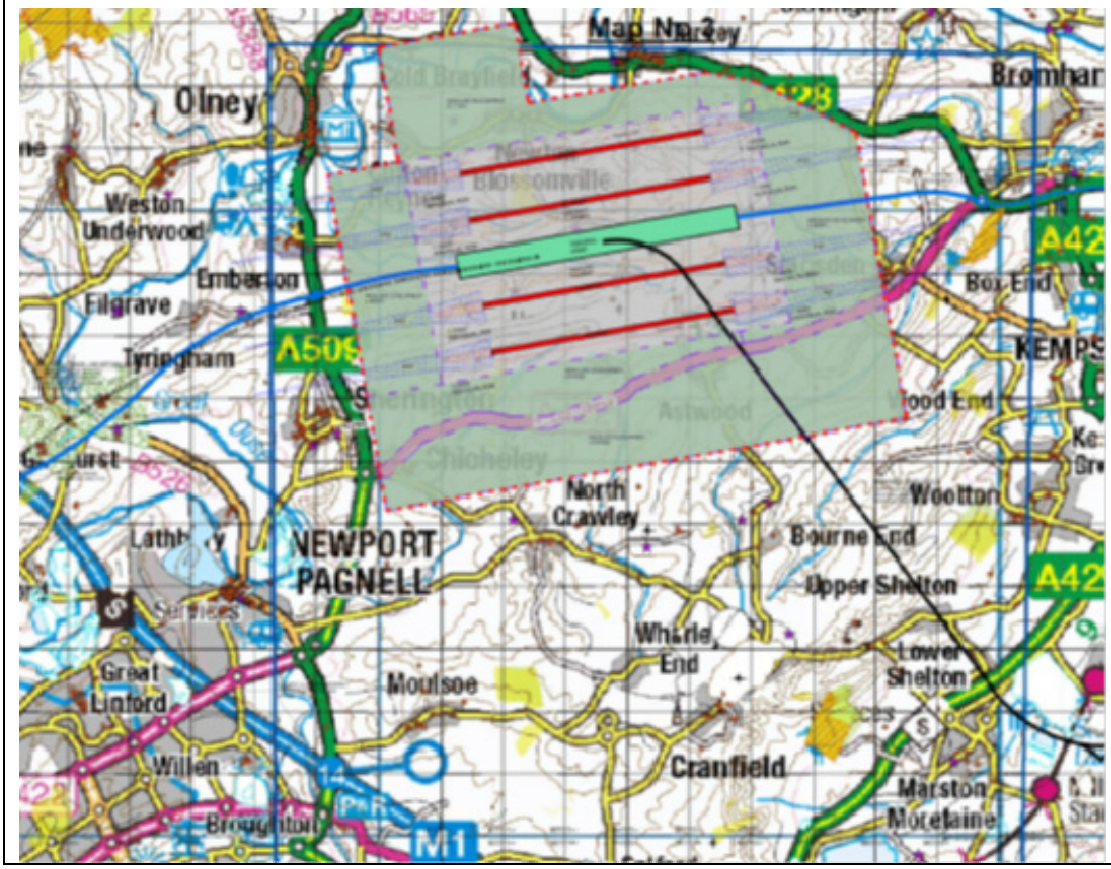
PROPOSAL TITLE:	Milton Keynes/Bedford Airport	Group:	New
SUBMITTED BY:	Airports Commission Secretariat	Reference No.:	44

PROPOSAL

Building a new airport, located between Milton Keynes and Bedford to replace Heathrow and Luton airports. Both existing airport sites would be redeveloped for alternate mixed use purposes.



ASSESSMENT SUMMARY

The scheme is likely to provide a more efficient airport than either Luton or Heathrow airports and provides the opportunity for long term expansion. However, necessitating the closure of both Luton and Heathrow, it adds the least additional capacity to the London system capacity and may limit competitive forces. It may also impact the competiveness of Birmingham Airport and constrain maximum capacity utilisation at Stansted. The low cost sector would be disproportionately affected. It delivers a significant net reduction in population exposed to noise on closure of Heathrow and Luton and the potential for night flights with lower noise impact, however this benefit is obtained at a nuisance cost to currently unaffected communities and is a lower positive effect compared to LOX or any of the estuary options.

The scheme is not currently supported by any relevant body.Should a privately funded approach be adopted a range of support measures may be needed, including government support / commitment and supportive regulatory framework and planning environment. The scale of private financing involved is large and deliverability is not certain despite significant government funding and underwriting of risk.

OVERVIEW

Approach	Government to provide enabling legislation by-2020 would facilitate the closures of Heathrow and Luton the transfer of traffic to the new airport at opening. In parallel government would provide the necessary surface transport upgrades.							**Opening Year**	2030
Capacity	Limited additional system capacity net closure of Heathrow and Luton, with the potential for further reduced capacity given constraint of Stansted's ability to make maximum use of its single runway. The LCC sector would be disproportion disadvantaged with capacity at both Luton and Stansted negatively impacted.							**Airport**	**Net**
							Runway	**4**	**1**
							ATM	**715,000**	**85,000**
							pax	**128**	**20**
Cost						**Airport**	**Access**	**Other**	**Sub Total**	**Including Risk/OB**
						15.2	2.7	0.5	18.4	38.7
Surface Transport	▪ Over 40 minutes from London by rail. ▪ Available train capacity uncertain. ▪ Potentially good rail links to Birmingham and Manchester. ▪ Relies on congested M1/A1 for highway access.							**1 hr isochrone**	14
								2 hr isochrone	22
								London centre	50 miles
Economic	**Borough**	**Milton Keynes**		**Northampton**		**Bedford**		**Central Beds**	**Luton**
	Unemployment (%)	8.5		7.7		7.3		6.1	9.4
	Ave. Salary (£/yr)	27,903		24,050		26,905		29,110	25,111
	County	**Northamptonshire**		**Bedfordshire**		**Luton**			
	GVA (£/capita)	19,812		15,883		21,829			
Environment	Significant impact on good quality agricultural land, on setting of villages, cultural heritage and recreation interest. Surface access route through Registered Park & Garden. Potential to urbanise largely rural area.							**Airport**	**Net**
							57 LA_{eq}	39,000	(207,000)
							55 L_{DEN}	89,000	
	SAC[1]	**SPA**[1]	**Ramsar**	**CA**[1]	**AONB**[1]	**SSSI**[1]	**Listed Buildings**	**SAM**[1]	**Houses Lost**
	-	-	-	-	Affected	-	5	3	430

[1] SAC: Special Areas of Conservation; SPA: Special Protection Areas; CA: Conservation Area; SSSI: Site of Special Scientific Interest; SAM: Scheduled Ancient Monument.

ECONOMY

Borough	Milton Keynes	Northampton	Bedford	Central Bedfordshire	Luton
Unemployment (%)	8.5	7.7	7.3	6.1	9.4
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Impact on Industry

Replacing Heathrow (a 2 runway airport fully utilised) and Luton (a single runway airport at 49% utilisation) with a new airport with four runways (essentially adding 1.5 runways) will create benefits by allowing new services and reducing operational costs due to operation of a more efficient airport (potentially offset by increased landing charges to recover capital costs of construction). The airport will be readily accessible to London and local labour markets servicing Luton today. It will free up land at Heathrow helping address demand for land for housing. However, its utilisation of airspace is such that it would be likely to prohibit expansion at Stansted and may restrict the airports' ability to utilise its existing capacity.

Airports	The airport would compete directly with Birmingham, attracting users from its catchment, delaying the likelihood of expansion of capacity there. It may prevent expansion at Stansted, and may restrict its ability to make maximum use of its existing capacity. Given closure of Heathrow and the existing Luton airport, a 4 runway Bedfordshire hub would be equivalent to one additional runway with better utilisation of around 50% capacity currently located at Luton. Expansion at Stansted would be delayed and may be affected by the behaviour of existing Luton based LCCs.
Airlines	Airlines using Heathrow and others seeking to use it would benefit from the increase in capacity enabling new direct routes, higher frequencies and competition and reducing delays, because of sufficient capacity for resilience. Greater competition than at Heathrow and reduced airline 'slot' values will have a modest countervailing effect on some airlines. Interline traffic would have more potential to increase, enhancing the viability of more direct routes, particularly by airlines based at the new hub. LCC and charter airlines would face less choice of airports, give Luton's replacement with a new hub airport.
Passengers	Passengers will benefit from increased capacity at the new site via delay reductions, a greater choice of destinations/enhanced frequencies, more competition (reducing fares) and faster terminal throughput times. Access and connectivity for the Midlands would improve noticeably with possible West Coast Main Line interchange for passengers to Birmingham and the North; travel times to London would only marginally increase given the proximity to the M1, Midland Main Line (including Thameslink) and the West Coast Main Line. Low cost passengers, previously using Luton, may experience increased travel times to other airports.

Local & Regional Economic Impacts

The new site providing an expanded airport with sufficient capacity to meet expected medium term demand would facilitate growth of new and existing industries in aviation, airport and aviation support services and travel, tourism, logistics and other related sectors, to service the growth in passenger and freight demand met by the new airport. Most of these businesses will have relocated from the vicinity of Heathrow with the associated resource costs of relocation. The immediate effect will be to increase commercial property development in the vicinity of the new site, but there will also be significant potential to redevelop the Heathrow site for both commercial purposes and residential development. The agglomeration effects of the existing Heathrow/Thames Valley/M4 corridor will be diluted significantly, as such businesses may prefer to locate closer to the new airport around Milton Keynes/M1/WCML. Reduced noise impacts are likely to have a modestly positive effect on land prices to the east of the Heathrow site, offset by some negative impacts closer to the new airport. There would be significant dislocation of employment, with many employees needing to relocate, although relatively lower housing prices around nearby towns of Northampton and Bedford may mitigate impact. Many employed at Luton will face a relatively higher priced commute.

National Economic Impacts

The main national economic impacts come from the provision of new capacity, enabling more flights and connectivity, and the increase in business and leisure trips, and trade in goods and services (and the indirect effects on inward investment. Increased choices of flights and airlines, reducing travel time and fares should generate significant consumer/welfare benefits. The benefits would be offset by higher access costs from London (although lower costs for the Midlands and the North).

Time/Distance to Central London	1 hr isochrone population	Key required upgrade schemes
40 mins	14	▪ New junction on M1 and 7 mile D3 airport spur road
50 miles		▪ New 4 mile D2 link to A442/A428
Journey times to other population centre	**2 hr isochrone population**	▪ Capacity improvements to M1 between M25 and new junction
		▪ New 7 mile rail spur to the WCML or a new 8 mile rail spur to the MML
Birmingham 50 mins	22	▪ Capacity improvements on the WCML and/or MML
Manchester 90 min		▪ London terminal capacity improvements

Rail Infrastructure Capacity Analysis

The airport is located between the West Coast Main Line (WCML) 7 miles away and the Midland Main Line (MML) 8 miles. Connecting the airport to London Euston via the WCML and London St Pancras via the MML both have their advantages and disadvantages. The MML option would comprise an 8 mile 2-track spur to the south of Bedford near Ampthill. Further analysis is required to determine whether the current 4 tracks of the MML south of Bedford could accommodate the extra airport express train paths. A direct non-stop airport express service to London via the MML to St Pancras would take around 40-60 minutes using airport specific rolling stock, though probably no more than 2-3 per hour given the limited route capacity and terminus capacity at St. Pancras. Some Thameslink stopping services from Luton could be extended to the airport and potentially some Thameslink Bedford services could be diverted from their current terminus at Bedford to the airport, although this would have a negative impact on the capacity of this line, particularly for commuters. A northern link could be provided at the Ampthill junction to allow direct service patterns from towns and regional centres north of the airport. The WCML option would comprise a 7 mile 2-track spur from the WCML to the north of Newport Pagnell. Further analysis is require to determine whether the current 4 tracks of the WCML south of Newport Pagnell could accommodate the extra airport express train paths though there is unlikely to be more than 6 trains per hour capacity, possibly some further gains to be had with rerouting of freight services. An airport express service to London via the WCML to Euston would take around 40 minutes using airport specific rolling stock. A northern link could be provided at the Newport Pagnell junction, to allow some direct service patterns from towns and regional centres to the north including Birmingham and Manchester.

Highways Capacity Analysis

Two new road access links to the airport are proposed: a spur from a new junction on the M1 to the west and a new link from the A422/A428 to the east. The motorway junction and associated spur would be a 3 lane link (D3) in each direction with an additional bus lane on the eastbound carriageway. The new motorway spur would head from the M1, with a new grade separated junction at the A509 to the south of Emberton, before continuing eastwards to the airport. A further access is proposed from a new A422/ A428 junction to provide a 2 lane dual carriageway (D2) access route into the site from the east. The M1 between junctions 14 and 15 is currently operating at a v/c ratio of between 75%-85% during the peak periods, particularly in a northbound direction during the PM peak. Thus the addition of a substantial amount of new airport traffic would require an upgrade/enhanced management of the existing 3 lane motorway to 4. Depending on further work and traffic modelling potentially a new corridor to London may need to be explored.

Accessibility to Population & Business centres

The airport is located 56 miles from central London. A car journey would take around 1 hour 45 minutes in peak periods and 1 hour 30 minutes off peak. An airport express rail services would take around 40 minutes to get to London terminal stations. If the Midland Mainline and St Pancras rail option is chosen, some Thameslink paths could be utilised providing services to City Thameslink in 50 minutes and East Croydon in 70 minutes. Services to the north could be provided via the West Coast or Midland Mainline.

Accessibility to Transport Interchanges

Surface access connections to the airport would provide good rail connections to either Euston or St Pancras, and good local road connections to Milton Keynes and Bedford and national road connections via the M1.

Accessibility to Workforce

The airport is outside the catchment area of the Heathrow workforce, but with the closure of Luton, these staff could transfer to the new airport. Existing Heathrow employees would have long commuting patterns and may choose to relocate home in the medium term. Milton Keynes, Bedford and Luton would provide a supply of employees.

Modal Split Assumptions

As rail would offer a significant time saving over road travel to London and a number of destinations to the north could be served by direct rail links, a public transport mode share of over 50% should be achievable.

Potential Wider Use

An element in the choice of rail connection is the impact of HS2 providing additional capacity for conventional rail services on the WCML and MML and potentially additional platform capacity at Euston and St Pancras. A disadvantage of the WCML spur is that it generates extra dispersal demand at Euston station, which is predicted to be overcapacity with HS2 even without this airport express rail service. An advantage of the WCML spur is that some airport express trains could be scheduled to stop at Milton Keynes, providing Milton Keynes with an improved train service to London.

ENVIRONMENT

Overall noise impact								Airport	Net
							57 LA_{eq}	39,000	(207,000)
							55 L_{DEN}	89,000	
	SAC	SPA	Ramsar	CA	AONB	SSSI	Listed Buildings	SAM	Houses Lost
	-	-	-	-	Affected	-	5	3	430

Air Quality New Hub: Nearest AQMAs are located in Olney centre and Bedford Town centre. Impact on air quality is likely to be local to the airport or related to increased traffic on access roads. Direct impacts on Olney and Bedford town centre AQMAs expected to be low although there could be an indirect increase in traffic generated through additional development related to employment and business opportunities. Potential opportunity with new infrastructure for surface access to optimise rail access with lower air pollutant emissions and through airport design minimising taxi distances. Other Airports: As for all new hub options, potential for some local air quality benefits through removal or reduction of Heathrow airport's contribution to local NO_2. Luton airport would close for this option, with removal of airport and related traffic contribution to air emissions locally.	**Mitigation Plan** Development Control: additional development pressure on surrounding towns would need to consider traffic generated and air quality impacts, especially for existing AQMAs. Surface access and airport air quality strategies to minimise air pollutant emissions.
Noise Local: significant increase in noise for a population of around 39,000 at 57LAeq. This is within an area currently little affected by aircraft noise. A small percentage of this population will be located in rural more tranquil surrounding villages; the greater proportion will be within the small towns of Bromham and Kempston and urban areas of north west Bedford. The airport would cause a significant loss of tranquillity for this population. National: overall net improvement with reduced aircraft noise nuisance (defined by 57LAeq 16 hr contour) from removal of Heathrow and Luton airport benefiting 240,000 people in west London (as for all new Hub locations) and around 6,000 in south Luton: net reduction: 207,000.	**Mitigation Plan** Noise mitigation strategy to minimise noise nuisance including the use of runways to provide relief to populations and minimise nuisance from night time flights. Minimise night flights through appropriate restrictions and incentives to airlines e.g. QC system. Financial assistance for insulation and property purchase schemes.
Designated Sites Airport: 3 Scheduled Monuments and 5 listed buildings are within the footprint. The settings of Conservation Areas and listed buildings in settlements around the airport will be affected these include those in Newton Blossomville, Chicheley, Sherington and Olney and the Registered Park and listed buildings and Garden at Chicheley Hall. Surface access: Road and rail links approaching from the west could pass through the Registered Park and Garden at Gayhurst and result in the loss of ancient woodland.	**Mitigation Plan** Further investigation of cultural heritage and potential archaeological interest with routing studies to minimise impacts Potentially relocate certain listed buildings.
Climate Change Aircraft movements: level of greenhouse gas emissions will be related to aircraft movements and independent of the airport location. All new hub airports could offer more efficient ground and airspace use e.g. reduced stacking and departure queues. Operation: scope to minimise emissions from surface transport, airport buildings and airport transport. Opportunity to encourage modal shift to rail through new infrastructure arrangements. Construction and demolition: As a significant new build, construction will involve high carbon emissions likely to be higher than adaptation of an existing resource. Demolition and reconstruction at Heathrow and Luton airport will also result in additional carbon emissions.	**Mitigation Plan** Mitigation plan required to minimise carbon emissions and to ensure climate change resilience.

Other Issues	Mitigation Plan
Loss of approx. 2,000 ha of good quality agricultural land; includes Grade 2 (very good). Land use is predominately arable agriculture and includes a small 7 turbine wind farm. North western part of the airport near Olney designated as a local 'Area of Attractive Landscape'. Landscape quality of remaining area largely poor/moderate to moderate quality. The setting for the villages of Cold Brayfield, Stagsden, Astwood, Sherington, Turvey and Chicheley and Emberton Country Park, associated recreation amenity and related business will be also affected. Runway PSZs largely located over farmland, but also recreational area north of Emberton and the village of Stagsden. Risk to archaeological interest within undeveloped land. Location not considered vulnerable to fluvial flood risk but upstream of Great Ouse and potential for impact on flood risk from unmitigated run off.	Mitigation plan required to minimise loss of soils, detriment to landscape and visual impacts and provision for drainage. There may be potential to retain buildings of particular value close to the site. Includes significant run off attenuation in design to avoid increase downstream flood risk and pollution control.

PEOPLE

Housing	Demolished
The village of Hardmead with a population of 70 and scattered farm houses/buildings will be demolished. Villages close to the runway that may also need to be demolished or abandoned including Newton Bloomsville, and Clifton Reynes with combined population of around 280 with approx. 100 dwellings. The scheme will increase demand for housing in the Milton Keynes and Bedford area and is likely to further increase pressure on greenfield sites around current settlements. For all new hubs - potential opportunities for significant housing development at Heathrow depending on closure or level of operations maintained. For this option there would be additional opportunities for the redevelopment, including housing, on the outskirts of Luton.	c 430

Vulnerable Groups

The ward areas around the airport development are largely identified as either least or moderately deprived on the Multiple Deprivation Index. In general, the sparsely populated rural wards are the worst performing areas in the general area, along with wards within the centre of Milton Keynes and Bedford.

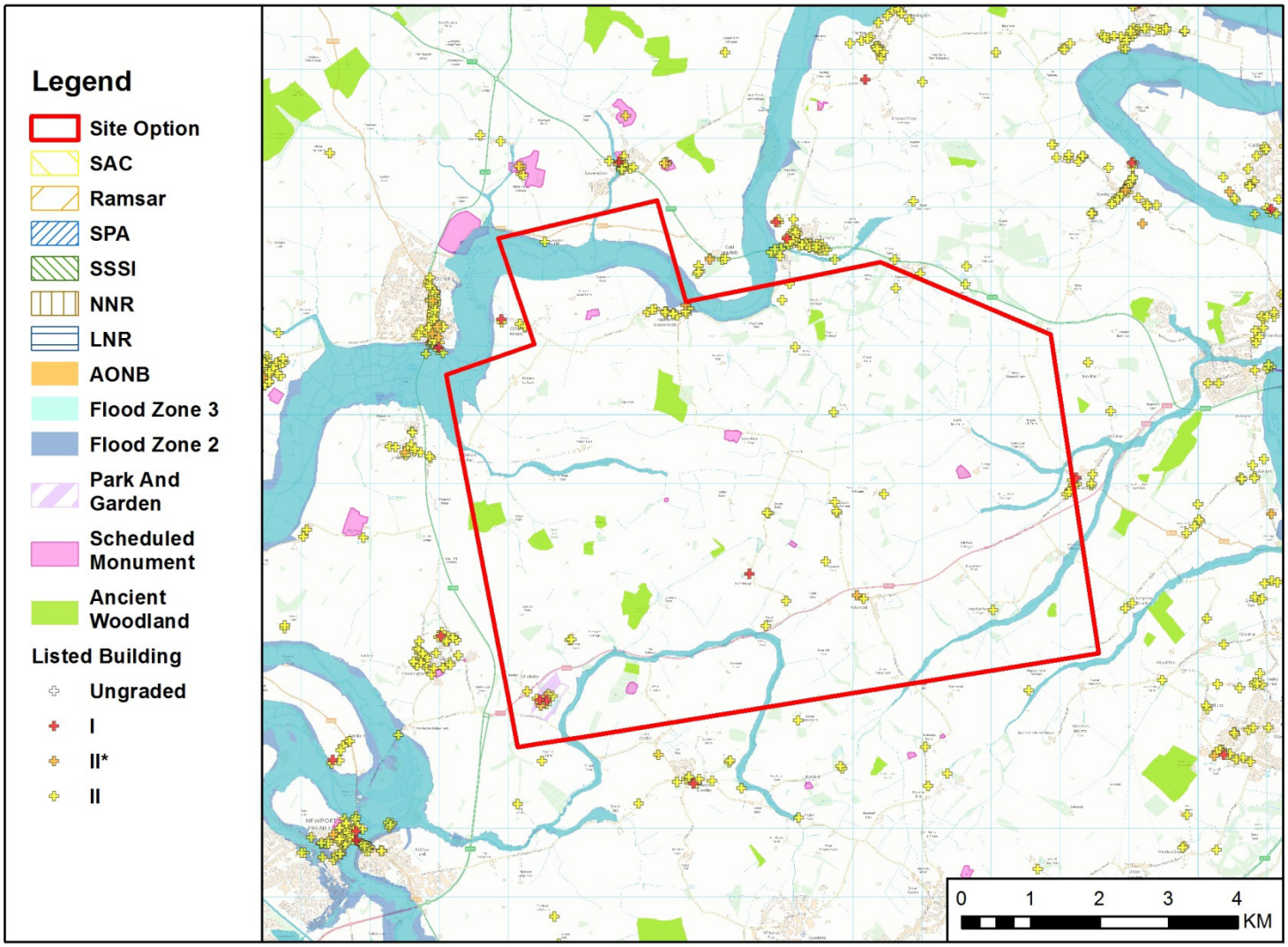
There is a high proportion of most deprived wards around Heathrow. These may be further adversely affected by the loss of the airport as a source of employment, however the proposed airport provides the opportunity for redevelopment of Heathrow which and could include specific provisions beneficial to the vulnerable groups in the surrounding areas.

Quality of Life and Health

The proposed airport will be a major new development within a largely agricultural area and will introduce noise and over flight to Bedford and north Milton Keynes. Quality of life will be affected through the loss of green space and recreational amenity and associated increased surface traffic and pressures from related development. A number of small towns and villages close to the airport will be affected by both the aircraft noise and surrounding ancillary development which will significantly change the character and setting of these settlements. The area could benefit in terms of the additional accessibility and connectivity that can be provided with new surface transport infrastructure and also from improved local services along with employment opportunity. Depending upon the redevelopment of the Heathrow and Luton airport sites, the quality of life for currently affected populations could be improved, principally through the removal of the current noise impact. However there would also be some loss of connectivity and services along with a major source of local employment.

Wider Social Impacts

There are likely to be additional impacts from in-migration of working population in terms of increased pressure on services such as health, housing and education and changes to population mix and health issues. Additional pressure on housing and housing/rental could reduce affordability for the existing population. Social impacts at Heathrow and Luton would depend on redevelopment of the airport sites and the extent they can provide for housing and employment needs..


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
0
1
2
3
4
KM

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COST

Capital Cost

	£ bn
Airport	17.3
Access	7.9
Other:	1.0
Sub-Total	26.2
Risk	10.9
Optimism Bias	18.5
Total	55.6

Key Risks

- Delivery of enabling legislation.
- Delivery of off-site surface transport links (assumed to be financed and delivered by government and in some cases via PPPs).

Risk and Contingency Allowances

40% contingency adopted for airport works. 50% contingency adopted for surface access costs reflecting the greater uncertainty of scope and complexity of extending links into London. 50% optimism bias applied to all costs.

Surface Access Costs

£0.9bn estimate for road and rail links based on site requirement for infrastructure identified by independent analysis, with further allocation of £7bn for offsite upgrading of road and rail access. This allocation may underestimate the full cost which could increase the total cost to c £60bn.

Other Off-Airport Costs

An allowance of £0.5bn has been included to cover typical environmental mitigation measures, with a further allowance of £0.5bn for mitigation and/or compensation required ensuring Water Framework Directive and flood risk storage requirements are met.

Summary Comments

On-site airport development costs appear reasonable. Surface transport cost may underestimate the full cost of all requirements.
Costs associated with the closure of Heathrow have been excluded.

OPERATIONAL VIABILITY

Capacity

The new airport may require the closure of Luton should Stansted remain in operation, or should Luton remain fully able to use its capacity, this may cause a reduction in throughput at Stansted. Therefore, the scheme provides relatively limited additional system capacity after the closure of Heathrow and the closure / reduced capacity at either Luton or Stansted. The net capacity shown assumes Luton is closed enabling Stansted to make maximum use of its full capacity. Given these impacts at both Stansted and Luton, thelow cost sector would be disproportionately disadvantaged.

	Airport	Net
Runways	**4**	**1**
ATM	**715,000**	**85,000**
pax	**128**	**20**

Resilience, Reliability and Efficiency

Resilience depends on a number of factors: utilisation rates; mode of operations; and schedule shape.
The proposal supports independent parallel approaches on the two centre runways and segregated operations/independent parallel departures on the two outer sets of runways. It is not clear when this operational configuration will become a limit on capacity. The proposal could be defined to meet resilience targets.

Safety

The runway configuration requires runway crossings to access the outer runways. There does not appear to be any need to overfly significant population centres on final approach or immediately after departure.

Scalability

Although the proposal is defined within an identified boundary, it appears that additional capacity could be developed if required. More flexible modes of runway operation should support additional movements before further development is required.

Airspace

The proposal would require significant considerable airspace design in terms of relocating the boundaries of the London terminal manoeuvring area (LTMA), SIDs, STARS and interfaces with en route airspace. The LTMA would extend from the new airport in the north to Gatwick in the South. 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 would not need to be any change of international boundaries.

It is uncertain that the new airport, Luton and Stansted could all operate without constraint. Approaches to Stansted may conflict with the new airport and do already interact with Luton's. Maximum use of the new airport may force the closure or severe reduction of Luton to enable Stansted to operate at its full single-runway capacity, and may not permit future expansion of Stansted.

DELIVERY

Timescale

Depend upon public policy, assumed through the 2015-2020 government, developed through the 2020's opening 2030.

Sources of funding

Funding proposed to be from government (including grants, procurement of certain surface access, payment of running yield during construction) and ultimately from passengers/users/airlines (other than elements subject to government guarantees that are not passed through to end users).

Public funding

Assuming government grant monies of c£23 billion likely to comprise significant debt funding (mainly bond) and limited equity investment.

Private funding

Peak financing requirement of circa £32bn assuming interest is capitalised during construction at 6%. Likely to comprise significant debt funding (mainly bond) and limited equity investment.

Commercial/financial structure (e.g. RAB, PPP, other)

RAB structure for new airport plus PPP/conventional government procurement for surface access and utility company finance for utilities.

Commercial Deliverability

Even with government grant the scale of private financing challenge is very significant, but may be achievable subject to regulatory structure and comprehensiveness of government support package. Raises major taxpayer value for money questions plus could impact government balance sheet treatment. Without grant funding landing charges would need to rise to levels that are likely to be unsustainable if the airport were to remain competitive.