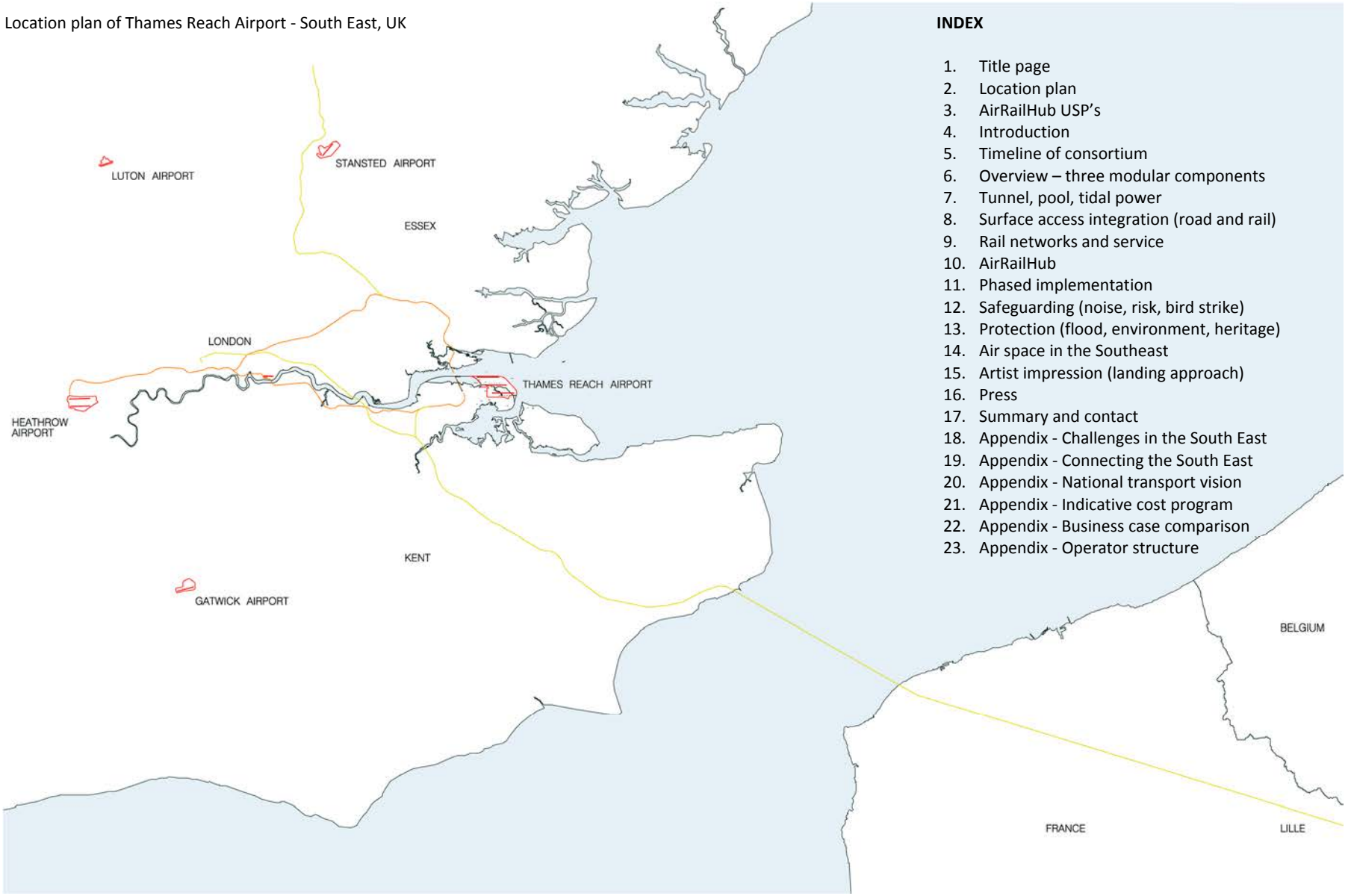
An integerated solution for the UK
- combining the Estuary airport with
a Lower Thames Crossing
and flood defences for London

Thames Reach Airport

24h Hub Airport
Thames Crossing
Flood Defence
Tidal Power

AirRailHUB

Location plan of Thames Reach Airport - South East, UK



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INTRODUCTION

Thames Reach Airport is an independent private sector initiative, supported by leading UK consultants, whose key strategy for the provision of aviation capacity is the development of a modular, 24h AirRailHub in the Thames Estuary led by a multi-modal Lower Thames Tunnel under the Thames Sea Reach and flood defence for London. This prospectus introduces the immense economic and environmental benefits of combining a hub airport with a Lower Thames Tunnel, flood storage and tidal power generation at the Hoo peninsular and the wider benefits for the Thames Gateway region and the continued growth of London and the step change of systematic rail integration. The proposals have been developed over the last ten years and have been consulted widely with all key stakeholders, including the formal SERAS consultation in 2003.

This integrated solution has been initiated by Bluebase in 2002 as "Thames Reach Airport". A consortium has then been incorporated as Thames Reach Airport Ltd. to promote and develop the project. Further, in 2007 Metrotidal Ltd has been launched as a stand-alone business case for a Lower Thames Crossing solution, compatible with the integrated Thames Reach Airport proposals.

Thames Reach Airport USP's:

Track record: 10 years development, widely consulted, SERAS leader (highest Net economic benefit)
Integration: use of existing network corridors, regeneration, and minimal land take (rail/road/ aerodrome),
Resilience: Dartford and M1 corridor relieve, multiple access routes, freight bypass
Protecting: flight paths over water, barrier free London flood defence, safeguarded heritage,
Future proof: 24h Hub, Air-Rail interlining, In-train check-in, 180+mppa, up to 4 wide spaced runways
Environmental: highest rail use, tidal power, replacement habitat, less pollution, uses flood risk land
Low cost: phasing, wider benefits - dual use

KEY ADVANTAGES

Thames Reach Airport has five key advantages: -

- It proposed an integrated solution for the wider transport infrastructure of the southeast and the growth of London.
- It is a single-site, hub-airport providing the most accessible, rationalised and unconstrained aviation capacity in the southeast.
- It has the lowest environmental impact per passenger because of its estuary location, rail-led infrastructure and sustainable operations.
- It would have the lowest cost per passenger, because of cross-funding opportunities for the surface access, phased new-build construction and efficient operation.
- It is a readily implementable proposal within the scope and realm of the SERAS/Cliffe consultations.

An integrated transport solution

Thames Reach Airport would, at once, resolve aviation objectives whilst substantially contributing to the objectives of the following other strategic planning initiatives concerning the growth and sustainability of London: -

- Thames Gateway Communities Plan,
- Thames Gateway Freight Study,
- London Orbital Study,
- Stansted/M11 corridor,
- Lois (London to Ipswich Multi-modal Study),
- London Gateway Container Port,
- Crossrail
- The East-Coast High-Speed Line
- London's flood defences
- Dredging the Thames Estuary shipping channels
- London eastern sea defence
- The Government's Renewables Obligation

A phased hub-airport

The airport is a single-site, new-build solution for additional growth from 2024, when existing airport capacity reaches its limits. The phased construction programme allows for the first runway to open in 2024,

second in 2028 and the third in 2032, along with the incremental provision of terminal capacity from 20 mppa to 180 mppa by 2036. The compact new-build design reduces transit times within the airport perimeter, which together with the efficient surface access would make it the most accessible airport serving the Southeast. The 24-hour passenger and cargo operations make the most efficient use of a 3-runway system.

A low environmental impact per passenger
Thames Reach Airport is an environmental solution with a low carbon audit in line with the Government's Renewables Obligations.
The estuary location, with 90% of the flight paths over marshes and open water, mitigates the environmental impacts and provides greater energy efficiency: -
• Low population within the risk, noise and nitrogen dioxide contours
• Low social and economic impacts through widely spread rail network
• Low property impacts (agricultural land, homes, listed buildings, other structures)
• Rail-led surface access: up to 70% for passengers and employees
• Rail/Air substitution for short haul destinations
• Use of flood risk land for airport platform
• New-build design efficiencies (energy consumption, aviation fuel, utilities etc)
• Sustainable solar, tidal, wave and wind energy
• Easing of congestion on the M25/Dartford Crossing
• Low ground water and water supply impacts

Thames Reach Airport will make use of a fully automated 24-hour detection system for bird strike control, placing emphasis on the harmless denial of access to bird life rather than the destruction of their natural habitats. The automated system working in tandem with a 20-year programme for bird management and the creation of alternative habitats along the eastern seaboard will reduce the risk of bird strike to the levels experienced elsewhere in the UK.

A low cost per passenger
Thames Reach Airport combines a high capacity with a low cost per passenger by: -
• Phasing the capacity and investment to closely match demand
• New-build design efficiencies (layout, automated operations, transit times etc)
• Cross-funding of wider infrastructure benefits and easing of congestion elsewhere,
• Low acquisition and compensation costs,
• Longer operating hours than other South-East airports

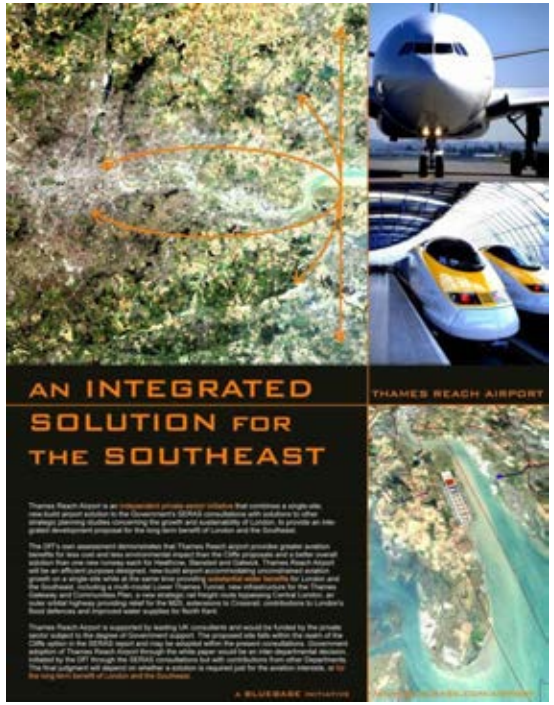
Inputs have been provided for a Thames Reach Airport run on the NAAM, SPASM. It is expected that with low costs per mppa and a high capacity, Thames Reach Airport will emerge as strongest economic proposition.

A readily implementable proposal
Thames Reach Airport is a readily implementable SERAS (South East and East of England Regional Air Services) option. The latest proposals are within the realm and scope of the SERAS consultations and could be adopted as a SERAS/Cliffe variant without an additional consultation exercise. The unique environmental advantages of locating an airport in the Thames Estuary provide the necessary legal case for the SSSI and "RAMSAR" impacts. The low risk, noise, nitrogen dioxide, property, social and economic impacts help mitigate the planning and compensation issues and reduce the associated legal timetable and costs. The surface infrastructure provides wider benefits ahead of the airport opening. Thames Reach Airport will rationalise the core services provided by the existing Southeast airports.

TIMELINE - Thames Reach Airport Consortium (TRA):

2002
Project initiation by Bluebase architects, London. Consultation with Southend and NATS.
- 30.9.02 Bluebase SERAS submission of Thames Reach Airport

2003
- 30.6.03 Bluebase second SERAS Submission of Thames Reach Airport with highest Net Economic benefits
TRA presentation to Aviation All-Party Group in Westminster
Halcrow assessment of airport capacity in the Thames Estuary and Hansard Written Answers on Thames Reach proposal
Presentation



Parliamentary Monitor 2003

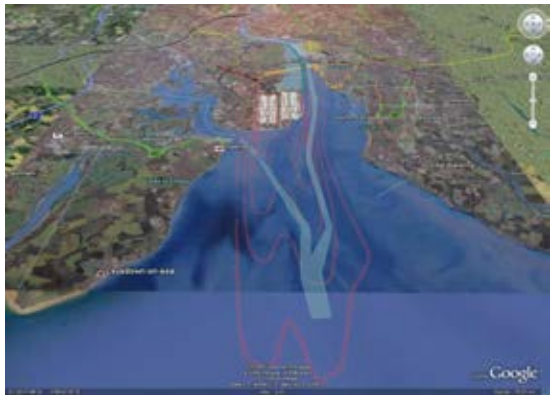
2004
Bluebase government White Paper response
Thames Reach Airport "From Concept to Reality"
Bluebase Thames Reach Tunnel prospectus
Response letters from numerous senior politicians in Westminster

2005
Liaison with Environment Agency and Thames Gateway Forum regarding the Lower Thames Crossing debate

2006
Bluebase presentation to TCPA conference in Manchester with tunnel/barrier/airport system
Essex CC briefing following Thames Gateway Forum

2007
Peter Chappell (Essex) meeting
DfT Dartford briefing and communications
Communication with George Osborne
Meeting with Assoc. of British Insurers (ABI)
Meeting with Justine Greening MP (2M Group)

2008
TE2100 consultations
TRA briefing to Justin Greening MP
Colleen Harris BBC Radio interview at Canvey
TRA press release in opposition to planned Heathrow expansion proposals
Port of London consultations
Kent CC consultation
BBC Breakfast interview
Thames Gateway consultations
Parsons Brinckerhoff consultations for Dartford Study
Bill Millington of Halcrow briefed on MT
Communication with Julian Brazier MP
Communication with the Mayor of London
City of London committee meeting
Submission to DfT for Dartford crossing
Bernard Jenkins MP meeting
MT/TRA meeting with Volterra/Halcrow and fee proposal received



Presentations early 2009

2009
TRA BBC TV interview (Estuary airports feasible)
Douglas Oakervee presentation
Nick Raynsford MP meeting
Workshop at HR Wallingford
Workshop with Doug, Bridget, Alain at EC Harris
TRA presentation at CAA, Gatwick
Meeting at Southend City hall
Thames Estuary Airport Steering Group setup by Mayor

2010
Meeting with KCC transport department
Kent Select committee meeting renewable energy
Conversation with Michelle Dix (DfT) and Michael Carrivick (BAR)
TFL correspondence
TRA letter to Sir David King, TESG

2011
Meeting with Lord Berkley regarding rail
Correspondences with "Thames Hub" team

2012
Launch of Thames Reach "AirRailHub" prospectus

OVERVIEW - three modular components

TUNNEL (Metrotidal)

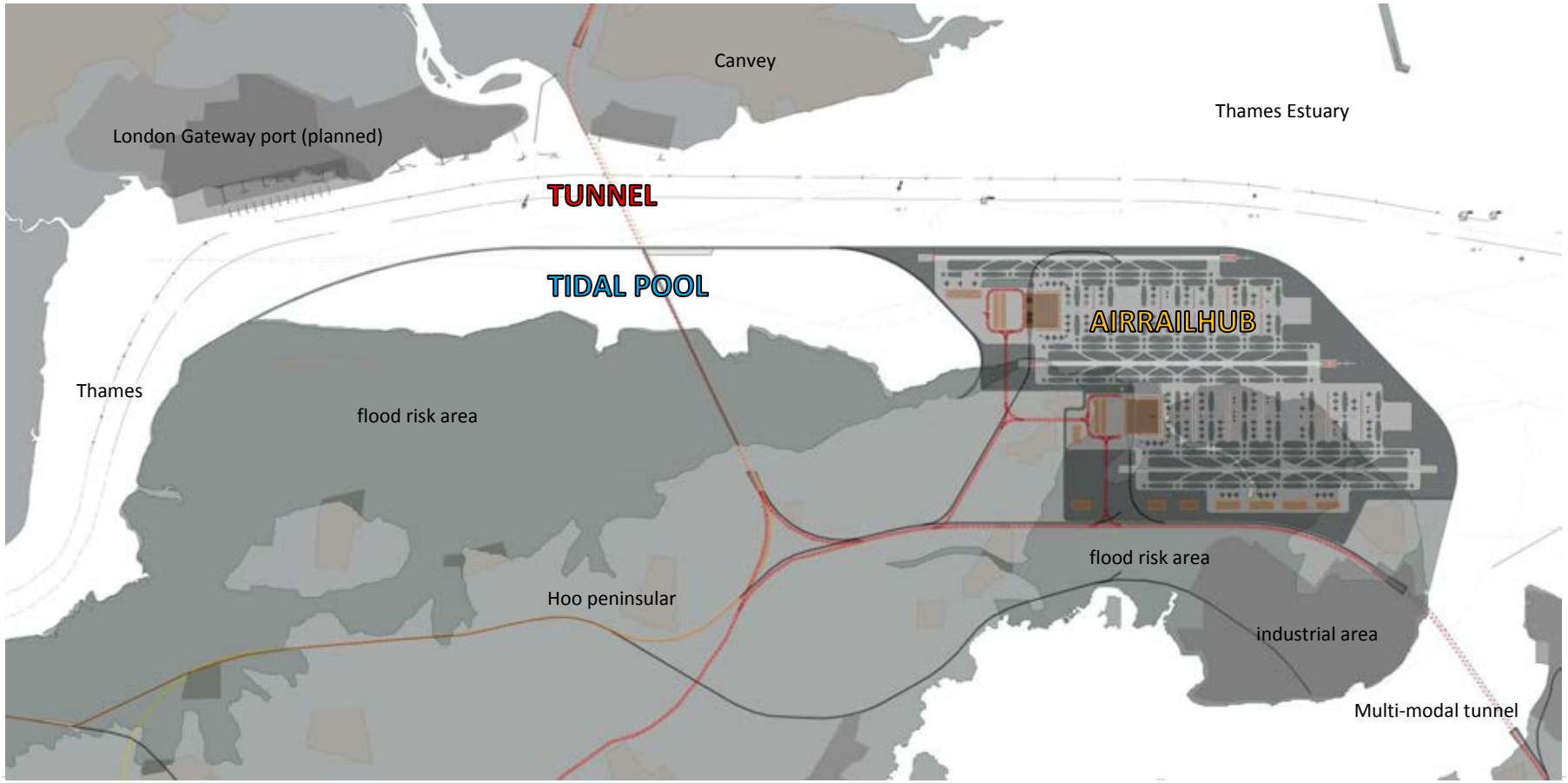
- Multi-modal tunnel (Canvey - Hoo peninsular)
- 4km immersed tube tunnel + 4 km cut and cover tunnel
- D2 road tunnel with central emergency tunnel
- T2 rail tunnel mutual emergency tunnel arrangement
- Road and rail links
- Utility way leaves

TIDAL POOL (Metrotidal)

- Dredged pool with 10m embankment (Eastern)
- Natural pool with 8m embankment (Western)
- Extensive emergency overflow areas (flood risk zone)
- 20GW dual pool tidal power plant
- Active flood storage controls
- Bird strike control
- Upstream intertidal mudflats protection

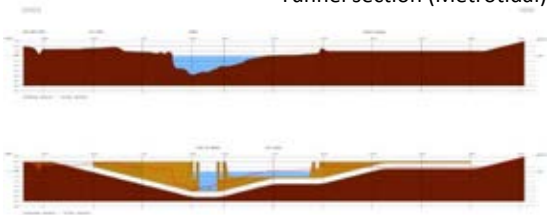
AIRRAILHUB

- Three (four) wide spaced runways aerodrome
- Two CTA's with 12 satellites
- Two railway stations
- Direct Crossrail and HS1 access
- Dedicated cargo and business park
- Fast interchange



MULTI-MODAL TUNNEL

Tunnel section (Metrotidal)



Existing and proposed tunnel profile (Metrotidal)

The Lower Thames crossing will consist of an immersed tube tunnel laid across the Thames between Canvey Island (Canvey Way) and the Hoo peninsular (St. Mary Hoo), underneath the shipping channel and cut and cover across the marches. The 200m x60m immersed tube sections will be cast locally and floated in position. The rail tunnel would initially be used as additional road capacity. The tunnel will also form part of the impoundment of the flood storage system.

- Comparable technology to the Medway and Oresund tunnel
- W11 rail gage with 1:100 gradient for all freight trains

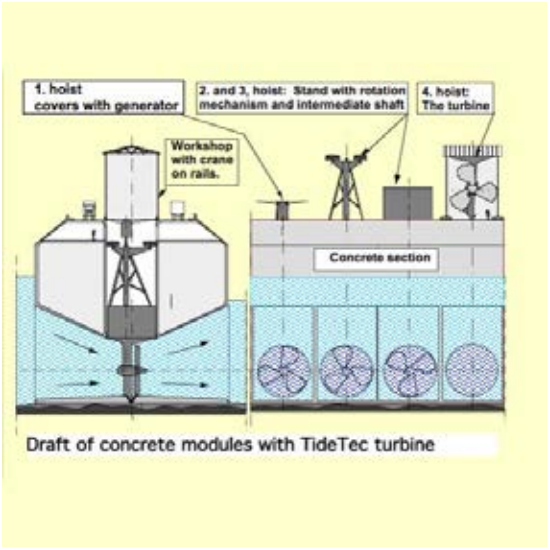
TIDAL POOL AND FLOOD STRORAGE AREAS

50km2allocated flood storage areas (Metrotidal)

The tidal pool and the adjacent created marshes at Cliff and Canvey form an extensive flood storage system to protect London and the Estuary from a one in a hundred years flood event, postponing the need of second barrier to retain the open navigation channel.

- Smart lagoon
- High and low pool
- Flood storage up to 50km2
- Open shipping channel
- Habitat protection
- Fresh water habitat protection
- Sea defences maintenance

TIDAL POWER



TideTec active two-way turbine

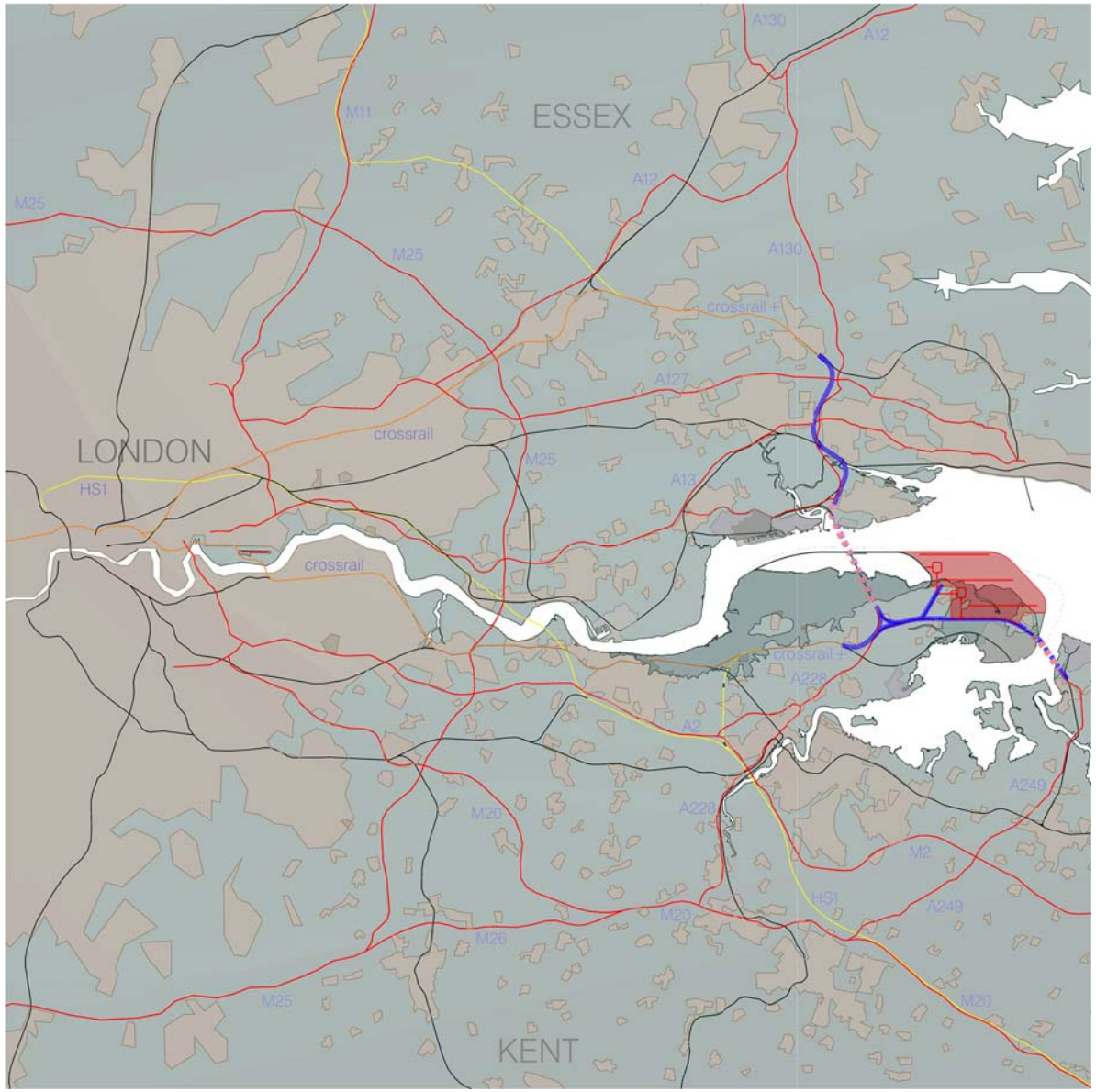
Integrated dual flow tidal power generation

- Pumped storage
- Power storage for wind and nuclear
- Peak power supply
- UK pilot facility near London
- Reliable supply for datacentre
- Local power for airport and rail services

METROTIDAL

The tunnel, flood storage and tidal power elements of this proposal are developed in partnership with Metrotidal Ltd.

SURFACE ACCESS INTEGRATION



The multi-modal Lower Thames crossing between Canvey and Hoo and later Grain and Sheppey connects the existing radial road and rail networks north and south of the Thames with short new above ground transport corridors (blue line). This not only connects a new airport efficiently, but also offers vital agglomeration benefits to Essex and Kent and much needed redundancy to the national North-South traffic flows.

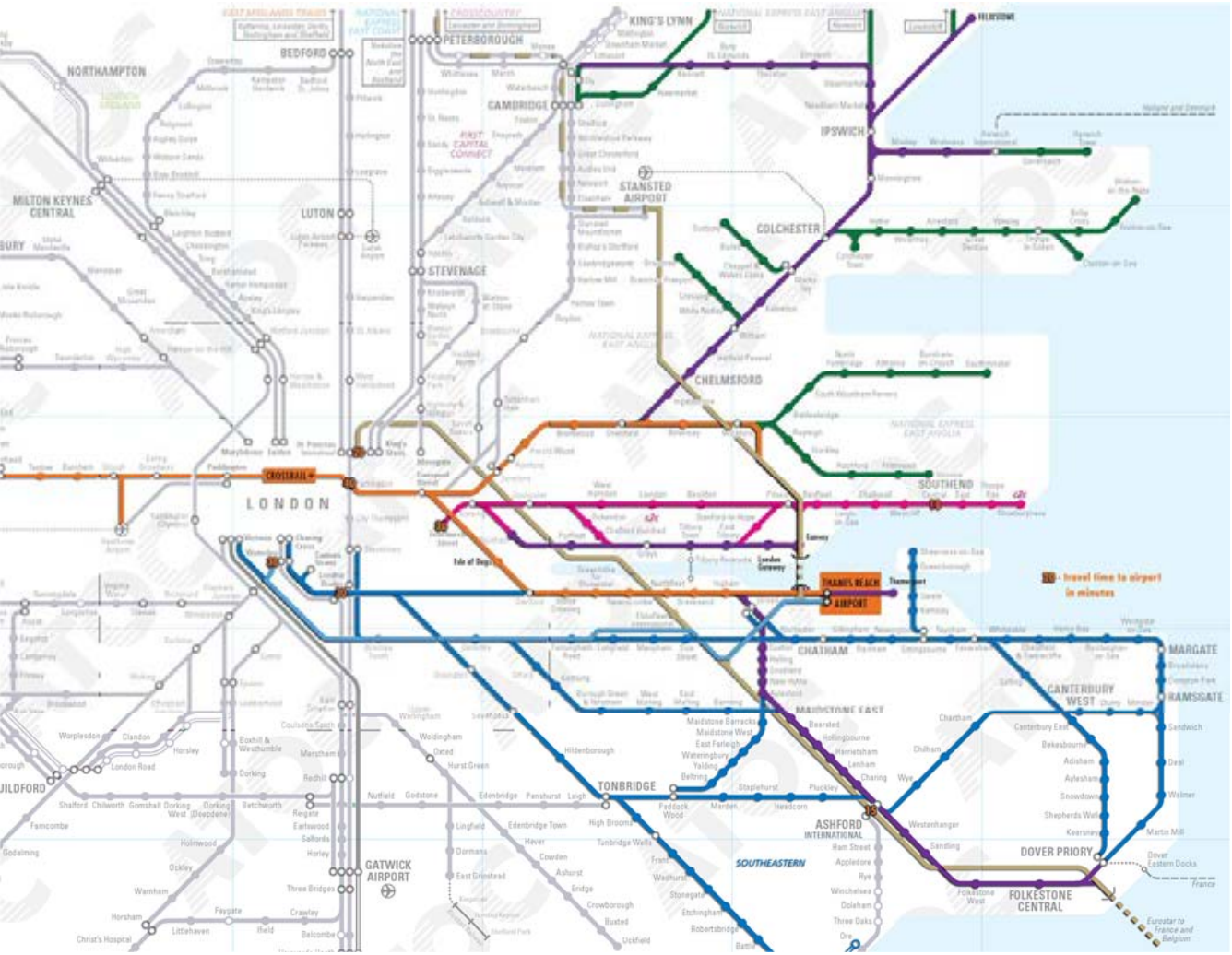
- Maximum use of existing rail (black) and road (red) corridors
- Integration with existing transport infrastructure in initiatives
- Wider benefits to local communities
- Crossrail+ (orange)
- High-speed (yellow) bypass via Stansted
- Freight bypass to east coast ports
- 10km new road corridors
- 20km new rail corridors

Crossrail+ diagram with Estuary loop

RAIL NETWORK AND SERVICES

Thames Reach Airport in closely integrated with local, regional, national and international rail services - offering highest public transport surface access provision of well over 60%.

- Extensive commuter rail connections for staff
- "Check-in" trains (with on-board check-in)
- High-speed rail link to Central London
- "Feeder" intercity trains (air-rail substitution)



Rail services (with indicative travel times)

High-speed Rail (gold)

- London St Pancras 20min
- Paris 2h
- Birmingham 2.5h (HS2 direct)
- Cardiff 3h (Intercity direct)
- Manchester 4.5h (HS2 direct)

Regional Rail

- Southend 10 min
- Medway 7min
- Ashford 15min
- London Bridge 30min (Express train)
- Fenchurch Street 30min (Express train)
- Central London 40min (Cross Rail)
- Waterloo Station 30min (former HS1)

Freight rail

- Eastern bypass (LOIS Study) W11 gage access between all UK and Continental Europe

New rail construction requirements

New rail line and corridor

- Kent 10km
- Essex 5km (+11km cross country)
- Lower Thames Crossing (Metrotidal)

Upgraded existing lines

- Kent 30km
- Essex 10km (+20km cross country)

General airport construction

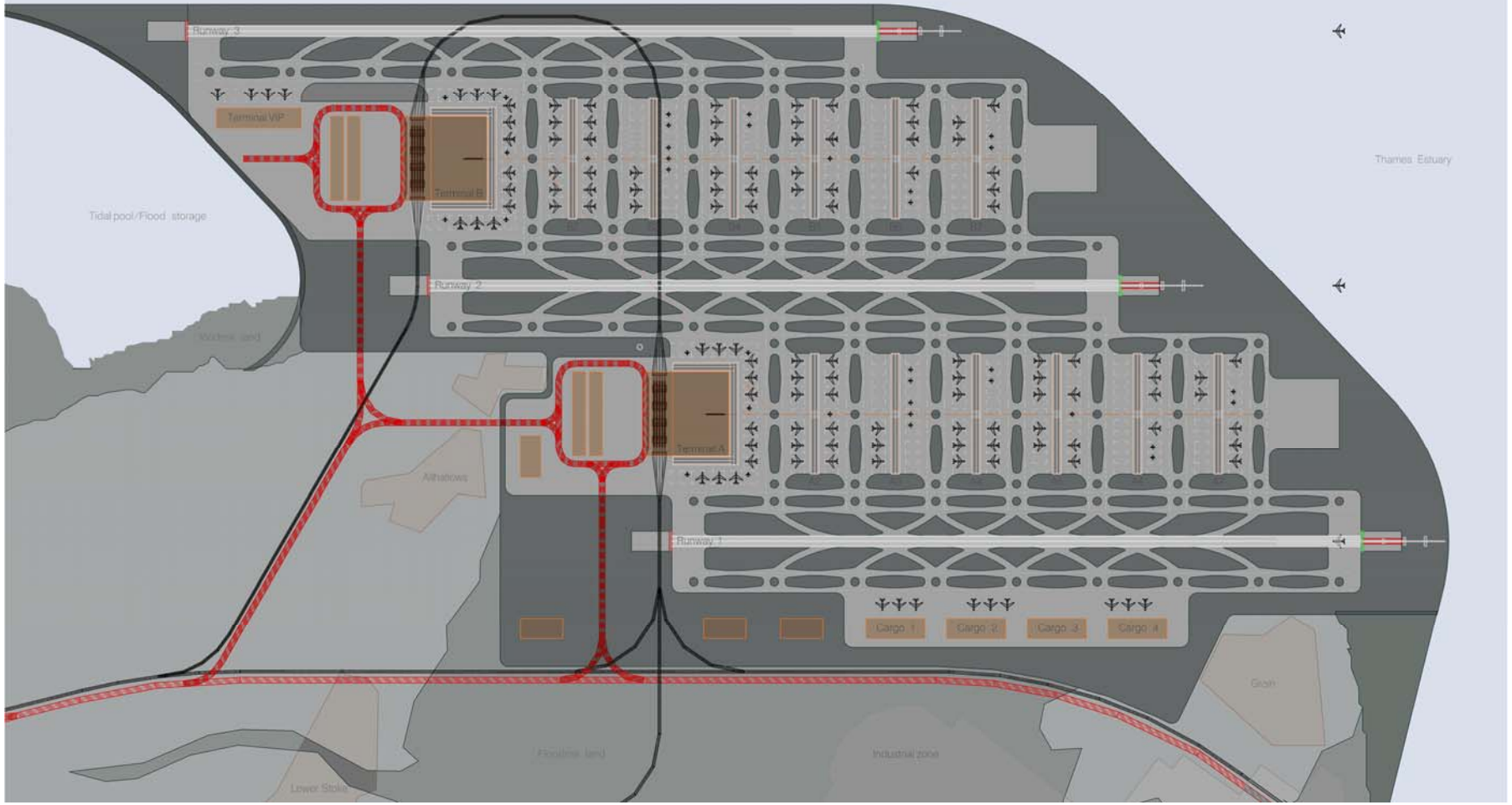
- 22km2 aerodrome platform - 8m above sea level
- Built almost exclusively on flood risk land
- Hydrodynamic and navigation channel neutral
- Phased construction to reduce impacts
- Locally sourced materials
- Integrated with tidal pools
- Adjacent 10km2 brown field growth area

Surface Access

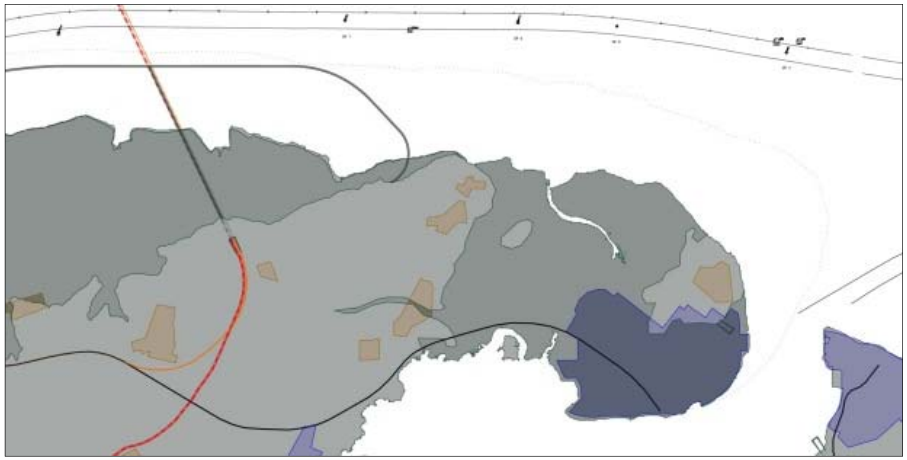
- Direct high-speed rail connections (to London, Paris and Midlands)
- In-train check-in with fast luggage drop-off
- Dual routes to central London (redundancy)
- 60% plus rail use (staff and passengers)
- Use of existing transport corridors
- Short walking distances throughout

AirRailHub (3 wide-spaced runway configuration)

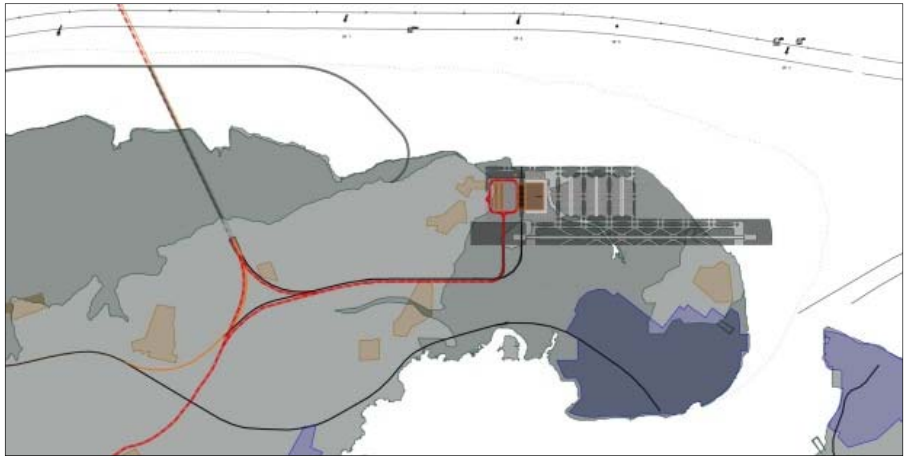
- 3No 4km runways, widely spaced at 1520m
- 2No CTA's with 10 track train station each
- 14No satellites (total 20km stands)
- Dedicated terminals for airline alliances
- 1No VIP terminal
- 4No cargo terminals
- 180 mppa peak capacity at 24h operation
- Optional - 4th wide-spaced runway possible



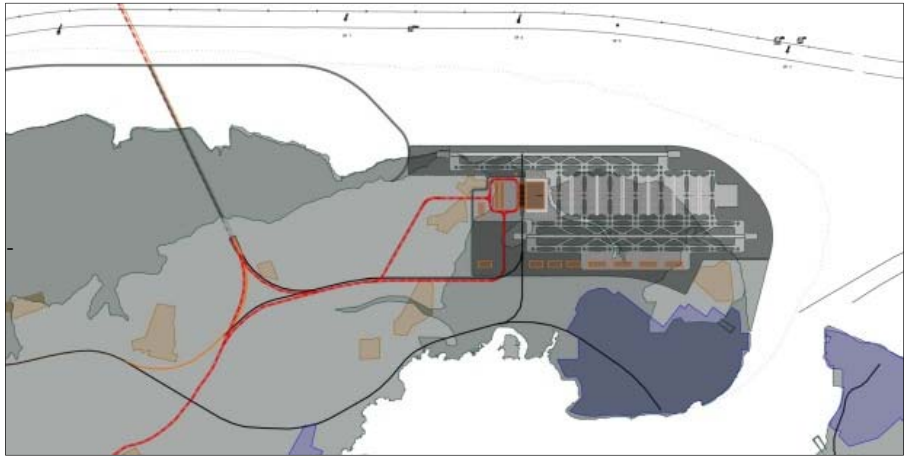
PHASED IMPLEMENTATION OF THE AIRPORT
(Indicative stages by No's of runways)
See also Appendix 4 for indicative cost breakdown



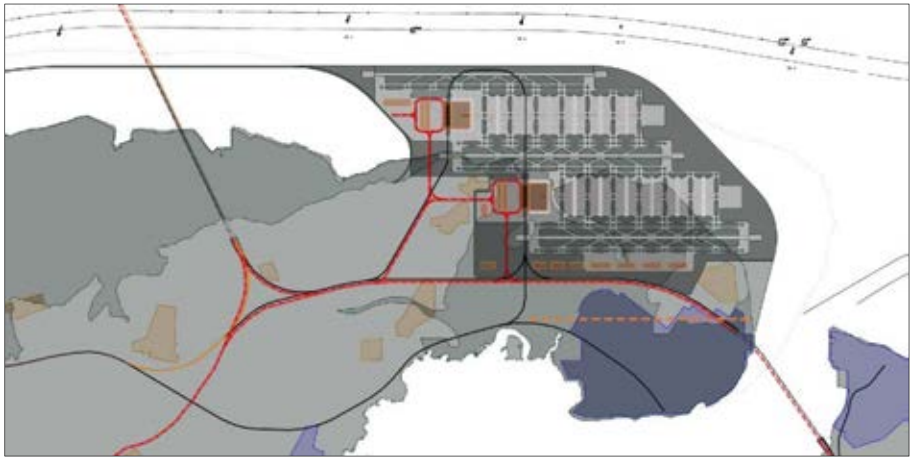
2020 – £3.5bn Lower Thames Crossing - "Metrotidal"



2024 – £10bn First runway - "Gatwick scale"



2028 – £18bn Second runway - "Heathrow scale"



2032 – £26bn Third runway - "Beijing scale", with optional 4th runway

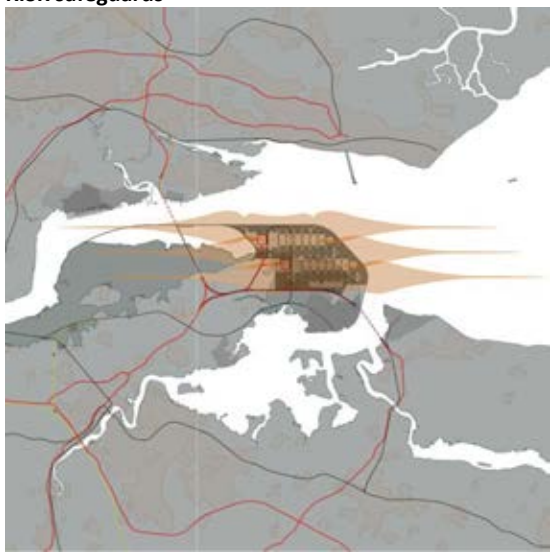
NOISE safeguards

Indicative noise contour

The aerodrome positioning avoids any overflying of densely populated area with the 57dB noise contour only covering open water, marches and industrial areas.

- flight paths over open water and marshes
- Cliff/TRA distance identical to Windsor Castle/LHR
- No conurbation within the contour, besides Allhallows and Cooling (indicative only)
- No noise pollution above background in cities (Southend, Canvey, Rochester, Basildon)
- Surface access follows existing transport corridors
- New transport corridors in tunnels or cuttings

RISK safeguards

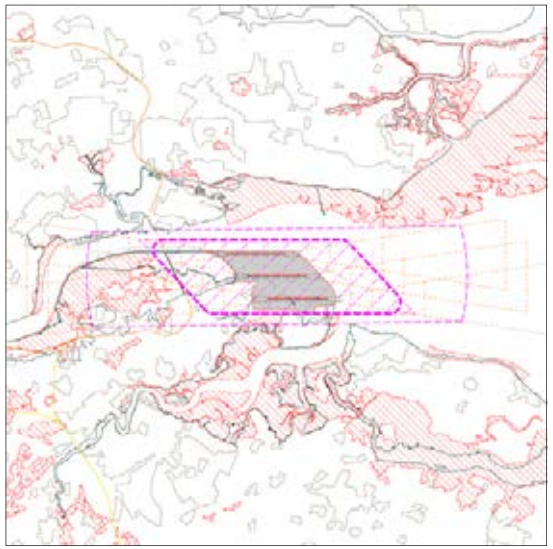


Indicative public safety zone

An aircraft crash is statistically most likely during the take-off and landing as indicates by the public safety zones. Public Safety zones are almost exclusively over open land and open water, offering a best protection for the local population.

- MS Montgomery legacy action plan
- Relocation of LNG plant over next 10 years
- Phasing out of power plant over next 10 years
- Navigation channel action plan
- Strategic pipeline action plan

BIRDSRTIKE safeguards

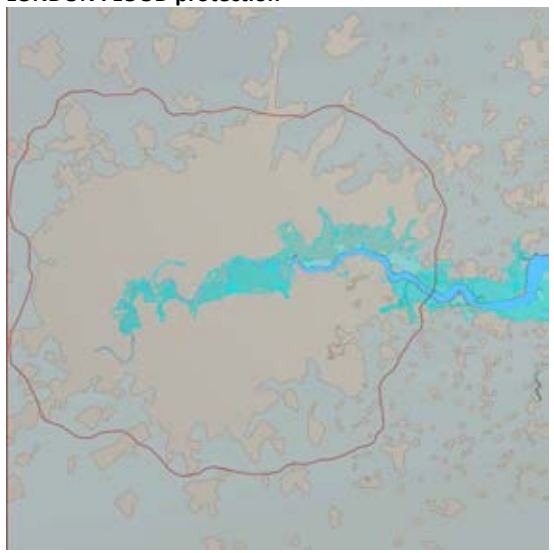


Active bird strike protection zone

In the active bird strike protection zone, Thames Reach Airport will make use of a fully automated 24-hour detection system for bird strike control, placing emphasis on the harmless denial of access to bird life rather than the destruction of their natural habitats. The automated system working in tandem with a 20-year programme for bird management and the creation of alternative habitats along the eastern seaboard will reduce the risk of bird strike to the levels experienced elsewhere in the UK.

- Early habitat relocation, prior to aerodrome construction
- Maintaining net bird habitat provision
- Protecting local habitat
- Radar based active bird dissuasion system
- Bird strike risk comparable to international standards
- Early closure of all Thames Estuary land fill sites

LONDON FLOOD protection



Thames flood risk area

As set out in the TE 2100 report London is in danger of a 1 in 100 flood event, with the current sea defence at Woolwich needing to be upgraded, due to increased closure event from 20-200 per year over the last 20 years. A new flood defence system should also avoid impacts on the navigation channel for maximum accessibility of the Port of London.

- Central London at risk
- Navigation channel retained open

COMMUNITY AND HERITAGE protection

St Mary Hoo church

Careful locating the aerodrome and mainly use of existing transport corridors protect the heritage and housing on the Hoo peninsular

- Preservation of all villages and housing
- Preservation of historic fabric
- Relocation of farm buildings

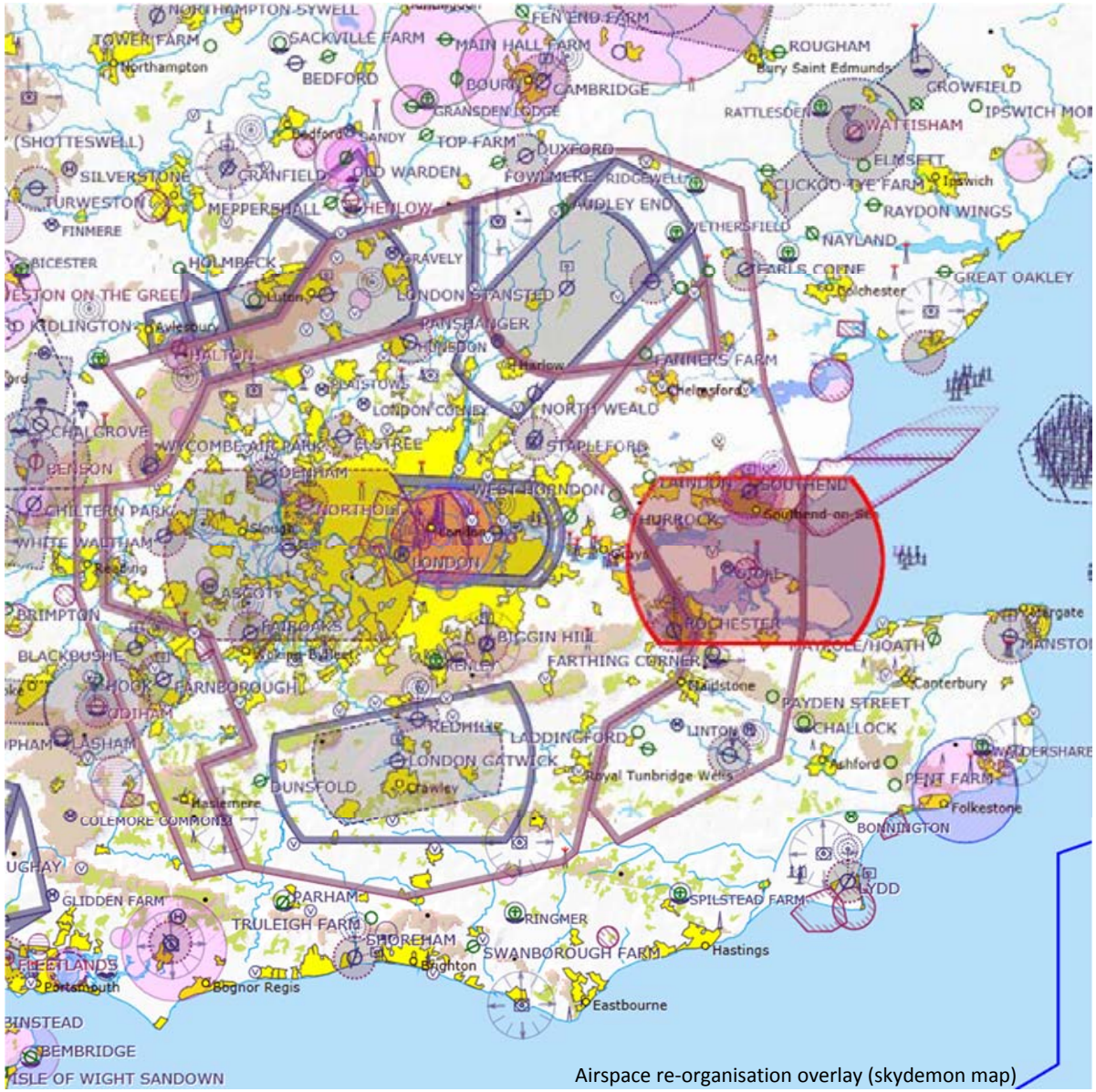
ENVIRONMENTAL protection

Regenerated brownfield protection areas

Extensive relocation and replacement habitats to mitigate the environmental impact and re vitalising the extensive brownfield areas left from the highly industrialised era of the Thames Estuary.

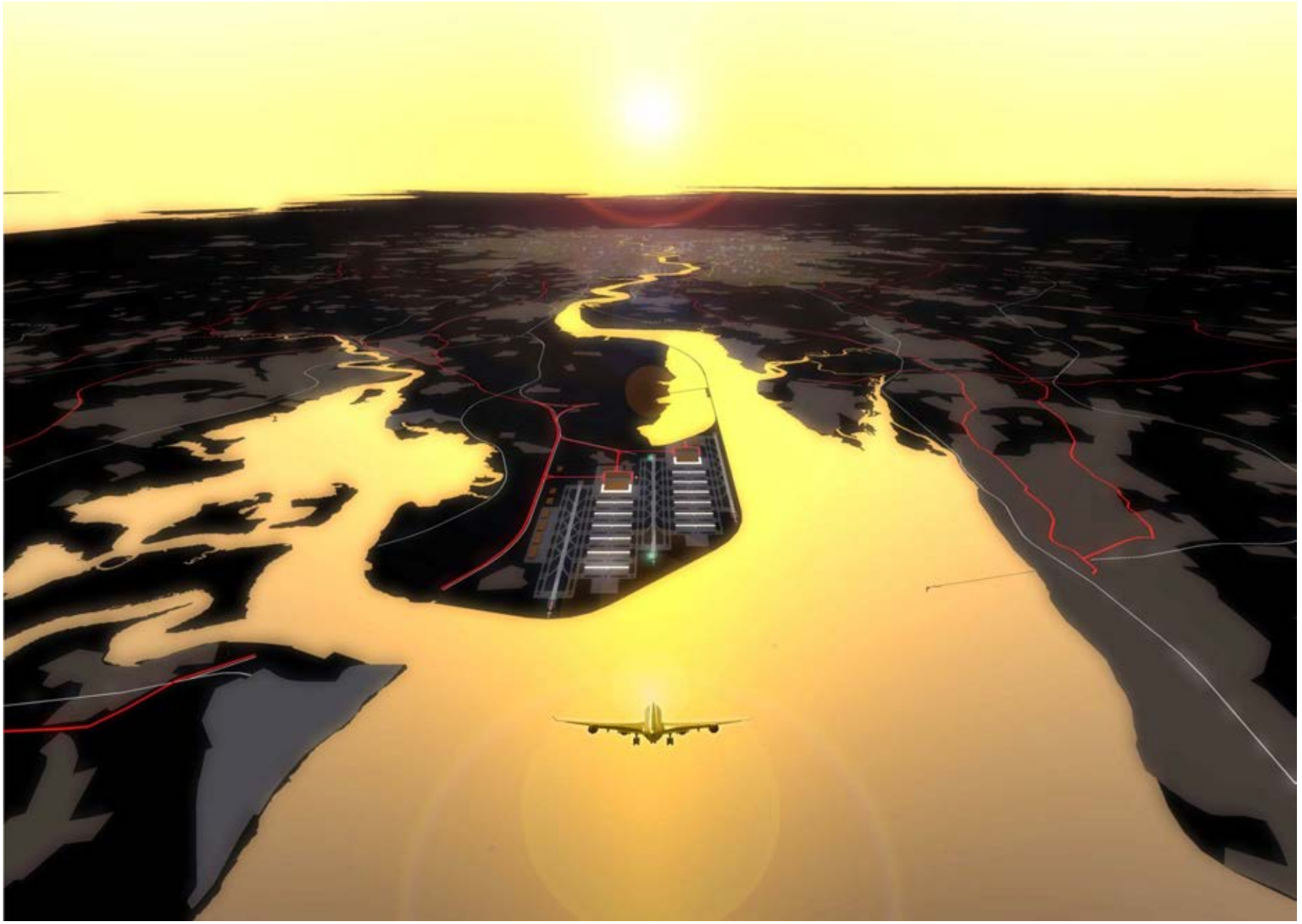
- Replacement habitats
- Brownfield regeneration
- Fisheries habitat relocation
- Continuous wildlife migration corridors
- Protection of sea defences and marshes
- Brownfield habitat regeneration

AIR SPACE IN THE SOUTHEAST



Airspace re-organisation overlay (skydemon map)

The airspace above London and the Southeast is one of the most congested in the world and placing a new hub airport infrastructure will impact on the existing flight paths and will require a substantial redesign of the existing system. This will be in the context of the Single European Sky (SES) to replace the existing national air traffic control systems. This will also go in hand with the phasing out of hub capacity at Heathrow as airlines switch over to the new integrated 24h AirRailHub.



PRESS

money.telegraph.co.uk

Business News

Estuary airport urged to replace Cliffe plan

By Alistair Osborne
Associate City Editor

PLANS for a £6·5 billion Thames Reach Airport in Kent will be presented today to a cross-party group of MPs by Bluebase, a London firm of architects.

Mark Willingale, partner at the Bluebase practice, believes the Thames Reach proposal is vastly superior to the Government's fledgling plans for an aviation hub at Cliffe, Kent. He argues that it should be adopted in Cliffe's place in the Government's south-east airports study.

While the Cliffe option is on land, Thames Reach airport would be nearer to Cliffe village but in the estuary, and closer to existing road and rail links.

Planned to be built in phases, the new airport would ostensibly be a Gatwick-size operation handling about 23m passengers a year.

A second phase could expand the airport to 110m passengers annually with 24-hour operations, and up to three runways. There would be further scope to develop a hub airport competing with Schi-

Better transport links are a feature of the estuary scheme

pol, Amsterdam, or Charles de Gaulle, Paris.

Bluebase's plans go much further than simply building new airport capacity because Thames Reach is intended to integrate with existing transport infrastructure and regenerate the Thames Gateway. The area was identified last week by John Prescott, deputy prime minister, as the site for up to 200,000 new homes.

The BAA-owned Heathrow, Stansted and Gatwick airports remain the cheaper option for building new runways, with Heathrow supported by British Airways.

But Mr Willingale said: "We plan to explain the difference between the existing vested-interest hodge-podges and a new purpose-built site." He had held "encouraging" talks with the Star Alliance consortium of airlines, which includes Lufthansa.

Central to the Bluebase proposal is the construction of a £1·5 billion road and rail tunnel under the Thames, linking Essex and Kent. It would provide an alternative to the congested Blackwall and Dartford crossings, and could be financed largely by road tolls.

Spoil from building the tunnel would be used to raise the site for the airport by six to eight metres above sea level.

Mr Willingale believes "only 20 households would be directly affected. The Government's scheme impacts 1,500".

He said that by adding "just a few extra kilometres" of railway, the airport would have direct rail links to Waterloo and St Pancras in London.

Mr Willingale accepts Thames Reach would initially be more expensive per passenger, but said: "If you are going to put 200,000 new homes in the Thames Gateway, you will have to put in the same infrastructure anyway."

He adds: "A third runway at Heathrow really is a compromised solution. Spending a net £5 billion on a new-build airport could ultimately prove much better value for money," he said.

The Daily Telegraph 11.2.2003 - p28

Greenfield airport plan re-examined

Minister keeps options open on 'long shot' runway sites

Andrew Clark
Transport correspondent

The prospect of a new airport on a greenfield site in the south of England is under consideration by the government, which has asked for more details of proposals for international terminals in north Kent and the Severn estuary.

Two months after the end of a public consultation on airport expansion, the Department for Transport has written to the backers of projects widely considered "long shots", asking them for a deeper analysis by September of the cost of road and rail links, passenger numbers and the cost of infrastructure.

Among those included are a proposed site on the Hoo peninsula in the Thames estuary, known as Thames Reach airport.

Officials also want a closer look at a plan for an airport on the Isle of Sheppey, a proposal for expansion of Redhill aerodrome in Surrey and a new terminal on an artificial island in the Severn estuary.

Whitehall sources say although the ideas were originally excluded from consultation documents, the transport secretary, Alistair Darling, wants to examine them on the same basis as options for new runways at Heathrow, Gatwick and Stansted.

The development confounds reports that Mr Darling has already made up his mind in favour of a third runway at Heathrow, although some in the aviation industry still believe he is merely "going through the motions".

A spokesman for the department confirmed that requests had been sent out: "We're helping them to develop their proposals so we can compare them on a consistent basis with the options we've put forward."

The proposed Thames Reach airport would include a £1.5bn road and rail tunnel under the Thames estuary, providing access to Essex.

The runways would extend into the estuary, avoiding problems with nearby birdlife which dogged the government's proposed Cliffe airport nearby.

The development of Redhill aerodrome in Surrey could turn it into a satellite terminal for Gatwick. And an airport on an artificial island in the Severn estuary, known as Severnside, would provide thousands of jobs for unemployed miners from the Welsh valleys.

An insider at one airport consortium said that at a late stage, the department had radically altered the way it was conducting the consultation.

Officials are said to be worried about a repetition of last year's high court challenge, in which a judge ruled that the government had acted improperly in excluding the possibility of expansion at Gatwick.

One source said: "The court case where they had to include Gatwick totally shocked them, and now they are clearly trying to avoid further challenges."

Mr Darling is to rule by the end of this year on where the extra aviation capacity should be provided. The Treasury is thought to favour Heathrow airport on economic grounds, after intensive lobbying by airlines led by British Airways.

The government could give the green light for longer term expansion of Stansted and for a second runway at Gatwick after the expiry of a legal commitment against expansion in 2019.

guardian.co.uk/airlines

Photograph: Doug Houghton/ePicscotland.com

ls in tragedy

t a problem
as a warn
ailed to re-
on Sunday,
rther 100ft
ther, break-
cutting her
was able to
ther, but he
wn to her,"
"She then
ad to get off

4pm. She could have started down the mountain any time between 6am and 10am."

Mr Grieve said he thought Mr King had decided to carry on down the mountain himself, not knowing whether his daughter would make it, and had lost his footing.

He added that it seemed father and daughter knew what they were doing.

"They were both well equipped and if they hadn't known the area already, they

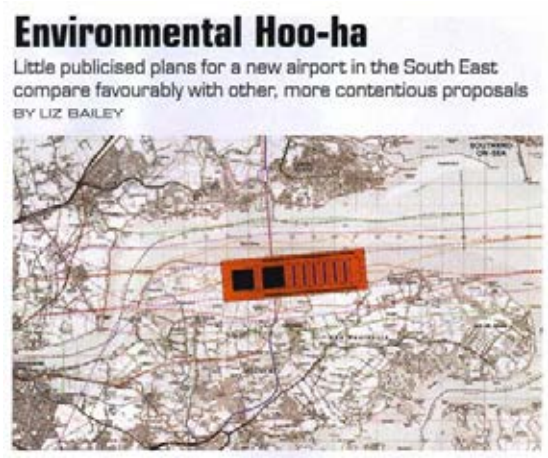
The Guardian 26.8.2003 – p5

FOCUS

HEATHROW HELL

CROWNING GLORY

The Sunday Times 2.3.2008 - p13



Environmental Hoo-ha

Little publicised plans for a new airport in the South East compare favourably with other, more contentious proposals

BY LIZ BAILEY

The Architects Journal 13.11.2003 – p44

NEWS

Boris airs plan for Heathrow-on-Sea

The Sunday Times 10.2.2008 - p10

Economist 29.3.2008 - p92

SUMMARY

The Thames Reach Airport Consortium is a private sector initiative to develop and operate the AirRailHub and associated infrastructures. The London based independent consortium has been founded in 2002 and is support by UK consultants.

We believe there is an overwhelming case to construct a new 24h hub airport at the Isle of Grain for the next century, as an alternative to retain the status quo at Heathrow. A third runway in Heathrow will only allow a marginal increase of capacity and will therefore be only a temporary fix at an enormous environmental cost for the population of London.

For further information please contact:

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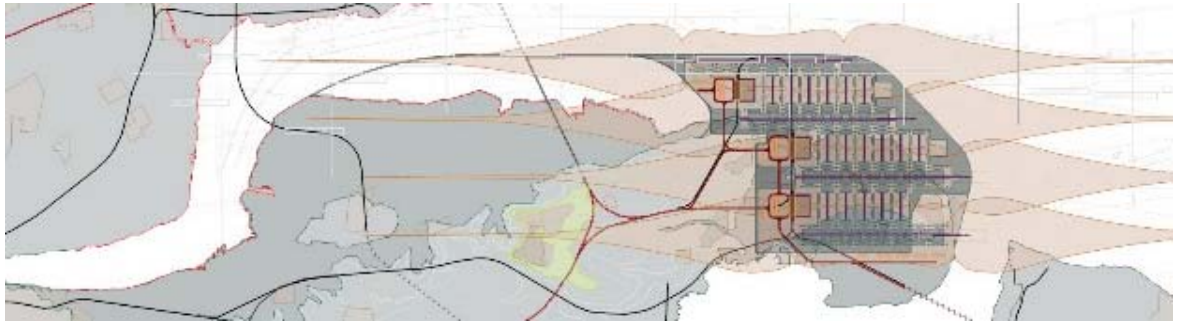
AirRailHub and principle rail links



Optional 4 wide-spaced runways layout

Thames Reach Airport Limited
Company No 06527854
Registered in England and Wales

Appendix 1 - **CHALLENGES IN THE SOUTH EAST**

Property values (by Zoopla Feb2012)

Thames Estuary has been suffering economically post war area (reflected by average property prices) due to the decline of the London ports. A number of separate studies have identified shortcomings and hart to implement, due to lack of an overarching strategy.

Regeneration

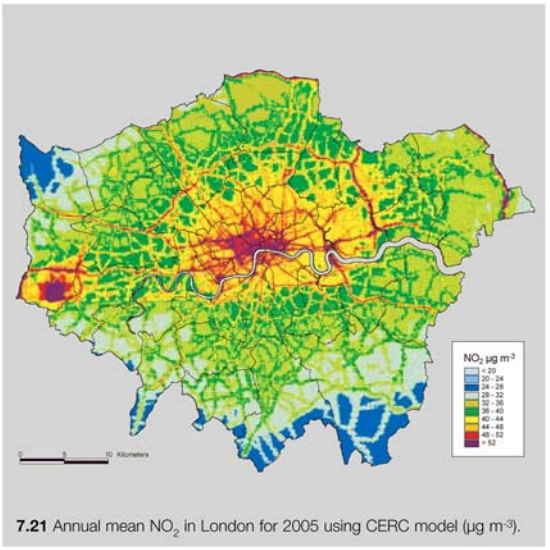
- Thames Gateway
- SELEP (local enterprise partnership)
- Thames Gateway Forum
- Essex/Kent deprived areas
- Local skills
- Employment
- Vision for the SouthEast

Traffic M25 (Orbit Study)

The existing organically grown transport networks (rail and road) are largely radial have entrenched the travel pattern via the centre of London and have reached their full capacity, as with the only orbital route the M25.

Transport

- Rail bypass (W11 freight routes)
- Air rail substitution
- Mode sift - HGV traffic from Dover
- Congested Central London and M1 corridor
- Lower Thames Crossing / Dartford relieve
- 24h aviation capacity (cargo)
- Eastern seaports rail access to EU



7.21 Annual mean NO_2 in London for 2005 using CERC model (µg m^{-3}).

Air pollution in M25 area (London ERG model)

Central London and the Heathrow area have reached their legal air pollution limits, with highest rate of asthma in the local resident population. Also highest noise pollution aircraft overflying densely populated areas (quarter of Europeans damaged by noise life next to Heathrow).

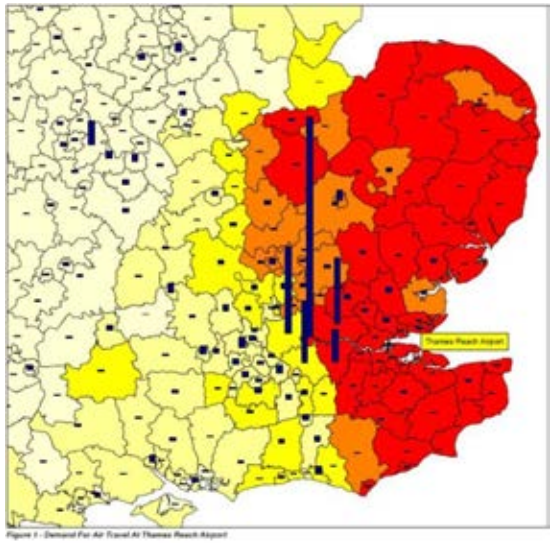
Environment

- Flood risk London and Thames Gateway
- Air pollution local and global
- Noise pollution
- Drought and water shortage in the Southeast
- NO2 levels
- Excessive car use
- Loss of intertidal mudflats

Appendix 2 - **CONNECTING THE SOUTH EAST**

RUS alternative freight routes 2031

Agglomeration model (Space Syntax)



Surface access for Thames Reach Airport (SERAS)

Vital new European through routes would be available linking all of the UK with the European mainland via an unconstrained bypass east of London and rationalising freight traffic away from the road.

RAIL

- Freight mode shift
- W11 gauge rail routes Dover/Thames/Felixstowe/Midlands
- Felixstowe / Nuneaton link
- Alternative Dover to Lower Thames Crossing link
- General rail network improvements

A new Lower Thames crossing connects radial road and rail networks north and south of the Thames. This link merges Essex and Kent to form a new economic block, by shortening travel time and much needed relieve to the more central road networks.

Road

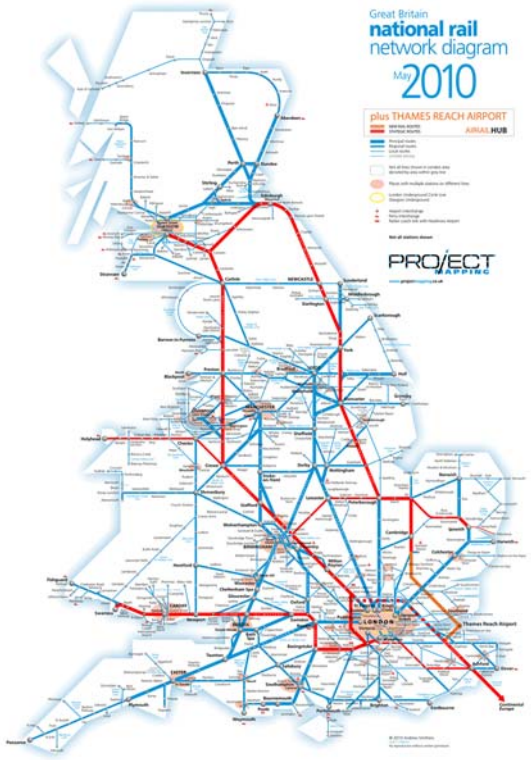
- Agglomeration 5% benefit
- Congestion relieve 3% relieve
- Dartford relieve

For a resilient access of the economic pool of the South East and UK, it is vital to offer widest possible rail and road surface access to the new airport together with 24h runway access to reach the furthest parts of the world.

Air

- Widest direct rail and road surface access
- 24h runway operation
- High capacity
- Target the economic pool of the southeast

Appendix 3 - **NATIONAL TRANSPORT VISION**



RAIL

- Resilient double spine (WCL,ECL)
- Continent to England, Wales, Scotland, Ireland link
- GC Gage (W11) for freight mode shift
- London Eastern bypass
- London/Birmingham corridor relieve

ROAD

- Resilient double spine (M6, A1)
- Continent to England, Wales, Scotland, Ireland link
- M25 Eastern bypass
- London/Birmingham corridor relieve

AVIATION

- Point to Point (destination) airports (blue)
- AirRailHub airport (orange) for UK and across the Channel
- Rationalised aviation capacity in the South East
- 24h intercontinental access
- National hub served directly by high speed rail

Appendix 4 – **INDICATIVE COST PROGRAM (2012)**

METROTIDAL TUNNEL AND THAMES REACH AIRPORT CONSTRUCTION PROGRAMME ON SITE							
DATE	mppa	AIRPORT PHASES	£bn	ENVIRONMENTAL MANAGEMENT £bn	SURFACE ACCESS	£bn	TOTAL £bn
2016	-	-	-	-	Metrotidal Tunnel start	0.5	0.5
2018	-	-	-	-	Thames Reach Airport start	0.5	1.0
2020	-	Airport on-costs	1.0	0.5	Metrotidal Tunnel opens	2.5	5.0
2022	30	1 Runway + 1CTA + 2 Satellites	6.0	1.5	Thames Reach Airport opens	0.5	13.0
2024	60	1 Runway + 1CTA + 4 Satellites	1.0	0.5	-	-	14.5
2028	90	2 Runway + 1CTA + 6 Satellites	4.0	0.5	High Speed 1 connection	0.5	19.5
2030	120	2 Runway + 2CTA + 8 Satellites	3.0	0.5	Sheppey Tunnel	0.5	23.5
2034	150	3 Runway + 2CTA + 10 Satellites	4.0	0.5	Essex Cross Country	1.0	29.0
2036	180	3 Runway + 2CTA + 12 Satellites	1.0	-	-	-	30.0
TOTALS	180		20.0	4.0		6.0	30.0

Appendix 5 – **BUSINESS CASE COMPARISON (2012)**

Indicative business case of the AirRailHub and comparative proposals for reference				
Promoter	Heathrow	Thames Reach	Thames Hub	Off shore
	"3rd Runway"	"AirRailHub"	"Foster team"	"Boris Island"
Initiation year	2002	2002	2011	2009
Capacity (mppa)	120	180	150	180
Opening date	2028	2028	2032	2036
Airport cost	9bn*	20bn	20bn	30bn
Surface access cost	11bn**	6bn	30bn	40bn
total cost	20bn	26bn	50bn	70bn
Environmental remidiation	?	4bn	?	?
Operating hours	16h	24h	24h	24h
Noise (residents within 57dB countour)	250,000	500	500	0
local air polution	over EU limit	well within EU limit	well within EU limit	well within EU limit
Demolished houses	500	5	500	0
Flood defence	n/a	storage	barrier	n/a
Tidal power	n/a	pool	barrier	n/a

Appendix 6 – **Indicative operator structure (2012)**

	Operator structure of TRA integrated solution				
	Components	Regulator	owner/operator (options)		
£bn			A.	B.	C.	D.
20	Airport	CAA	TRA	BAA		
3	Tunnel	DfT	MT	Dartford	TRA	
0.5	HS1 link	NR	Network Rail			
0.5	Essex cross country	NR	Network Rail			
0.2	Rail cords	NR	Network Rail			
0.5	GC gage corridor	NR	Network Rail			
0.1	Crossrail+	NR	Crossrail			
0.01	Express train	NR	Franchise			
1	Road links	DfT	DfT			
1	Flood defences	Env.Ag	Env.Ag.			
1	Pool	Env.Ag	Env.Ag.	MT	EDF	TRA
0.3	Tidal power	Power	MT	EDF	TRA	
1.5	Sheppy Tunnel	DfT	MT	Dartford	TRA	Medway
0.2	Business zone	Medway	Private	TRA		
29.81						