2.2 West Yorkshire/North Yorkshire Local Transport Plan

The Government currently provides funding to local transport authorities in England to help them develop their local transport services and improve and maintain their infrastructure following strategies set out in the relevant Local Transport Plan.

Much of this funding is for the provision and maintenance of infrastructure such as road improvements, although some funding is provided for ongoing services, including buses. The integrated transport (IT) block provides funding support for transport capital improvement schemes costing less than £5 million.

In the short term, LBA will work with the West Yorkshire Combined Authority in particular (but also North Yorkshire County Council) to examine the opportunities to fund improvements to bus services and the local highway network through the IT block, for so long as this funding source is available.

10.2.3 Rail Franchise/Network Rail

The main committed expenditure in the local rail network are the new rail stations at Apperley Bridge and Kirkstall Forge. In both cases, the existing Airport bus services run close to the location of the new stations, and so there are opportunities to promote rail/bus interchange to access the Airport in the shorter term.

Major investment by Network Rail coupled with the re-franchising of Northern Rail and TransPennine Express networks in 2015 means that this is a period of significant opportunity for the North of England's rail network, with the potential help transform rail travel for the increasing number of passengers in the North of England. The local authorities across these rail networks, working together as Rail North, are exploring with the DfT options for further devolution of specification and control over future rail franchises.

The new franchises commenced in April 2016 and, as part of the bidding process, LBA made representation to this consultation process, setting out the work done to date on a new rail link, with the aim of it being included as a costed option within the new Northern Rail franchise specification.

LBA will work with the new franchisee (Arriva), the Government and Rail North throughout the next franchise period to enhance the rail offer to the Airport and seek to use available rail industry funding where possible.

10.2.4 Central Government Grants

Over the last few years the Government has attempted to reduce the large number of funding streams for transport improvements with the result that much of the remaining funding is allocated on the basis of competitive bidding rounds. Three of the most prominent are the Local Growth Fund (LGF), Local Sustainable Transport Fund (LSTF) and the Local Pinch Points Fund.

The LGF seeks to delegate significant Whitehall budgets to LEPs “enabling them to tackle the barriers to growth that hold back the private sector in their areas”. Further use of the LGF to implement the economic hub concept at the Airport will be explored with the LEP.

LSTF schemes were aimed at promoting sustainable modes of travel and contributing to economic and environmental objectives, and it may be possible to develop a specific LBA package of measures to be put forward by WYCA if there are any future bidding rounds. An early scheme could be the one described previously to better link the online ticket booking of passengers to travel opportunities.

Similarly, any future bidding rounds for the Local Pinch Point Fund, aimed at small scale traffic improvements to support economic development, may be suitable for some of the junctions on the local highway network that could constrain growth at the Airport in the future.

Other funding streams that are also coming forward include those in relation to Low Emission Vehicles and Infrastructure, which may be applicable when considering public transport fleet enhancements and the promotion of low emission vehicles for travel to/from LBA.

10.2.5 Private Sector

Private sector funding will be essential to complement almost all of the other funding sources described, and it would be expected that the Combined Authority, the LEP and Leeds City Council would seek to use Community Infrastructure Levy, Section 106 Agreements and Section 278 Agreements as appropriate to gather contributions to transport improvements where these facilitate development.

The Combined Authority is currently considering alternative options to deliver its bus strategy - Quality Bus Partnerships and Quality Contracts – as well as awaiting possible new franchising powers within any devolution settlement. Under any circumstance, there is the potential to embed enhanced bus services to LBA as part of the future bus network needs across the City Region.

Finally, there are the contributions from the Airport itself, which already underwrites a number of the existing surface access opportunities and is committed to significant investment in internal transport improvements and car parking as part of the SDP.

10.3 Delivery Risks

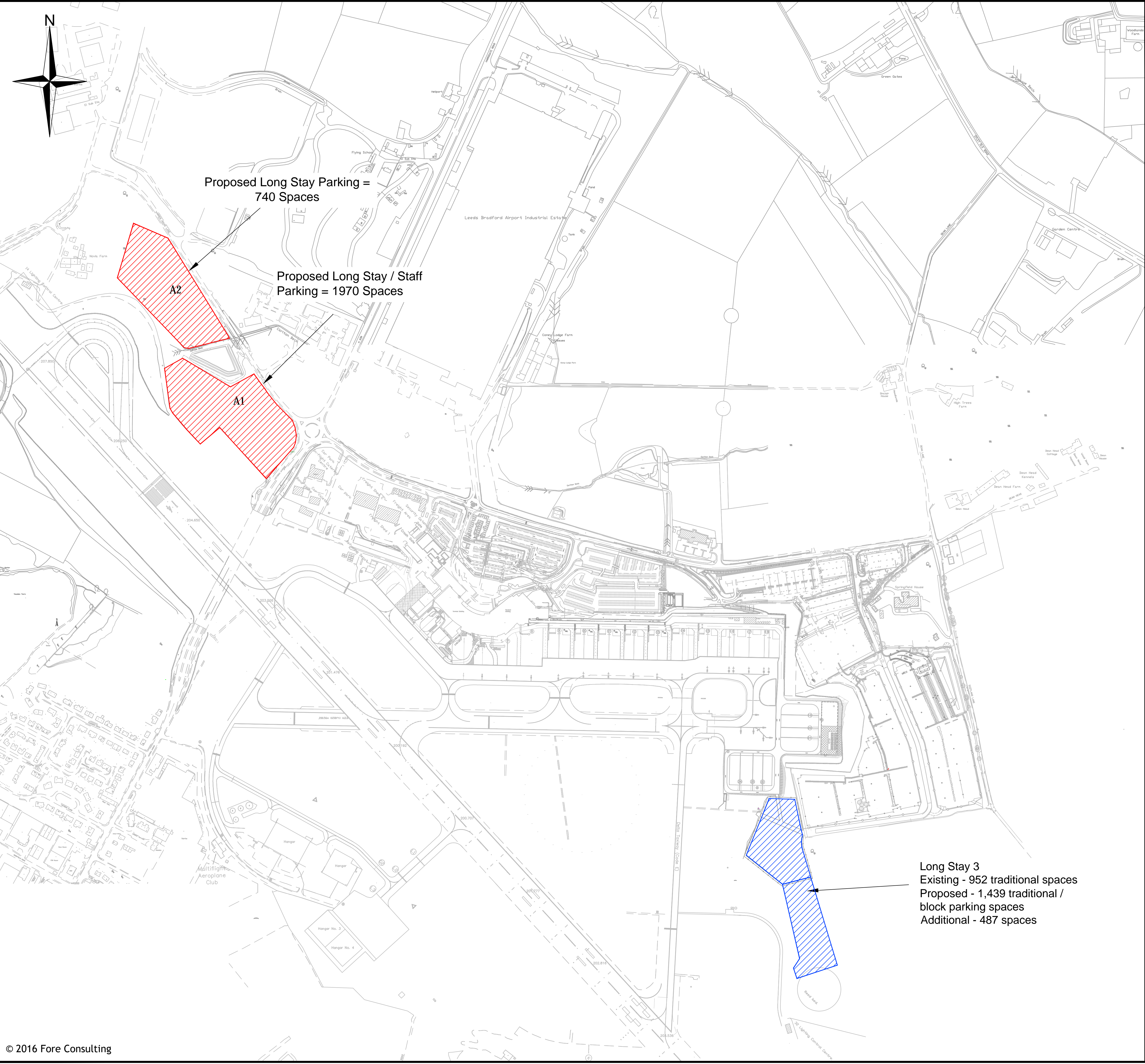
Risk can be defined as the effect of uncertainty on objectives. The following high level delivery risks have been identified by partners and stakeholders during the development of this strategy:

- Benefits realisation;
- Failure to secure the necessary statutory approvals;
- Gaps in available funding;
- Delays during construction due to unforeseen circumstances;
- Cost increases;
- Project management failures.

In order to manage these and any other risks that are identified by delivery partners, LBA will compile a risk register alongside the ASAS and update this on a regular basis. This risk register will quantify the likelihood and impact of each risk and identify how the risk will be managed and by who. For larger infrastructure schemes within the ASAS, a Quantified Risk Analysis (QRA) will be conducted at the appropriate time to provide further clarity on the risks involved and how these should be managed as part of the business case development.

Appendix A

Car Parking Delivery Plan: Proposals up to 2024 and 2030



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1. PRELIMINARY LAYOUT SUBJECT TO FULL TOPOGRAPHICAL SURVEY & DETAILED DESIGN INCLUDING CDM COMPLIANCE, STATUTORY UNDERTAKERS SEARCH, DIVERSION REQUIREMENTS, HIGHWAY DRAINAGE PROVISION, LAND AVAILABILITY AND LOCAL AUTHORITY APPROVAL.

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REV	DESCRIPTION	DATE	BY

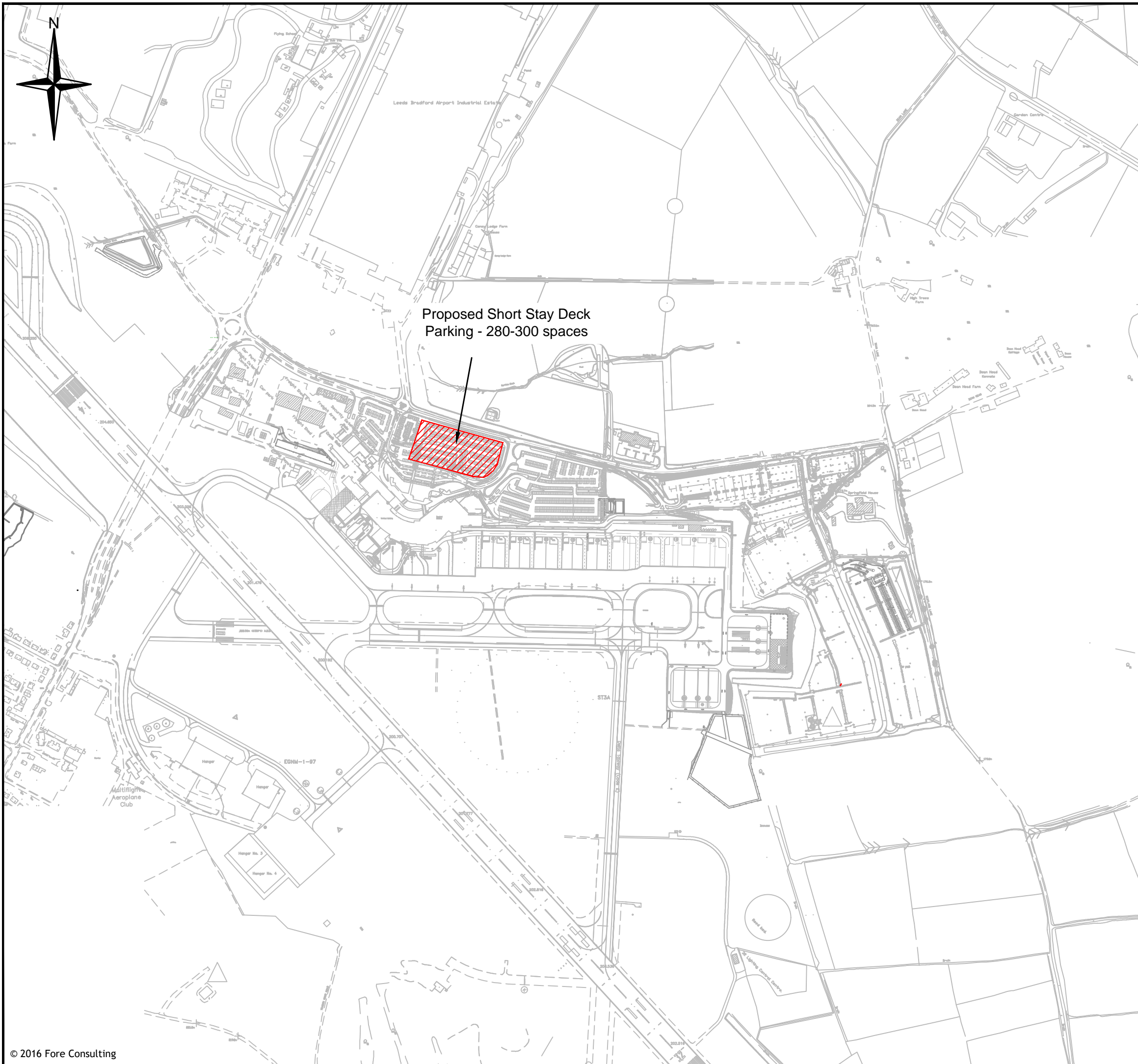
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CLIENT:
LEEDS BRADFORD AIRPORT

PROJECT:
CAR PARKING DELIVERY PLAN

DRAWING TITLE:
OPTION 1 - UP TO 2024

SCALE:		DRAWING STATUS:		
NTS		DRAFT		
JOB NUMBER:		DRAWING NUMBER:		REVISION:
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CLIENT:

LEEDS BRADFORD INTERNATIONAL AIRPORT

PROJECT:

LEEDS BRADFORD INTERNATIONAL AIRPORT CAR PARKING REVIEW

DRAWING TITLE:

OPTION 2 - SHORT STAY UP TO 2030

SCALE:

NTS

DRAWING STATUS:

DRAFT

JOB NUMBER:

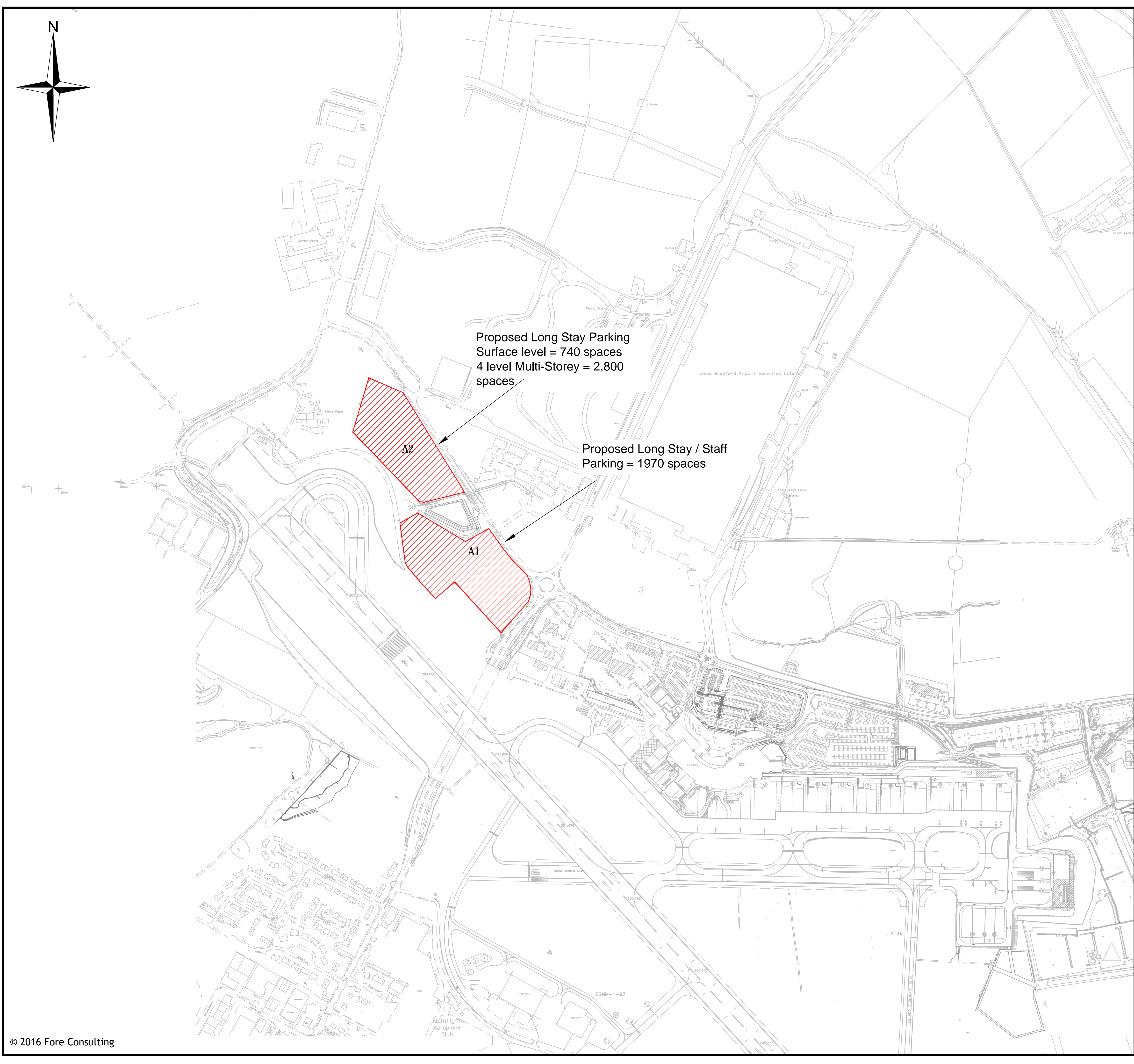
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CLIENT:

LEEDS BRADFORD AIRPORT

PROJECT:

CAR PARKING DELIVERY PLAN

DRAWING TITLE:

OPTION 3 - LONG STAY UP TO 2030

SCALE:

NTS

DRAWING STATUS:

DRAFT

JOB NUMBER:

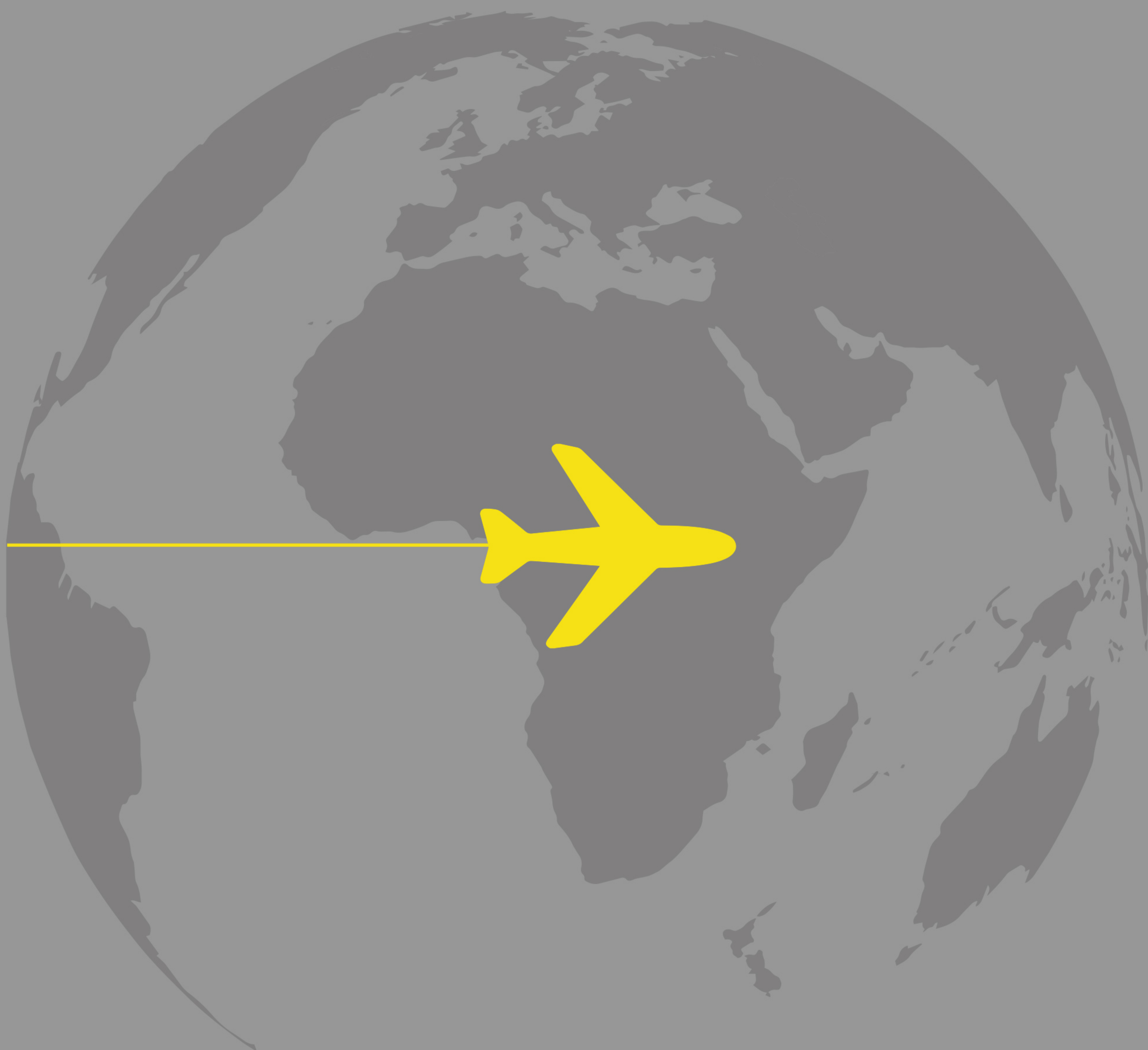
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