

Thames Reach Airport - Call for evidence notes and table – 28 May 2013

Enclosed Table and notes for our principle integrated proposition:

- **New Multi-modal Lower Thames tunnel between Canvey and Hoo with close integration with the existing rail and road network**
- **New impoundment at the North-Eastern coast of the Hoo to form airport platform, tidal power and flood defence systems**
- **New AirRailHub with extensive direct rail services to: local - staff (Essex, Kent), regional – destination traveller (Central London), national – rail-air interlining (The North and The West) and international - rail-air interlining (Paris, Brussels)**

The below comments are in response to the terms of reference March 2014: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/298315/terms-of-reference.pdf.

Study 1 – Environmental / Natura 2000 impacts

- Existing Habitat effected – see table enclosed for areas
- Secondary effects – bird management plan – see earlier email Tue 25/02/2014 16:51
- Natura2000 precedents – <http://natura2000.eea.europa.eu/#>
Please note the Natura2000 areas affected by the current consultation have been only designated in the very recent time, notably prior to the SERAS study. Further there are only a limited amount of species listed – see:
 - Hoo - <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=UK9012021> - only recently designated in 2000
 - Heathrow - <http://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=UK9012171> - only recently designated in 2000
- Demolition or relocation of existing historic buildings – none or minimal – alternative is to relocate ancient monuments or listed buildings. <http://www.mammoet.com/en/Projects/Project-Emmaus/>

Study 2 – Operational feasibility and attitudes about moving to a new airport

Operational feasibility

- Meteorological and wildlife impacts – see earlier email Tue 25/02/2014 16:51
- SS Montgomery risks – poses an ongoing problem and should be resolved in any case
- Relocating energy facilities – For more northerly runway locations the current LNG terminal might be retained. Generally LNG terminals are located away from populations, and a more suitable location should be sought in the long-term. <http://www.hydrocarbons-technology.com/projects/grainlngkent/>

Industry response

- Operators and users will generally react to a given infrastructure, a typical planning cycle of 15-20 years offers planning security for the long-term for all parties. Game changer for airline operation due to operational benefits of a 24h airport, i.e. higher utilisation of aircrafts and hubbing in waves, “Atlantic gateway” hub to European market, shortest taxiing distances, terminals optimised for interlining passengers, no stacking, resilience of operations, etc.

Study 3 – Socio-economic impacts

- economic benefits in the inner Thames Estuary – rail driven agglomeration, particular wide impact due to new North-South multimodal link between Essex and Kent, new Stansted to the North and Continent link
- redevelopment potential of Heathrow/London City – see mayors study
- economic impact of closing Heathrow/London City – see mayors study
- social impact by shifting the hub – rail rejuvenation, agglomeration (<http://metrotidal.com/benefits.htm>), rebalancing of economy, congestion relieve/unclogging of West London, air quality improvement in London, wider UK participation, London bypass, freight mode-shift,
- competition impacts – mode shift to rail, feeder flights on rail, less cars/taxi,

Study 4 – Surface access impacts

Operations

- New infrastructure required – use of multiple existing corridor, shared tunnel, travel time enhanced with “Check-In-Train” – the facility to check-in while traveling on all direct rail connections to the airport with live updates on departure times: <http://www.thamesreachairport.com/project/innovations/>
- Use of existing transport corridor capacity – spread over number of corridors and countercyclical, general mode shift to rail not just for airport surface access, but also the wider public
- Use of existing London terminal capacity – new through trains, spread over greater number of rail connections/terminals
- Non-London travel times – new direct regional and national rail services with Check-In-Train (in-train check-in facilities)
- Long-term resilience of surface transport links – higher and better integrated rail links and greater number of transport corridors North and South of the river
- Ancillary development posing additional strains on infrastructure – Isle of Grain industrial / business park nearby. General higher rail use to free up roads from passengers and freight.
- Relationship of surface transport infrastructures for airport and other wider transport requirements – New shared tunnel infrastructure for Dartford crossing relieve and ports access and freight mode-shift

Costs

- Cost of constructing new surface transport infrastructure – see earlier documentation and <http://www.thamesreachairport.com/project/budget/>
- Charging required for surface transport links to airport – Subject to ownership structure, there will be most likely a regulated tunnel charging scheme in place (parallel with Dartford), together with a regulated airport charging agreement. Private investor funding will depend on the mandate of the new hub infrastructure of being the sole hub provider in the UK
- Estuary airport impact for other government transport revenues or subsidies – suggested general termination of currently fragmented rail franchises – to be consolidated in a single national rail operator to allow for effective network services. This would also help to reduce the current large subsidies for the rail sector and allow for a nationally planned system
- Apportioned costs to privately and publicly financed costs between general and airport use of surface access infrastructure - There will be a fair apportioning of the usage of the road and rail infrastructure. It is encouraged to plan new infrastructure to benefit equally both user groups (airport user and general population) with great emphasis for the wider UK citizen via a new “eastern spine” rail corridor. <http://www.thamesreachairport.com/benefits/cost-comparison/>
- Wider benefits that might accrue from surface transport investments for example in east London and north Kent – agglomeration benefits for Eastern England, Central London/M25 road and rail relieve due to Eastern bypass of the M25 area via new tunnel. New direct passenger and freight rail services from the Midlands to the Continent.

Environment

- Surface transport impacts on protected sites/legislation – largely using existing rail and road corridor, raised above flood plan for resilience, some impacts from incremental new rail corridors to the North
- Air quality, carbon, noise impacts from surface transport - compensated by predominant use of rail, and use of existing road corridors. Overall reduction in car and lorry traffic in Essex and Kent due to new rail infrastructure (mode-shift)

APPENDIX - Illustrative table and diagrams on the following pages

- Table 1: Indicative comparison of key UK hub proposals
- Diagram 1: Thames Reach Airport runway layouts – to match demand
- Diagram 2: Future core national rail network (GC gauge) – for passengers and freight
- Diagram 3: Indicative phased airport capacity – demand reduced by national Air-Rail substitution

TRA AirRailHub - indicative comparison of key UK hub proposals - 28 May 2014

Promotor			Thames Reach Airport			Airport Com	Heathrow Ltd		Heathrow Hub		
Type	unit		TRA-3w	TRA-4w	TRA-4L	AC-4c	reference	HR-2w	HR-3w	HR-3L	HR-4L
configuration			Jul-13	Jul-13	May-14	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13
revision date											
runways	no		3wide	4wide	2long	2x2 close par		2wide	3wide	1w + 1long	2long
Dimensions											
runway separation	m		1520	1520	1520	1900/750		1420	1420/1320	1420	1420
runway length	km		4	4	7.6/2	4		3.7	3.5	6.6/2	6.6/2
ancillary/cargo area	km2		5	7	1	6		1	5	2	2
operating hours	h		24	24	24	24		18	18	18	18
Capacity											
peak capacity (arrivals per h)			150	200	100	160		100	150	100	100
typical annual ATM per runway			438,000	438,000	438,000	438,000		328,500	328,500	328,500	328,500
no of runways			3	4	4	4		2	3	3	4
peak capacity (arrivals per h)			150	200	100	160		100	150	100	100
runway configurarion loss **			100%	100%	88%	65%		100%	100%	91%	88%
nominal ATM			1,314,000	1,752,000	1,541,760	1,138,800		657,000	985,500	896,805	1,156,320
use factor			75%	75%	75%	75%		75%	75%	75%	75%
projected ATM			985,500	1,314,000	1,156,320	854,100		492,750	739,125	672,604	867,240
aircraft load factor			175	175	175	175		175	175	175	175
projected mppa			172	230	202	149		86	129	118	152
additional air-rail substitution	mppa		20	20	20	10		5	5	5	5
opening year			2028	2032	2028	2029		existing	2026	2028	
Cost											
promotor	£bn		21	26	24	25		0	10	10	20
apportioned surface access	£bn		10	15	11	25		0	3	3	10
Environmental											
platform	km2		19	28	16	25		13	18	15	20
property taken	no		0	indust.	100	1600		0	1500	720	
landtake (non-flood)	km2		1	2	1	4		0	5	2	7
landtake (floodrisk)	km2		7	10	5	9		0	0	0	0
intertidal (platform only)	km2		10	10	10	9		0	0	0	0
deap water (platform only)	km2		3	3	0	3		0	0	0	0
nature2000 (platform only)	km2		15	16	11	17		0	0	0	1
noise polution (people)	no		1,000	2,000	1,000	1,400		150,000	142,600	180,900	
noise polution (people)	net	-	230,000	- 230,000	- 230,000	- 230,000		0 -	8,000	30,000	
air polution (people)	non		non	non	non	non		high	very high	very high	very high
Surface access catchment											
population (staff) within 45min	mio		11*	11*	11*	9			14	17	
population within 1h	mio		16*	16*	16*	13			16	18	
population within 2h			35*	35*	35*	25			36	38	
Interventions											
infrastructure			LNG move			LNG move		M25 tunnel		M25 tunnel	M25 tunnel
heritage loss			0	0	0	8		30		8	
SS Montgomery			x	x	x	x		x	x	x	x

Reference data based on AC long-term-options-sift-3, Dec2013

* higher estimate, due to more direct rail services with "Check-In-Train" ©

** configuration loss to be analysed

Diagram 1: Thames Reach Airport runway layouts – to match demand

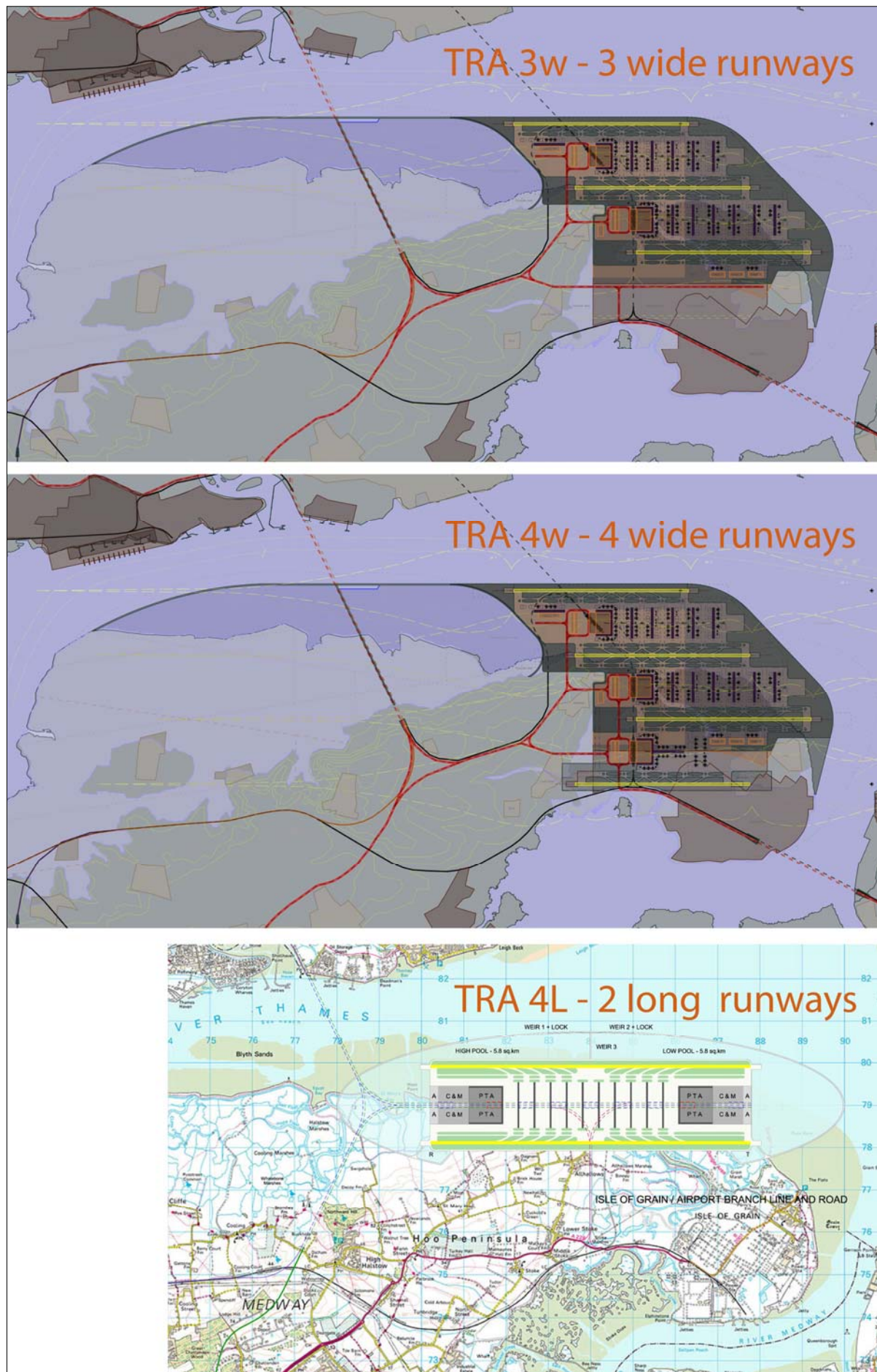


Diagram 2: Future core national rail network (GC gauge) – for passengers and freight

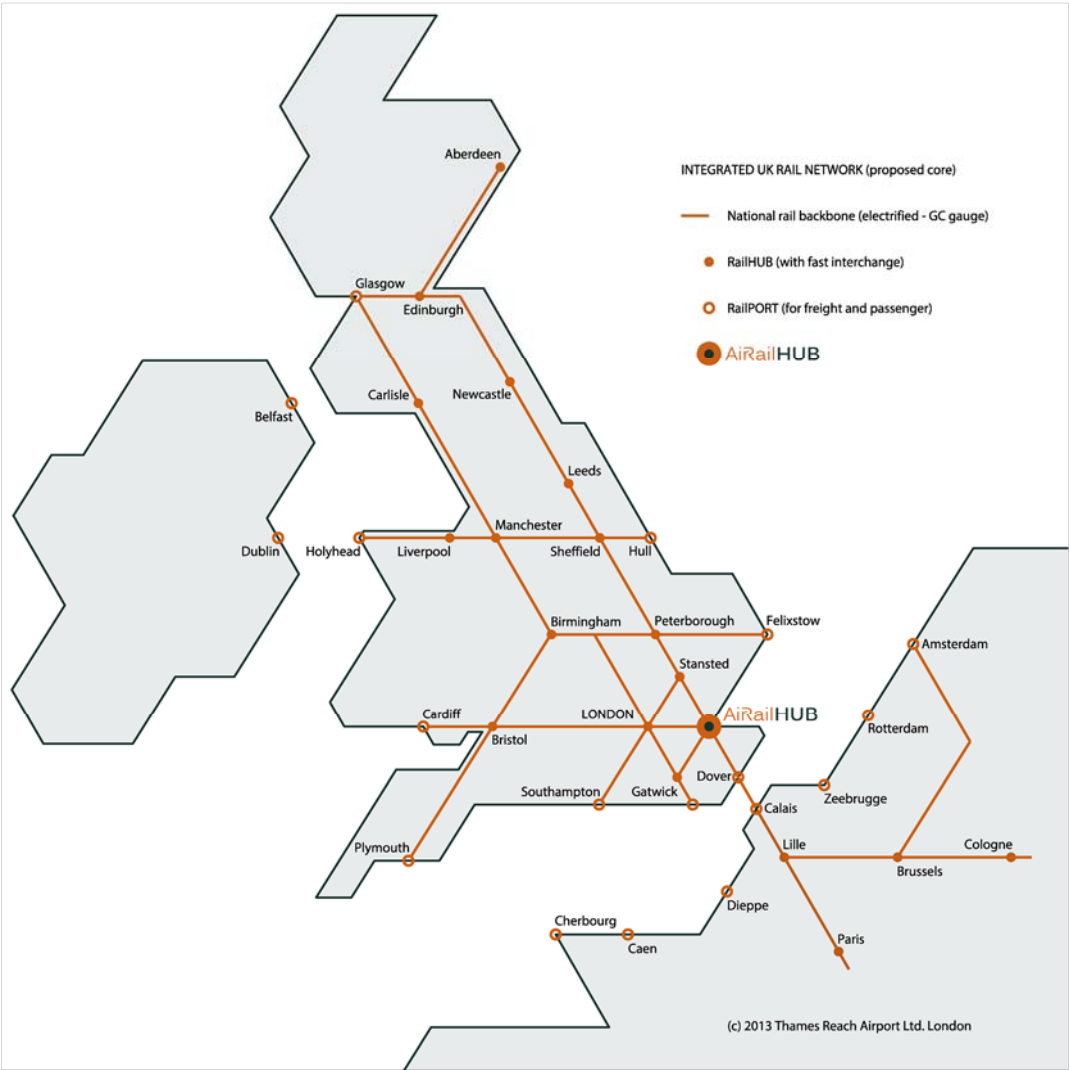


Diagram 3: Indicative phased airport capacity – demand reduced by national Air-Rail substitution

