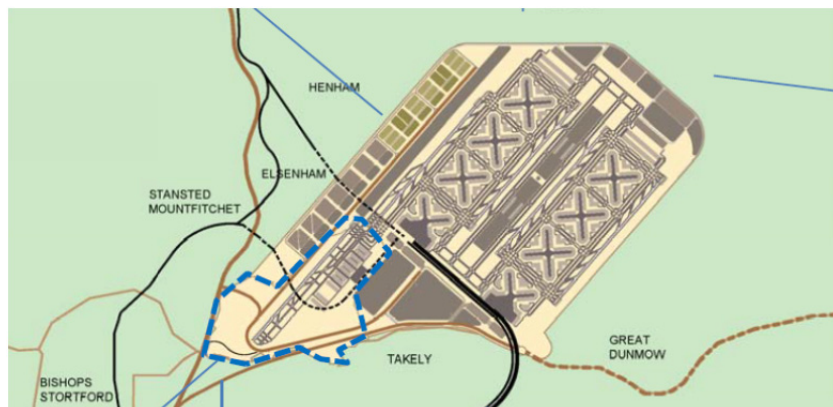


PROPOSAL TITLE:	Stansted Hub	Group:	Existing
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PROPOSAL

Proposal for the provision of five independent runways at the existing Stansted airport site, including the current runway. Heathrow would close on opening of the new hub airport.

The existing runway and terminal zone is retained as a largely separate entity adjacent to the new four runway hub airport.



ASSESSMENT SUMMARY

STRATEGIC FIT / ECONOMY / OPERATIONS				ENVIRONMENT		
Runways (net increase)	Passengers (net mppa)	ATMs (net)	London Airports Impact	57 dBA Leq 2030 pop'n with scheme	Listed Bldgs Grades I&II*, SM, CA, RP&G	Heritage & Designations Affected
▶ 2 ◀ 1	▶ 62 ◀	370,000	LHR ✖	1,400	0	<div>SPA</div>
	60	▶ 317,000 ◀	LGW ➡	2,500	3	<div>Ramsar</div>
	53	268,000	STN ➡	6,300	4	<div>SSSI</div>
	46	260,000	LTN ➡	142,600	5	<div>Grade I</div>
	40	250,000	LTN ⬇	144,000	8	<div>Grade II*</div>
	34	222,500	LCY ⬇	144,600		<div>Sched. Mon.</div>
	30	190,000		180,900	▶ 14 ◀	

SURFACE ACCESS			COST / DELIVERY		PEOPLE	
45 min Population (millions)	1hr Population (millions)	2hr Population (millions)	2030 Risk- Adjusted Total (£bn)	Aero Yield (relative to LHR Q6)	Houses Demolished	IMD (Average within 5km)
17	18	38	9-13	1.3x	200	26
14	▶ 16 ◀	36	10-13	1.5x	260	21
10	14	▶ 27 ◀	13-18	1.6x	720	20
▶ 9 ◀	13	25	16-22	▶ 2.4x ◀	▶ 800 ◀	19
6	16	20	▶ 50-67 ◀		1,300	14
			82-112	3.4x	1,500	▶ 8 ◀
					1,600	7

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OVERVIEW

Approach	Government led initiative to acquire Heathrow, construct the essentially new airport at the existing Stansted airport, supporting infrastructure, transfer operations and redevelop the Heathrow site before sale of both assets, with opening in 2029. This assessment includes two surface access options: with and without a new high speed rail link to central London.									Opening Year 2029
Operational Viability	Not clear whether the existing runway could be operated as proposed. The total capacity appears optimistic. The closure of Heathrow and reductions at Luton and London City offset capacity increase. LCC sector may be disproportionately affected.				Capacity	Airport	Net	Forecast Use of Maximum Capacity		
Runways					5	2	2030	2050		
ATM					1,250,000	317,000	60%	90%		
pax					210	62	55%	90%		
Cost	Surface access options as below.	£b	Airport	Access	Other	Total	Risk	OB	Risk Adjusted Total	Promoter Estimate
	A	2030	12-17	11-15	~1	24-32	9-13	17-22	50-67	£67.8bn
		2050	19-25	16-22	~1	36-48	14-19	25-34	75-101	
	B	2030	12-17	15-20	~1	28-38	11-15	20-27	59-80	
		2050	19-25	16-22	~1	36-48	14-19	25-34	75-101	
Surface Access	Option A: 4 tracking the WAML between Coppermill Junction and Stansted Mountfitchet; new junction and new access on the M11, 1 lane widening on the A120 from the A10 the A131, 1 lane widening on the M11 J6-8 and 1 lane widening on the M25 J15-27. Option B provides for a new high speed non-stop airport express rail service from Stansted to St Pancras and Crossrail 2 from Tottenham Hale to Stansted via Cheshunt.								Isochrone	Pop ⁿ (million)
									45 min	9
									1 hr	16
									2 hr	27
									London centre	30 miles
Economic	Borough	Uttlesford		East Herts		Harlow		Broxbourne		Enfield
	Unemployment(%)	3.7%		4.4%		10.5%		5.9%		10.5%
	Ave. Salary (£/yr)	29,968		32,765		26,733		29,630		28,850
	Borough	South Cambs		Epping Forest		Welwyn Hatfield		North Herts		Stevenage
	Unemployment(%)	4.1%		5.7%		5.3%		6.9%		7.6%
	Ave. Salary (£/yr)	31,938		29,016		32,448		28,314		32,183
	County	Hertfordshire		Essex ex UAs		Cambs ex UAs		Outer London E&NE		
	GVA (£/capita)	23,073		16,707		21,598		13,428		
Environment	<div>Local net increase in population affected by noise within 57 dBA L_{eq} by 2030. Net effect on the system from Heathrow closed and reduced capacity at London City and Luton giving a large overall reduction in the population affected by noise at 57 L_{eq} by 2030.</div> <div>1 SSSI lost but no direct impacts on Natura2000 sites.</div> <div>Significant impacts on cultural heritage with over 150 listed buildings within footprint including 2 Grade I and 7 Grade II*, 4 Scheduled Monuments and 1 Registered Park and Garden. This option has the greatest impact on designated cultural heritage interest of all options.</div> <div>Significant impacts on good quality agricultural land (~2,400ha classed Grade 1 and 2). A number of villages would be lost: Molehill Green, Brick End, Bamber's Green, Great Eastern, Little Eastern, Butchers Pasture.</div>						57 dBA L _{eq}	2012 local	1,250	
							2030 local - with scheme		13,500	
							2030 Net Local Impact		12,000	
							2030 system - with scheme		57,660	
							2030 Net System Impact		(188,040)	
							55 L _{DEN}	2030	50,700	
							50 L _{night}	2030	14,600	
							N70	2030	11,900	
	SAC ¹	SPA ¹	Ramsar	CA ¹	AONB ¹	SSSI ¹	Listed Buildings	SM ¹		
	-	-	-	-	-	1	157	4		
People	Populations in the Stansted area have the lowest IMD score of all options.								IMD 8	Houses Lost 800
Delivery							Aero Yield Increase	Airport Only	Including Access	
							Indexation	0%	~40%	
							No indexation	0%	~140%	

¹ SAC: Special Areas of Conservation; SPA: Special Protection Areas; CA: Conservation Area; AONB: Area of Outstanding Natural Beauty; SSSI: Site of Special Scientific Interest; SM: Scheduled Monument.

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ECONOMY

Borough	Uttlesford	East Herts	Harlow	Broxbourne	Enfield
Unemployment (%)	3.7%	4.4%	10.5%	5.9%	10.5%
Ave. Salary (£/yr)	29,968	32,765	26,733	29,630	28,850
Borough	South Cambs	Epping Forest	Welwyn Hatfield	North Herts	Stevenage
Unemployment (%)	4.1%	5.7%	5.3%	6.9%	7.6%
Ave. Salary (£/yr)	31,938	29,016	32,448	28,314	32,183
County	Hertfordshire	Essex ex UAs	Cambs ex UAs	Outer London E&NE	
GVA (£/capita)	23,073	16,707	21,598	13,428	

Impact on Industry

Although, with Heathrow closing and restrictions at Luton and London City the scheme only provides a net increase of two additional runways, passenger capacity would increase. This creates benefits by allowing new services and reducing operational costs due to operation of a more efficient airport and increased runway capacity with better utilisation. This would support growth of aviation, tourism, logistics and related support businesses. It would allow significant expansion of airlines based in London (assuming most moved existing operations from Heathrow), and a significant improvement in connectivity to a wide range of long haul destinations, Europe and in connecting other parts of the UK to long haul destinations. It is likely to help increase the share of airline traffic carried by UK based network carriers. The benefits may be offset in part by increased landing charges to recover costs of construction, and being less well located for the airlines' prime passenger market than Heathrow. It would free up land at Heathrow for redevelopment.

Airports	Luton and London City airports would be significantly reduced in capacity for airspace reasons and Heathrow also closed to facilitate large scale expansion at Stansted. Although relatively small, capacity at Southend would also be lost. The airport would attract network traffic away from Gatwick; however it is not clear whether this would be sufficient to continue to accommodate the low cost traffic displaced from Luton. The proposal allows the existing Stansted infrastructure to service low cost traffic; however this may provide insufficient capacity and may be difficult implying different charging structures. The low cost sector may be disproportionately impacted, with Gatwick remaining the only dedicated low cost facility in the London system. Gatwick, Southampton, Birmingham, etc may seek to expand, but competition between airports around London would be significantly reduced.
Airlines	As with any other major new hub airport displacing Heathrow, airlines currently using Heathrow and others seeking to use it would benefit from the increase in capacity allowing new direct routes, higher frequencies, reduced delays, because of sufficient capacity for resilience. LCC and charter airlines would not find sufficient capacity in dedicated airports and may have to share, though this may facilitate growth at Gatwick, Southampton, Birmingham, etc. Interline traffic would have more potential to increase, enhancing the viability of more direct routes, particularly by airlines based at the new hub, because of increased destinations and improved timings to facilitate connections.
Passengers	Passengers would potentially 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. Surface transport travel times and costs would increase on average for typical customers in London and most of the South-East, albeit only modestly, and with reductions in travel times from the Midlands, Essex, Suffolk and the areas adjacent to Luton. The closure of Heathrow and reduction of Luton and London City would be detrimental to passengers local to those airports.

Local & Regional Economic Impacts

The airport is located in Uttlesford district, and close to East Hertfordshire, an area of low unemployment. Whilst many other surrounding areas have low unemployment, Harlow and Enfield have high unemployment and are of easy access to the airport. Adjacent areas have relatively low economic product. Providing an expanded airport with sufficient capacity to meet expected long 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. Many of these businesses would have relocated from the vicinity of Heathrow. The M11 corridor would likely become an important agglomeration. The immediate effect would be to increase commercial property development in the vicinity of the new site, but there would also be significant potential to redevelop the Heathrow site for both predominantly residential development. The agglomeration effects of the existing Heathrow/Thames Valley/M4 corridor would be diluted, as such businesses may prefer to relocate. Reduced noise impacts are likely to increase residential land prices to the east of the Heathrow site, but also areas with easy access to the new airport (which are not exposed to high noise levels), though there would likely be some smaller negative impacts closer to the new airport in areas exposed to high levels of noise. There would be dislocation of employment, with many employees needing to relocate, perhaps to areas of higher house prices around Stansted. Existing commuters in the area may experience increased congestion and travel costs, despite the improved transport connections. The scale of direct and indirect employment would be in proportion to the numbers of additional passengers.

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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 indirect effects on inward investment. Increased choices of flights and airlines, reducing air travel time and possibly fares, should generate significant consumer/welfare benefits. These would be offset by higher access costs from London, although lower costs for the airport's hinterland.			

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SURFACE ACCESS

Time/Distance to Central London	Isochrone pop ⁿ (million)	Key required upgrade schemes	
~50 minutes 30 miles	45 min 9	<ul style="list-style-type: none"> Second rail tunnel on airport branch Option A: WAML 4 tracking; 6tph 	<ul style="list-style-type: none"> 2 tph services to Cambridge and Birmingham
Journey times to other population centres	60 min 16	<ul style="list-style-type: none"> 12-car Stansted Express services to Liverpool St; and 2 tph 8-car Stansted Express services to Stratford. 	<ul style="list-style-type: none"> Additional 2 tph local rail connections to Braintree
Birmingham: 1hr 50mins Manchester: 2hr 30mins	120 min 27	<ul style="list-style-type: none"> Option B: new non-stop 4tph high speed airport express service from Stansted to St Pancras; and Crossrail2 extension from Tottenham Hale to Stansted via Cheshunt, with 4tph. 	<ul style="list-style-type: none"> Additional M11 junction and access link. M11 widening J6-8 M25 widening J15-27 A120 widening from A10 to A131 Local highway and access road improvements

Modal Split Assumptions

Currently 51% of passengers use public transport modes to access Stansted, (27% using bus/coach services and 24% using rail) and 23% of employees use public transport. Of the two surface access options described in the following section, Option A sets the public transport mode split at 55% (30% rail and 25% bus/coach) for passengers and 30% for employees (12.5% rail and 17.5% bus/coach) lower than the 65% proposed, reflecting the improved Stansted Express rail service, but without the high speed rail service. Option B is more in line with the promoter's submission, for which 65% for passengers and 75% for employees were proposed; however, these are considered optimistic since they far exceed the levels at any UK airport (Heathrow ~30%, Stansted 24% and Gatwick 29%). We assumed a public transport mode split of 60% (45% rail and 15% bus/coach) for passengers and 35% for employees (15% rail and 20% bus/coach).

Rail Infrastructure Capacity Analysis

A number of rail infrastructure projects are already committed. These include: the delivery of 12 car trains for the Stansted Express, the addition of two new platforms at Cambridge and the extension of platforms at some intermediate stations between Stansted and London; the completion of the Thameslink project in 2018 which would extend Thameslink to Cambridge and thus divert some longer distance demand from the WAML and improved interchange possibilities at Finsbury Park and an increased frequency on the Great Northern Hertford Loop, which should divert demand from Hertford East and Enfield Town, thus relieving the West Anglia Inner services.

Two options for further rail enhancements are considered: Option A represents a more minimal solution, whereas Option B, broadly in line with the submission, offers a higher quality service.

Option A includes the construction of a second tunnel under the runway on the Stansted airport branch and the 4-tracking of the West Anglia Main Line (WAML) between Coppermill Junction and Stansted Mountfitchet to enable a 40 minute journey time between Stansted and London Liverpool Street to be achieved. However this option does not include a new dedicated Airport Express high speed rail service or the extension of Crossrail 2 to the airport (both as proposed). On the advice of Network Rail, assumed a maximum of 6 12-car Stansted Express trains per hour (tph) to Liverpool Street, due to capacity limitations at the 'throat' of Liverpool St Station, with a further 2 8-car tph from Stansted to Stratford. 2tph from Stansted to Cambridge/Birmingham and 2tph on a local link to Braintree.

Peak hour one-directional rail flows to/from Stansted on a 'busy day' in 2031 estimated to be ~3,200 passengers per hour in the peak direction (pphpd). Based on the current geographic distribution of airport-related rail trips estimated one-way peak hour airport-related demand on each service: Stansted Express to Liverpool St (2,300); Stansted Express to Stratford (450); Cambridge/Birmingham (300) and Local Braintree (200). Volume/capacity (v/c) ratios for airport-related demand on the services estimated as: Overall (0.70); Stansted Express to Liverpool St (0.65); Stansted Express to Stratford (0.65); Cambridge/Birmingham (0.75) and Local Braintree (0.25). As the Stansted Express is primarily used by airport-related traffic, we conclude that there is sufficient capacity to cater for the airport-related demand. Furthermore, there is enough capacity on the Cambridge/Birmingham and Braintree services for other commuter and leisure users.

Option B includes a new, 30 minute, non-stop high speed airport express rail service from Stansted to London St Pancras; the extension of Crossrail2 from Tottenham Hale to Stansted via Cheshunt and the construction of a second tunnel under the runway on the Stansted airport branch. This option would provide for a step-change in the quality of the rail service access and almost halve the existing journey times and provide greater reliability as trains would be running over dedicated tracks. The proposals are similar to the submission, but have a single London rail terminal at St Pancras, rather than bifurcating the line and having London terminals and St Pancras and Waterloo.

Peak hour one-directional rail flows to/from Stansted on a 'busy day' in 2031 estimated to be ~4,600 pphpd. Based on the current geographic distribution of airport-related rail trips, estimated one-way peak hour airport-related demand on each

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<p>service: High speed airport express (3,000); Crossrail2 (1,000); Cambridge/Birmingham (350) and Local Braintree (250). v/c ratios for airport-related demand on the services estimated as: Overall (0.55); High speed airport express (0.95); Crossrail2 (0.30); Cambridge/Birmingham (0.35) and Local Braintree (0.30). As the High speed airport express would solely be used by airport-related traffic there is sufficient capacity to cater for the airport-related demand, and additional services could be provided if demand grows, subject to platform capacity at St Pancras. Furthermore, there is enough capacity on the Crossrail2, Cambridge/Birmingham and Braintree services for other commuter and leisure users, to reduce costs and construction risk.</p>			
<p>Highways Capacity Analysis Estimated additional 3,300 cars per hour in the peak direction (phpd) would arrive at the airport in 2031. This would require a 2nd junction on the M11 with grade separated access all the way to the airport. Estimated additional airport related demand of around 2,200 cars phpd on the M11 J6-8, 600-700 cars phpd on the M25 J15-J23 and 800-900 cars phpd M25 J23-27 necessitating 1 lane widening of all these sections. 400-700 cars phpd on the A120 from the A10 and the A131 and capacity improvements would be required. ~500 cars phpd on the M11 J8-10 and ~500 cars phpd on the M11 J4-6, however the capacity on these sections is predicted to be able to cope with the additional demand and widening is not required. Over a wider area, airport-related traffic dissipates quickly to less than 200 cars phpd and no further road widening is considered required.</p>			
<p>Accessibility to Population & Business centres Stansted is located 50 km north-east of London and 35 km south-east of Cambridge. It is directly connected to London by the Stansted Express rail service, which currently takes c 50 min and runs at a 15 min frequency. The service is relatively slow as the Stansted Express trains have to mix with other West Anglia train services, and there are only 2 tracks north of Copperhill Junction, with few opportunities to pass slow stopping trains. There is an hourly train service to Birmingham, via Cambridge and Peterborough. Stansted has a direct connection with the M11, which provides a D3 motorway south to the M25 and a D2 motorway north to Cambridge. Stansted is also directly connected to the A120. Distances to local towns include: Bishop's Stortford (5km), Great Dunmow (8km), Stansted Mountfitchet (4km), and Harlow (15km).</p>			
<p>Accessibility to Transport Interchanges Current rail links connect Stansted to Liverpool Street via Tottenham Hale (providing a connection to the Victoria underground) and a separate service to Cambridge, Peterborough and Birmingham. Potential access options would improve connection to Liverpool Street or connect to St Pancras.</p>			
<p>Accessibility to Workforce Most of the workforce currently resides in the local towns of Bishop's Stortford, Harlow, Braintree and in East Hertfordshire. With the expansion of the airport, the workforce area would be likely to expand to include Chelmsford, Cheshunt, Enfield and North-East London.</p>			
<p>Demand Management Stansted has a Travel Plan in place for direct and indirect employees and has previously introduced an Airport Travel Card, Employee Car Share Scheme and a Passenger Transport Levy. Passenger and employee travel initiatives and new services would continue to be applied in the future in partnership with Airport Transport Forum.</p>			
<p>Potential Wider Use Highway improvements on the M11 and A120 around Stansted would substantially benefit existing populations, commuters and businesses along associated corridors. The rail improvements would benefit commuters, particularly if the location of the new hub airport was combined with more land being available for housing along the West Anglia Mainline corridor to create demand for more frequent commuter services on the improved railway.</p>			

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ENVIRONMENT

Overall noise impact	By 2030, of the 13,500 people within the 57 dBA contour, 12,400 would be newly affected. *Net system impact is the approximate change from local population currently within 57 dBA L _{eq} contour to population affected in 2030 with Heathrow closed, 50% capacity lost at London City and 80% capacity lost at Luton.	57 dBA L _{eq}						
		2012 local						1,250
		2030 local - without scheme						1,500
		2030 local - with scheme						13,500
		2012-2030 Local Impact with scheme						12,250
		2030 Net Local Impact						12,000
		<hr/>						
		2012 system						269,250
		2030 system - without scheme						245,700
		2030 system - with scheme						57,660
		2012-2030 system impact with scheme						(211,590)
		2030 Net System* Impact						(188,040)
		<hr/>						
		2030 population within 2012 and 2030 57 L _{eq} contour						1,100
2030 additional population within 2030 57 L _{eq} contour						12,400		
55 L _{DEN}						2030	50,700	
50 L _{night}						2030	14,600	
N70						2030	11,900	
SAC		SPA	Ramsar	AONB	SSSI	CA	Listed Buildings	SM
-		-	-	-	1	-	157	4

Air Quality

Limited air quality impacts predicted from airport operations. However extensive surface access improvements would affect existing AQMAs and populations. Negative impact offset by reductions at Heathrow and Luton. Proposer notes possible mitigation to include maximising use of public transport access and potentially restricting access to low emission vehicles only.

Noise

Proposer claims that the new hub airport at Stansted would expose around 12-14k to 57dB in 2050 and suggest careful orientation of the runways and flight paths, the use of noise abating operating procedures to mitigate. Proposer also suggests managing surface access noise through careful siting and planning of new and existing rail and road links.
2030 Forecast: Independent noise modelling provided the following based on 2030 forecast population distribution and aircraft mix appropriate for the number of aircraft movements and passenger load and taking account of housing demolished:

- 57 dBA L_{eq} : 13,500 people affected of which 12,400 would be newly affected.
- 55 L_{DEN} : 50,700 people affected.
- 50 L_{night} : 14,600 people affected.
- N70: 11,900 people affected at the 50 event contour, which is significantly lower than the Heathrow four runway option (~105,000), but higher than the Isle of Grain new hub airport (900).

2050 Forecast: From 2030 to 2050 ATMs forecast to increase by 45% with a consequential noise increase of 2.1dB in overall noise levels, which would affect all contours equally. However, assuming no further change to the aircraft mix, it is considered likely that improvements to aircraft technology would result in quieter aircraft off-setting ATM increases.

Net Noise: Although there is local growth in noise exposure, there is an overall system reduction at 57 dBA L_{eq} of around 188,000 people from 2012. The net system impact is the approximate change for the wider population currently within 57 L_{eq} contour compared to the population that would be affected in 2030 with the Stansted 5 runway hub but Heathrow closed and 50% capacity lost at London City and 80% lost at Luton. This results in a large overall benefit through the reduction in population within the 57 L_{eq} noise contour.

Designations

Ecology:

- Direct loss of a portion of Eastend Wood SSSI and up to 20 blocks of Ancient Woodland.

Cultural Heritage:

- 157 Listed Buildings (including 2 Grade I and 7 Grade II*), 4 Scheduled Monuments and 1 Registered Park and Garden, within development footprint.
- Designated sites nearby are additionally potentially affected by surface transport and associated development.

Landscape and Townscape:

No national landscape designations affected.

Climate Change

Proposer claims 130-140 kg CO₂ per passenger for Air Traffic Movement. 350 kt CO₂ per annum for surface access emissions.

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Operation: A Stansted hub is consistent with meeting UK's legally binding climate change targets dependent on levels of constrained demand. This is the same for all Heathrow runway options and all hub options. Increased efficiency of aircraft movements (in air, on ground) would improve carbon efficiency per ATM / PAX than current operations at congested airports.

Construction/demolition: Construction related carbon emissions: 2.65Mt in a central estimate based on runway, taxiway and terminal build, including some surface access improvements. Similar to the embodied carbon impact of Isle of Grain option, but differences in the footprint of loss of agricultural land compared to new island extension have not been possible to estimate at this stage.

Other Issues

Water Resources and Flood Risk:

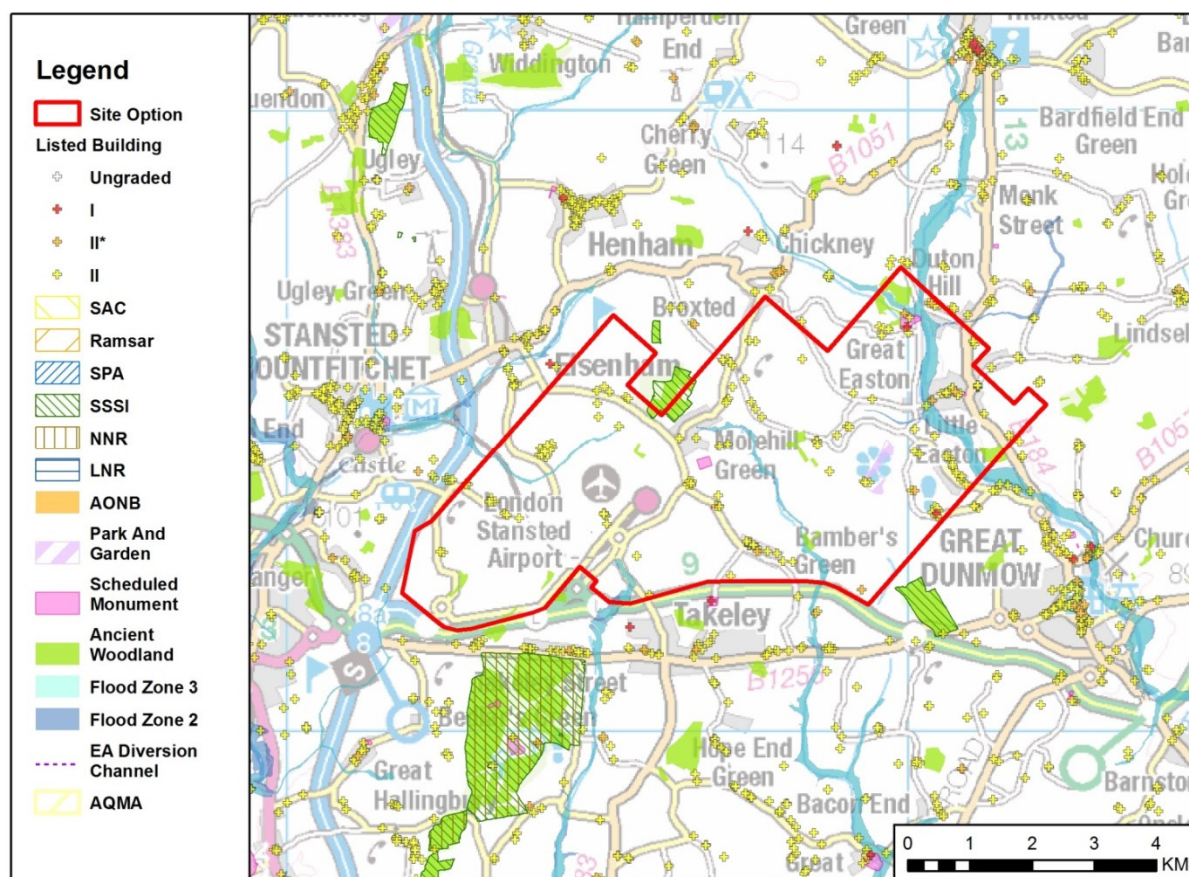
- Low flood risk and loss of flood plain (around 6% of footprint in Flood Zones 2&3)
- Proponents have noted that the water resource zone that supplies Stansted Airport would have a deficit.

Land Use and Development:

- No loss of Greenbelt.
- Loss of large area (~2,400ha) of Grade 1 and 2 (best and most versatile) agricultural land, mainly Grade 2 land.
- Approximately 3,000 ha of greenfield land would be lost; the largest area of undeveloped land of all the options. This is likely to include loss of local landscape and cultural heritage features, significant length of hedgerows (possibly with historic landscape value), protected species habitat, footpaths and archaeological interest.
- No significant contaminated land issues.

Surface Access Improvements:

Potential impacts related to all access improvements including over 150km of road widening and rail link developments.



PEOPLE

Housing

A number of villages would be lost including Molehill Green, Brick End, Bamber's Green, Great Eastern, Little Eastern, Butchers Pasture. Development would generate significant additional demand for housing in the region to accommodate the growth in employees of the airport and supporting industries.

Demolished
800

Vulnerable Groups

- Overall Index of Multiple Deprivation (IMD), averaged over 5km area around the airport, is 7.7, indicating the area is generally prosperous and not characterised by deprivation. This compares to Heathrow options with IMDs of 18.7-20.8 and the Isle of Grain (26.1) due to higher proportion of the surrounding population being affected by deprivation. However, local areas of relative high unemployment around Stansted may imply vulnerable groups who

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may benefit from the additional employment opportunities. Urban areas further afield e.g. Harlow 10km to the south contain some highly deprived areas with some employment dependent on the airport.

- The Health Impact Assessment (HIA) for Stansted G2 (2008) highlighted a particular concern over impacts on children and health through school life, predominantly associated with adverse impacts due to increased traffic and road congestion. Two schools are located within the development footprint.
- Potential for significant health related benefits to reduced noise for some vulnerable groups from closure of Heathrow airport. However, these groups may be most adversely affected by the loss of a major source of local employment and reduction in services in the Heathrow area especially over the transition period.

Quality of Life and Health

- Approximately 75,454 and 118,526 people located within 2km and 5km respectively of the airport.
- Increased local population affected by aircraft noise nuisance but with significant wider benefits from reduced noise exposure for populations around Heathrow and other airports
- Around 12,400 people newly impacted by noise by 2030, compared to 34,800-37,500 for the Heathrow options or 1,200 for the Isle of Grain.
- Major change to rural character and setting of surrounding settlements from increased aircraft noise, traffic and surrounding ancillary development. Areas affected by ground noise would extend further from the airport than at present with varying degrees of impact. Significant loss of open space and recreational amenity.
- Possible additional benefits to current accessibility and connectivity through surface transport improvements and also from improved local services.
- Significant benefits to local area as contributor to economic wellbeing and supporting social and economic objectives in wider area.

Wider Social Impacts

Proposer states that development could support regeneration aims for the Upper and Lower Lea Valley and east London with associated social benefits to areas of deprivation and unemployment.

Significant impact of loss of Heathrow airport on the surrounding economy, and on access and services with their associated employment and social effects.

COST

Capital Cost		Option A: WAML		Option B: HS	
	£ bn	2030	2050	2030	2050
2030 estimate based upon a 4 runway layout allowing independent parallel operations. 2050 cost includes construction of 5 th runway. Estimate for 2030 includes purchase of all land required for 5 runway layout.	Airport	12 - 17	19 - 25	12 to 17	19 to 25
	Access	11 - 15	16 - 22	15 to 20	16 to 22
	Other	~1	~1	~1	~1
	Total	24 - 32	36 - 48	28 to 38	36 to 48
Promoter estimates £67.8bn, with similar surface access strategy to Option B.	Risk	9 - 13	14 - 19	11 to 15	14 to 19
	Optimism Bias	17 - 22	25 - 34	20 to 27	25 to 34
	Risk Adjusted Total	50 - 67	75 - 101	59 to 80	75 to 101
Key Risks					
<ul style="list-style-type: none"> ▪ Land acquisition costs. ▪ Tunnel construction. ▪ Widening of M11 and M25. ▪ Rail connection to London. ▪ Proposed ATM capacity may not be fully realised. 					
Risk and Contingency Allowances					
40% contingency and 50% optimism bias applied to all costs.					
Surface Access Costs					
Surface Access Strategy A based upon upgrades to roads locally around the airport, M25 & M11 motorway widening, new motorway link road from the airport and rail extension to WAML. It is envisaged that a further £6bn-£7bn would be required for rail capacity improvements to accommodate demand in 2050.					
Surface Access Strategy B based upon upgrades to roads locally around the airport, M25 & M11 motorway widening, new motorway link road from the airport, Crossrail 2 rail extension to serve the airport and new High Speed rail link from the Airport to London St Pancras. It is envisaged that a further £1bn-£2bn would be required for rail capacity improvements to accommodate demand in 2050					
Other Off-Airport Costs					
An allowance has been included to cover typical environmental mitigations measures for flood protection and habitat loss.					

PROPOSAL TITLE:	Stansted Hub	Group:	Existing
SUBMITTED BY:	Mayor of London	Reference No.:	69

OPERATIONAL VIABILITY

Capacity	Net	Airport	Net	Forecast Usage of Maximum Capacity	
<p>The proposal assumes the existing runway is retained and a further four constructed, with the new four runways able to handle ~1,000,000 ATM pa. It is not clear however, whether the existing runway could be operated as proposed and this capacity appears optimistic; NATS is not confident that an operation of more than 1 million ATMs is feasible. Should an enlarged footprint (widening runway spacings) be required to achieve the claimed capacity, it would be expected that the environmental impact and capital cost would increase.</p> <p>The closure of Heathrow and the reductions in capacity at Luton and London City offset the capacity increase at Stansted. However the greater average p/ATM achieved compared to the current Luton, Stansted and London City airports would be expected to lead to a net increase in passenger capacity. The LCC sector would be disproportionately impacted with only Gatwick remaining in the London system primarily serving the sector.</p> <p>The net impact does not consider Southend, which would be expected to be reduced in capacity.</p>	Runways	5	2	2030	2050
	ATM	1,250,000	317,000	60%	90%
	pax	210	62	55%	90%
<p>Resilience, Reliability and Efficiency</p> <p>Although the proposal could be defined to meet resilience targets, it is not clear that the claimed capacity could be fully utilised whilst preserving sufficient resilience.</p> <p>Given the impact on the wider London system, the number and size of alternate airports is reduced negatively impacting system resilience should Stansted temporarily suffer reduced capacity or closure.</p>					
<p>Safety</p> <p>The proposals could be designed to comply with safety requirements. The proposal significantly decreases the number of flights over a densely populated area since Heathrow is closed and London City reduced in capacity.</p>					
<p>Scalability</p> <p>Further eastwards expansion could, in theory, provide additional capacity, however the airspace constraints for a 5+ parallel runway airport may limit the additional capacity achieved or deliver diminishing returns on the additional infrastructure.</p>					
<p>Airspace</p> <p>The proposal would require significant airspace redesign. The boundaries of the London terminal manoeuvring area and Stansted's SIDs, STARS and interfaces with en route airspace would be amended to reflect the essentially new airport, the closure of Heathrow and the reduced Luton Airport. 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.</p>					

DELIVERY

<p>Timescale</p> <p>Submission suggests 2029 following a state-led process to manage the closure of Heathrow.</p>
<p>Commercial Deliverability</p> <p>Independent high level assessment suggests that, to meet the full debt requirement but without any contribution to surface access costs, aero yield may not have to be increased above an assumed competitive market place charging structure. Conversely, aero yield may have to be increased to more than 35% above an assumed competitive market place charging structure and index linked to 2050, or by ~125% without indexation for surface access Option A, and 40% and 140% respectively for Option B to meet the full debt requirement.</p> <p>Aeronautical yield indexes relative to Heathrow Q6 to breakeven:</p> <ul style="list-style-type: none"> ▪ Surface access Option A: 2.2 ▪ Surface access Option B: 2.4 <p>Peak borrowing is likely to be considerably in excess of market capacity for any form of private capital market or bank finance solution and therefore would fall wholly or almost entirely on Government. There is no modern day precedent for undertaking a project of this scale and cost in the UK.</p>