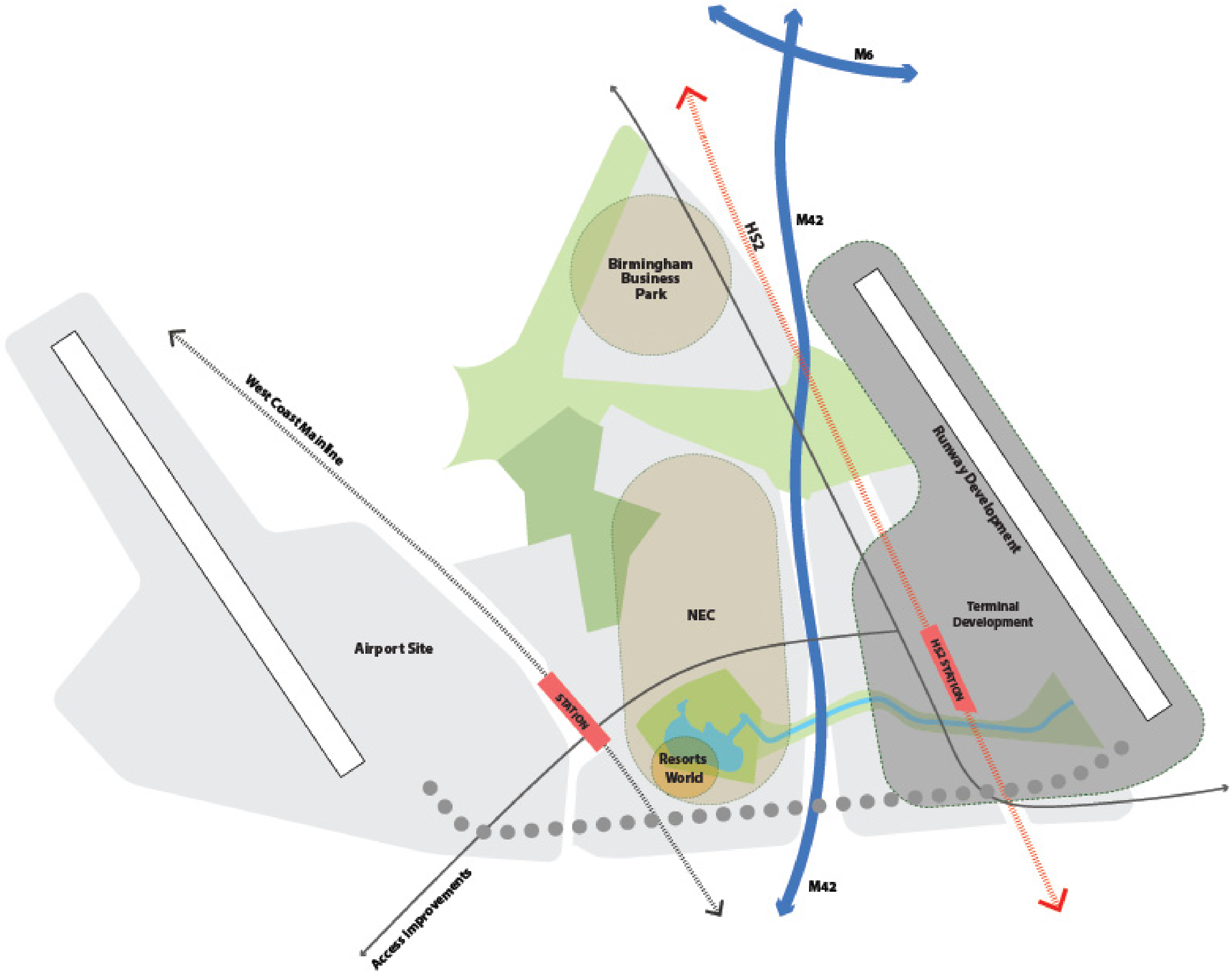
PROPOSAL TITLE:	Birmingham Airport	Group:	Dispersed
SUBMITTED BY:	Birmingham Airport limited	Reference No.:	39

PROPOSAL

New single independent "full-length" runway, parallel with the existing, and terminal developments located approximately 3.5km east of the existing runway. Linked by dual taxiway and integrated terminals would be connected via a rail link. Largely constructed on a brown field site. HS2 interchange terminal c 1.5km from existing airport and directly linked to proposed site (38 minutes travel time to London).



ASSESSMENT SUMMARY

The second runway creates comparable additional capacity to the 2nd runway schemes at Gatwick and Stansted. The costs are estimated to comparable to, but slightly higher than, the Gatwick and Stansted schemes (£15.4bn compared to £13bn and £14.1bn respectively). This scheme impacts the greatest population with aircraft noise amongst the group of dispersed model proposals.

The scheme adds capacity to the UK airport system, but it is largely reliant upon HS2 for that capacity to benefit a wider geographical area, although with HS2, it would have the greatest population within 2 hours within the group. However, its competitive position, relative to south east airports, is likely to be weakened by the journey times, service patterns and costs of high speed rail from London and the comparative lack of variety of routes that can be offered. However, the airport would be likely to capture some demand from Luton and East Midlands with which it shares parts of its catchment area and potentially from Manchester and Leeds via HS2 in the future. Surface transport improvements to highways would be required, primarily widening of the M42.

The scheme would create capacity to accommodate the airport's growth forecasts to at least 2050 and would enable the choice of routes and frequencies offered by airlines to increase while supporting continued high levels of resilience. Airlines would be unlikely to relocate to Birmingham from the south-east airports; however, the additional capacity would enable incumbent airlines to grow the frequency and variety of services, though these are expected to continue to be to short/medium-haul rather than long-haul destinations.

PROPOSAL TITLE:	Birmingham Airport	Group:	Dispersed
SUBMITTED BY:	Birmingham Airport limited	Reference No.:	39

OVERVIEW

Approach	**Delivery body (comprised of a number of land owners and interested public and private entities) to oversee implementation would be akin to a Development Corporation with spending powers and statutory CPO powers.** Delivery process not described, but it would appear that phased expansion would follow setting of public policy and establishment of the Development Corporation.							Opening Year 2030
Capacity	Claimed capacities may be upper limits, but are reasonable long term challenge objectives.						Airport	Net
						Runways	2	1
						ATM	455,400	250,000
						pax	63	36
Cost	When compared to other dispersed airport schemes which share the same set of common assumptions, this option appears to be the most expensive.			Airport	Access	Other	Sub Total	Including Risk/OB
				5.2	1.6	0.5	7.3	14.8
Surface Transport	▪ Relies on HS2 to provide access to London and increase mode split from 35% in the airport's original masterplan. ▪ The popularity of HS2 as an airport surface access choice, given the number of closer airports in London, is not known. ▪ Relies on a number of substantial local road widening schemes, including widening the M42 to D6.						1 hr isochrone	15
							2 hr isochrone	39
							London centre	95 miles

Economic

Borough	Solihull	Birmingham	Coventry	North Warwickshire	Warwick	Nuneaton and Bedworth
Unempnt (%)	7.0	14.9	9.4	6.3	4.7	7.2
Ave. Salary (£/yr)	29,442	24,159	24,794	25,428	27,102	24,700
County	West Midlands	Warwickshire	Worcestershire	Staffordshire	Leicestershire	
GVA (£/cap)	17,358	19,387	15,196	14,482	18,880	

Environment		Airport	Net
The new runway alone would reduce the local population affected by aircraft noise, however, using both runways would increase the affected population. The new runway permits fewer people to be affected by night time noise than currently. The River Blythe SSSI would need to be diverted and 4 Grade II*listed buildings could be lost along with part of Packington Hall Registered Park and Garden.	57 LA_{eq}	56,000	21,000
	55 L_{DEN}	158,000	

SAC[1]	SPA[1]	Ramsar	RP&G[1]	AONB[1]	SSSI[1]	Listed Buildings	SAM[1]	Houses Lost
-	-	-	1	-	1	12	-	40

[1] SAC: Special Areas of Conservation; SPA: Special Protection Areas; RP&G: Registered Park and Garden; SSSI: Site of Special Scientific Interest; SAM: Scheduled Ancient Monument.

ECONOMY

Borough	Solihull	Birmingham	Coventry	North Warwickshire	Nuneaton and Bedworth	Warwick
Unemployment (%)	7.0	14.9	9.4	6.3	7.2	4.7
Ave. Gross Salary (£/yr)	29,442	24,159	24,794	25,428	24,700	27,102
County	West Midlands	Warwickshire	Worcestershire	Staffordshire	Leicestershire	
GVA (£/capita)	17,358	19,387	15,196	14,482	18,880	

Impact on Industry

A second runway at Birmingham Airport would enable it to meet its unconstrained demand through to at least 2050, allowing airlines to introduce new services according to market demand. This growth would be supported by the opening of HS2, reducing travel times between the airport, Greater London, Manchester and Leeds, although demand for this option is likely to be constrained by the net price of combined rail and air fares, and the range of flight options available at Birmingham Airport compared to other London area airports. Expansion of Birmingham Airport is likely to have a negligible impact on demand at Heathrow, Gatwick or Stansted Airports, but may have a moderate impact on demand at Luton and East Midlands Airports, due to their overlap with Birmingham's catchment area.

Airports	A second runway at Birmingham Airport would allow for up to 450,000 ATM p.a. and so would be able to meet the most optimistic forecasts for unconstrained demand at the airport through to at least 2050. However, it is unlikely to have more than a negligible impact on demand at Heathrow, Gatwick or Stansted, even assuming that HS2 is built (allowing travel times of less than 40 minutes from Euston). It is unlikely that the combined total fare/time cost of HS2 and the likely connectivity options of routes, frequencies and fares to use flights at Birmingham Airport would be attractive to more than a small proportion of users of existing London area airports. Expansion at Birmingham Airport is more likely to increase competition with East Midlands and Luton Airport, as its primary surface access catchment overlaps with those airports (as do its range of air services).
Airlines	Airlines using Birmingham Airport and others seeking to use it (primarily LCCs, major European, and a few Middle Eastern, South Asian and North American carriers) would benefit from more runway capacity as it would continue to allow them to expand services at the times that are commercially viable for them. It is unlikely that expansion at Birmingham would mean any significant shift in services from London area airports to Birmingham, with the exception of some LCC and charter services at Luton. It is unlikely to have more than a marginal impact on Birmingham Airport attracting new long haul services.
Passengers	Passengers will benefit from any increase in routes, frequencies and competition at the airport over time as airlines expand services to meet market demand. The opening of HS2 will offer London based users new options to utilise services from Birmingham Airport, when such options are price/timing competitive. However, there is likely to be little net effect on users of other airports.

Local & Regional Economic Impacts

An additional runway at Birmingham Airport would support growth of new and existing industries in aviation, airport and aviation support services and travel, tourism, logistics and other related sectors at Birmingham and the West Midlands. Additional airline services will support economic development there and beyond into Warwickshire, Worcestershire, Staffordshire, Leicestershire and Shropshire, assuming airlines seek to expand services at the airport as forecast. However, it may not have a major impact on unemployment in Birmingham, although it may have a marginal positive impact on GVA for the West Midlands. It is unlikely to have any measurable impact on economic development in greater London or around its area airports. It is unlikely that there will be sufficient demand to create more than a negligible agglomeration effect around Birmingham Airport. **Birmingham Airport claims it will support up to 3,010 more jobs in Birmingham, 13,450 in Solihull, 7,880 in former county of West Midlands and 19,090 in the West Midlands region (if BHX reaches 27.2mppa). Income impacts of between £147m-£824m for each of those three areas. By 2040, 145,373 more jobs at Solihull, 187,634 jobs at Greater Birmingham Solihull Local Enterprise Partnership (GBS LEP) and 221,246 jobs in West Midlands region. GDP impacts of £15.1m for Solihull, £18.7m for GBS LEP, £21.5m for the West Midlands region.** The employment and income impacts appear to be optimistic, probably because of estimates of attracting substantial demand from greater London. However, the GDP impacts do not appear to be unrealistic.

National Economic Impacts

Limited national impacts, as primary effect will be to support trade, tourism and economic development in the West Midlands. Unlikely to have significant impacts beyond that county and neighbouring counties.

SURFACE ACCESS

Time/Distance to Central London	1 hr isochrone population	Key required upgrade schemes	
38 mins (HS2) 95 miles **Journey times to other population centres** Birmingham 9 mins Manchester 41 mins	15 million **2 hr isochrone population** 39 million	▪ LRT links between Birmingham Interchange HS2 station and airport terminals. ▪ LRT system from airport to Birmingham and Solihull. ▪ Reopening of the Whitacre rail link.	▪ D6 M42 between new southern and northern airport junctions. ▪ D4 M42 between southern junction and J5. ▪ D5 M42 between northern junction and J7. ▪ Local road widening of A45

Rail Infrastructure Capacity Analysis

The proposed HS2 interchange station would be 1.5km from the existing airport terminal and directly linked to the proposed site. Other rail improvement schemes include: Birmingham Gateway project; programmed improvements to Coventry-Nuneaton Line; service improvements to Wolverhampton, Nottingham, Derbyshire and Yorkshire line; Project 110 London Midland, and enhancements to the Sunday services to the airport. Wolverhampton Interchange project will aid sustainable access from west. Re-opening of the Whitacre Link would provide a non-stop service via Derby and reduce journey times from **85 minutes to <40 minutes -** this link would open up significant areas of East Midlands offering connectivity benefits to West Midlands, allow trains to bypass congested central Birmingham and improve access to Coventry and Warwickshire. However, the business case for this project is unproven. Centro has a medium-term aspiration to extend the Midland Metro from Birmingham City Centre to the airport. All of the above rail schemes are would help contribute towards achieving a 50% public transport mode share. A key aspect is how much surface access rail demand is predicted to use HS2 to Birmingham airport to/from London / Leeds / Manchester and how much surface access rail demand is predicted to be local and use the schemes listed above (if sufficient capacity is available). No analysis has been presented on the regional / local role of the airport and whether the schemes proposed can cater for a public transport mode share target of 50%.

Highways Capacity Analysis

Traffic modelling (assuming 26.2mppa, HS2 and sustainable transport interventions) has predicted that the M42 would be over capacity in 2030 without the second runway, requiring: M42 upgrade to 4-5 lanes in each direction between the M6 and M5; 4 lanes in each direction on M6 north of M42. The submission proposes complementary improvements including replacing M42 J6 with 2 new junctions: a northern junction providing access to the hub, NEC, north Solihull, Coleshill and HS2; and a southern junction providing access to the airport, A45 corridor and surrounding destinations. Based on a two runway airport option, the modelling analysis mentioned above suggests that widening of the M42 in various locations, diversion and widening of the A45. These airport-related highway schemes are substantial (including D6 widening of the adjacent M42), and the wider networks impacts of such high traffic volumes may require other local highway improvements.

Accessibility to Population & Business centres

Coventry, Walsall, Wolverhampton, Northampton and Milton Keynes are within 1 hour. The sponsor's analysis of the airport's potential catchment revealed **10.3 million people live within 1 hour, of which 3.1 million had a 1 hour rail catchment.** HS2 is scheduled to open in 2026. The submission claims that a HS2 interchange station at Birmingham Airport would bring an **additional 5 million people within a 1 hour rail journey catchment, and by 2032, 15.1 million people would live within 1 hour (and nearly 75% of total UK population within 2 hours).**

Accessibility to Transport Interchanges

HS2 would provide a **38 minute rail connection to London Euston, 8-11 minutes to Birmingham, 41 minutes to Manchester and 57 minutes to Leeds**. The proposed HS2 Birmingham station would be 1.5km from the existing airport terminal and directly linked to the airport expansion site. A light rail network connection would link Solihull Town centre, Birmingham City Centre, the Black Country and East Birmingham and North Solihull to the airport.

Accessibility to Workforce

The proposed and suggested road and rail schemes would increase the catchment area.

Modal Split Assumptions

Currently, **32% of passengers access the airport by public transport**. The target public transport modal split for passengers is 50% non-car. This consists of the Masterplan's target of 35% public transport with the additional **15% to be made up by HS2, Midland Metro extension, Whitacre Link, and further improvements on the WCML.** This assumption appears to be high.

Demand Management

BIAL recognises that the 50% non-car share is a target. A range of demand management measures are assumed to contribute to achieving this: rail improvements; parking charges; restricted parking; integrated air/ rail ticketing etc and multi-use green corridors for walking/ cycling access.

Potential Wider Use

Road and rail improvements would bring wider benefits to the Midlands, UK Central and the M42 Economic Gateway. The Whitacre Link would enable a direct rail freight connection between airport and businesses/freight depots.

ENVIRONMENT

Overall noise impact	Restricting operations to the new runway alone would reduce the local population affected by aircraft noise, however, using both runways would increase the affected population. The new runway permits fewer people to be affected by night time noise than currently.		Airport	Nett
		$57\ LA_{eq}$	56,000	21,000
		$55\ L_{DEN}$	158,000	

SAC	SPA	Ramsar	RP&G	AONB	SSSI	Listed Buildings	SAM[1]	Houses Lost
-	-	-	1	-	1	12	-	40

	Mitigation Plan
Air Quality **<u>All locations around the airport are expected to meet EU/UK air quality standards.</u>** The location is mainly rural with few receptors for air quality emissions in close proximity.	
Noise Independent noise modelling for comparison provided the following results: ▪ 57LAeq: 56,000 people affected; nett: 21,000 increase ▪ 55Lden: 158,000 people affected.	**<u>Work with local stakeholders and communities to manage and minimise noise.</u>**
Designations **<u>Affects the following River Blythe SSSI within the footprint and 4 SSSIs and a LNR outside the boundary.</u>** **<u>6 listed buildings and a number located nearby.</u>** **<u>Packington Hall Registered Park and Garden would be directly affected.</u>** Part of Packington Hall Registered Park and Garden would be lost and the setting of the remaining park would be severely affected. Our analysis indicates up to 12 listed buildings for the broad template could be affected but while there may be potential to reduce direct losses, the setting for nearby cultural heritage sites will be affected.	**<u>Will require river diversion and mitigation for to ensure no net loss Provision for this assumed in proposal.</u>**
Climate Change <u>Operation:</u> Dependent on total ATMs from wider expansion and expected to be within climate change targets. <u>Construction and demolition</u>: Much lower carbon emissions as opposed to major construction works for a new Hub location.	**<u>Range of measures to minimise carbon emissions.</u>** **<u>Climate change adaptation report provided</u>**
Other Issues **<u>Local sites of Importance for Nature Conservation would be affected by the scheme but could be mitigated for.</u>** Loss of large area of agricultural land (no grade 1 or 2) and loss of a recreational amenity.	**<u>Some habitat compensatory provision indicated as included in costs but no detail given.</u>**

PEOPLE

Housing	Demolished
Mainly commercial properties lost with limited impact on residential properties.	40

Vulnerable Groups

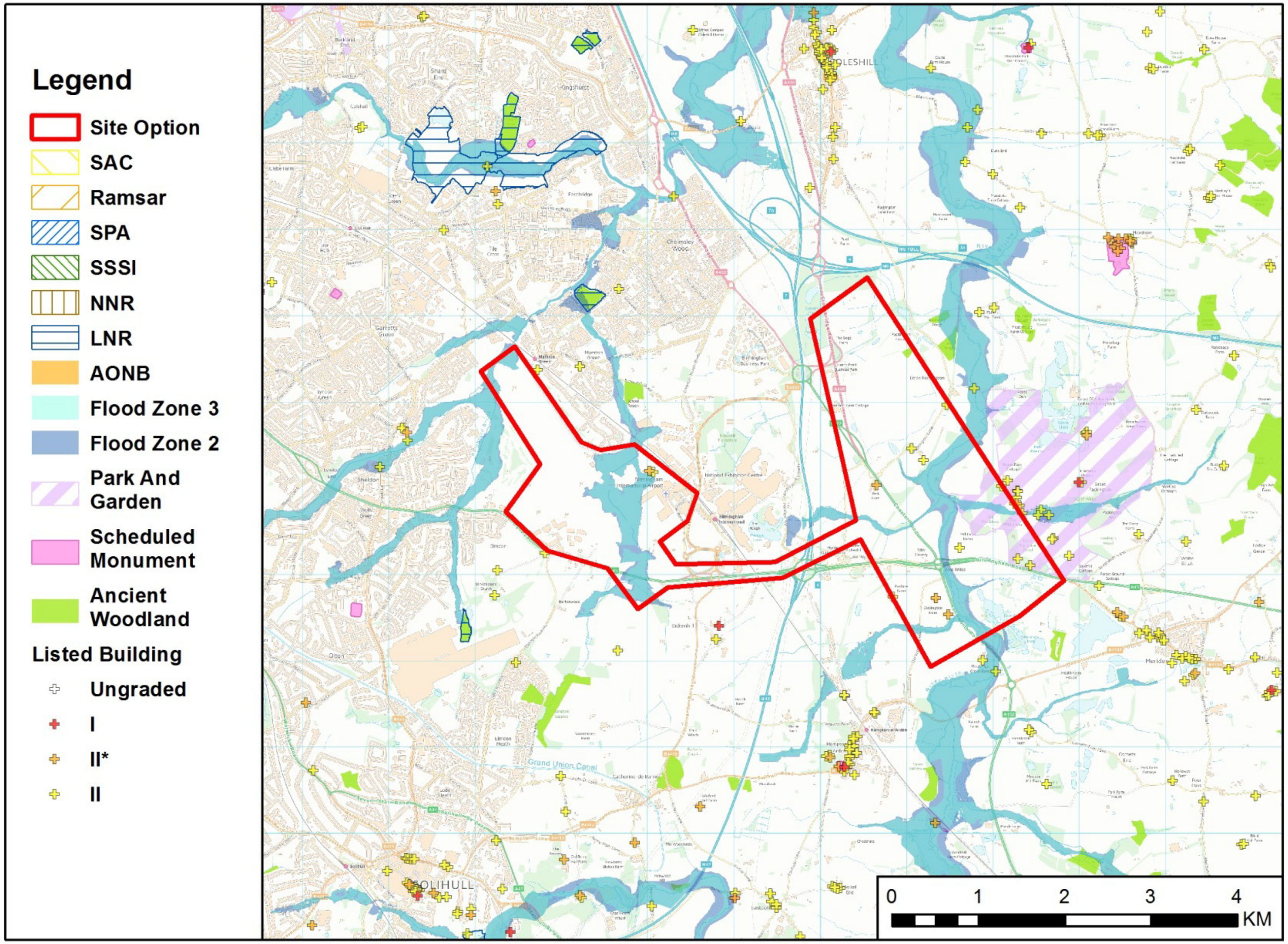
East Birmingham and North Solihul include a high proportion of 'most deprived' wards which could benefit from the opportunities for employment, access to services and connectivity that the expansion could bring.

Quality of Life and Health

- Increased numbers of people affected from the use of both runways although potential to minimise night noise with the use of the second runway further away from high population at night.
- Loss of a local recreation amenity and open space.

Wider Social Impacts

Benefits to Midlands region in terms of access, connectivity and employment opportunities.



Legend
Site Option
SAC
Ramsar
SPA
SSSI
NNR
LNR
AONB
Flood Zone 3
Flood Zone 2
Park And Garden
Scheduled Monument
Ancient Woodland
Listed Building
Ungraded
I
II*
II
SOLIHULL
Grand Union Canal
0 1 2 3 4
KM

PROPOSAL TITLE:	**Birmingham Airport**	Group:	**Dispersed**
SUBMITTED BY:	**Birmingham Airport limited**	Reference No.:	**39**

COST

Capital Cost		£ bn
BIAL estimates a cost of £6.99 bn, unadjusted for bias but including 12% allowance for management and on site costs and a 10% allowance for risks giving a base construction cost of approximately £5.45bn. Cost includes contribution (assumed to be £943m) to M42 works or other surface access improvements. Independent Cost Analysis assesses the scheme to cost £14.8bn.	Airport	5.2
	Access	1.6
	Other	0.5
	Sub-Total	7.3
	Risk	2.6
	Optimism Bias	4.9
	Total	14.8

Key Risks

- Public policy, in particular a commitment to various surface transport schemes.

Risk and Contingency Allowances

Independent assessment based upon a 35% contingency, reflecting the marginally less complex construction environment compared to other schemes, and a 50% optimism bias applied to risk adjusted cost.

Surface Access Costs

£1.6bn estimate for onsite road and rail links and identified improvements off site, based on requirement for infrastructure identified by independent analysis.

Other Off-Airport Costs

Allowance of £0.5bn has been included for typical environmental mitigations measures.

Summary Comments

The submitted cost estimate presented from the perspective of the airport company appears to underestimate the total investment required including surface transport upgrades.

OPERATIONAL VIABILITY

Capacity	Net	Airport	Net
Claimed capacities may be upper limits, but are reasonable long term challenge objectives	Runways	2	1
	ATM	455,400	250,000
	pax	63	36

Resilience, Reliability and Efficiency

The proposal supports independent parallel approaches; however, it essentially creates two runway zones with difficult transfer between the two due to the distance between them.

Safety

The proposal would be designed to comply with safety requirements.

Scalability

Although the proposal is defined within an identified boundary, it appears that additional capacity could be developed if required

Airspace

The proposal would not require significant airspace redesign. The boundaries of the Birmingham CTR and its SIDs, STARS and interfaces with en route airspace would be amended to include the additional runway. However, given the long-term nature of the options and the likely airspace and air traffic management developments under SESAR, restructuring could be achieved as part of the on-going development process. There does not appear to be any negative impact on East Midlands Airport that could not be adequately addressed.

DELIVERY

Timescale

Additional capacity is not required until 2030 allowing sufficient time for planning and construction.

Commercial Deliverability

Range of possible financing approaches indicated but no clear proposed funding/financing strategy. Appears most of the costs of ancillary infrastructure (e.g. surface access) would be publicly-funded in addition to which UK Government guarantees are needed to achieve required private finance.

Range of potential financing possibilities indicated including UK Government-guaranteed Development Corporation.

Combination of publicly-funded surface access infrastructure plus UK Government guarantees could potentially enable strong enough credit rating to attract private investment