

Hub for London

Land and Housing Technical Note

Transport for London

July 2013

ATKINS



Notice

This document and its contents have been prepared and are intended solely for Transport for London's information and use in relation to The Hub Airport Study.

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 16 pages including the cover.

Document history

Job number: 5120377			Document ref:			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0.1	For Internal Review	JCB	PW	PW		23/05/13
Rev 1.0	Draft for Client Review	JCB	PW	PW	PJT	29/05/13
Rev 2.0	Amended draft for Client Review	JCB	PW	PW	PJT	01/07/13
Rev 3.0	Amended for Client comments	JCB	PW	PW	PJT	30/08/13
Rev 4.0	Amended for Client comments	JCB	PW	PW	PJT	27/09/13

Client signoff

Client	Transport for London (TFL)
Project	TFL Hub Airport Study
Document title	Land and Housing Technical Note
Job no.	5120377
Copy no.	
Document reference	359

Table of contents

Chapter	Pages
1. Introduction	4
2. Summary	5
2.1. Quantum of identified major housing sites	5
2.2. Identified major housing development sites within the 55dBLden average day noise contour	5
3. Distribution of Major Housing Sites	6
3.1. Methodology	6
3.2. Inner Estuary: Isle of Grain	6
3.3. Outer Estuary	8
3.4. Stansted	9
4. Agricultural Land Quality	11
4.1. Airport Sites	11
4.2. Surface Access	11
5. References	12
Appendix A. Inner Estuary: Isle of Grain Figures	13
Appendix B. Outer Estuary Figures	14
Appendix C. Stansted Figures	15

Tables

Table 1 Identified major housing development sites identified in the vicinity of each proposed airport site

Table 2 Identified major housing development sites within the 55dBLden average day noise contour

Table 3 South East Plan – dwellings planned totals 2006 – 2026 – North Kent districts

Table 4 East of England Plan – dwellings planned totals 2001 – 2021 – South Essex districts

Table 5 East of England Plan – dwellings planned totals 2001 – 2021 – Stansted area districts

Figures

Inner Estuary: Isle of Grain – Planned Residential Development – A

Inner Estuary: Isle of Grain – Planned Residential Development – B

Inner Estuary: Isle of Grain – Planned Residential Development – C

Inner Estuary: Isle of Grain – Planned Residential Development – D

Outer Estuary – Planned Residential Development – A

Outer Estuary – Planned Residential Development – B

Stansted - Planned Residential Development – A

Stansted - Planned Residential Development – B

Stansted - Planned Residential Development – C

1. Introduction

This document is intended to identify the agricultural land quality and proposed major housing site locations in the environs of the proposed Hub for London sites to inform the Transport for London report to the Airports Commission for each site. The potential locations identified for new airport capacity are:

- Inner Estuary (Isle of Grain)
- Outer Estuary
- Stansted (to the north east of the existing London Stansted Airport)

Section 2 provides summary tables for the overall quantum of dwellings that may be provided, irrespective of any airport proposals, via identified major housing sites (defined as those where 100 or more dwellings are proposed), and the approximate quantum of identified major housing sites within the 55dBLden average day noise contour.

Section 3 sets out the likely quantum and distribution of major housing delivery proposed for environs of each site (the study area being up to a distance of approximately 20km from the runway ends at each site, plus approximately 10 km to each side), to inform the likely extent of residential areas which may be affected by the proposals. It also identifies the approximate quantum of identified major housing sites within the 55dBLden average day noise contour. The 55dBLden average day noise contour identifies the number of sites that would be exposed to noise over 55 decibels or above.

Section 4 provides a brief indication of the agricultural land quality distribution at each site.

Section 5 provides document references for the data used.

The Appendices contain figures showing the identified major housing sites for each potential airport location.

A description of the existing site and surroundings for each of the options is contained within the Landscape and Visual Technical Note.

2. Summary

2.1. Quantum of identified major housing sites

The quantum of identified major housing sites identified in the study area for each of the airport proposals is set out in the table below.

Table 1. Identified major housing development sites identified in the study area for each proposed airport site

Airport Site	Approximate number of major housing development site units	Approximate potential population increase arising from major development site units (assumes 2.3 people per dwelling)
Inner Estuary: Isle of Grain	56,214	129,292
Outer Estuary	9,742	22,407
Stansted	52,757	121,341

2.2. Identified major housing development sites within the 55dBLden average day noise contour

The approximate quantum of identified major housing sites within the 55dBLden average day noise contour is set out in the table below. Where a site is partially within the contour the full site development potential totals have been included as proportional estimates of development potential are likely to be unreliable. The 55dBLden average day noise contour identifies the number of sites that would be exposed to noise over 55 decibels or above.

Table 2. Identified major housing development sites within the 55dBLden average day noise contour

Airport Site	Approximate number of major housing development site units within the 55dBLden average day noise contour	Approximate potential population increase arising from major development site units (assumes 2.3 people per dwelling) within the 55dBLden average day noise contour
Inner Estuary: Isle of Grain	609	1,400
Outer Estuary	0	0
Stansted	31,131	71,601

The figures in Tables 1 & 2 above indicate the major housing sites currently proposed within the study areas. Should an airport proposal come forward at any of the three proposed locations, it would not automatically preclude development of housing within the 55dBLden average day noise contour, although more substantial noise mitigation could be required within such developments.

3. Distribution of Major Housing Sites

3.1. Methodology

An analysis of housing figures in the former Regional Spatial Strategies (RSS) for the South East and East of England has been undertaken. Although it is recognised that the RSSs are no longer extant, it is considered that the figures generally represent the current requirements for dwellings in the east and south east of England. Additionally district and borough level data has been considered. This has focussed on Strategic Land Availability Assessment documents (including Strategic Housing Land Availability Assessment documents) prepared by each local authority. Although not all sites identified in a SHLAA will be developed, considering the sites identified in the SHLAA as “suitable, available and achievable” sets out the maximum likely development over the relevant plan period and thus a maximum number for housing development over the next decade or so. Where a SHLAA or similar document is not available existing local plan data have been considered.

Analysis of the data has allowed the quantum of development in districts surrounding the proposed airport locations to be identified and mapped up to 20km from the runway ends at each proposed airport site and up to 10km either side, except for the north side of the proposed Outer Estuary location. The accompanying plans in Appendix A (Inner Estuary: Isle of Grain), Appendix B (Outer Estuary) and Appendix C (Stansted) set out locations for major residential development sites identified from the data. For the purposes of this report, these major development sites are defined as those accommodating 100 or more dwellings.

3.2. Inner Estuary: Isle of Grain

The proposed development would be located on the Isle of Grain and Hoo Peninsula, in north Kent, and includes for extending onto the mud banks off the coastline. The road access routes to the airport boundary would include a Lower Thames Crossing and link east and north of Grays to the M25, a four lane link from the airport to the A2/M2, one lane widening A289 from A2 to airport, two lane widening on A2 between the M25 and the M2, two lane widening M25 J29/30 to J27, one lane widening M25 J27 to J21, two lane widening M25 J2 to J7 and all lane running M25 J7 to J9.

The rail access towards Gravesend would in part align with existing rail infrastructure to the Hoo Peninsula with additional junctions. It would also include new lines crossing the River Thames to Grays and then into central London, generally following the alignment of the existing railway.

The noise contours delineate the 55dB Lden average day noise contour as extending westwards from Tilbury and Chadwell St.Mary, across the Hoo Peninsula into the Thames Estuary, incorporating Sheerness and part of the northern coast of the Isle of Sheppey.

3.2.1. Former South East Plan Regional Spatial Strategy

Prior to revocation the South East Plan Regional Spatial Strategy (RSS) (Government Office for the South East, 2009) envisaged 52,140 new dwellings in the Kent Thames Gateway sub-region between 2006 and 2026.

Each district had an individual target in the RSS. These are set out in the table below. Note that the number in the table are greater than the Kent Thames Gateway sub-region numbers as the Kent Thames Gateway figures do not include Canterbury district, nor the western part of Swale.

Table 3. South East Plan – dwellings planned totals 2006 – 2026 – North Kent districts

District	Total dwellings planned 2006 - 2026
Canterbury	10,200
Dartford	17,340
Gravesham	9,300
Medway	16,300
Swale	10,800
Totals	63,940
Total potential population (assumes 2.3 people per dwelling)	147,062

3.2.2. Former East of England Plan Regional Spatial Strategy

Prior to revocation the East of England Plan Regional Spatial Strategy (RSS) (Government Office for the East of England, 2008) envisaged 44,300 new dwellings in the Essex Thames Gateway sub-region between 2001 and 2021.

Each district had an individual target in the RSS. These are set out below. The total is lower than the overall target due to the housing completions over the period from 2001 to the publication of the plan in 2008.

Table 4. East of England Plan – dwellings planned totals 2001 – 2021 – South Essex districts

District	Total dwellings planned 2001 - 2021
Basildon	9,480
Castle Point	2,990
Rochford	3,790
Southend	4,370
Thurrock	14,250
Totals	34,880
Total potential population (assumes 2.3 people per dwelling)	80,224

3.2.3. Spatial Analysis

3.2.3.1. Airport Site

As can be seen on the plans in Appendix A, west of the Inner Estuary: Isle of Grain site between 15 and 25km distant, major planned sites could accommodate 11,564 dwellings. These sites are predominantly in the Swanscombe, Ebbsfleet and Northfleet area (Sites 25 to 32). Planning applications encompassing 2,330 dwellings have been approved in the Ebbsfleet Valley. Further proposals at the Northfleet West Substation site and Eastern Quarry have the potential to accommodate 1,250 and 6,250 dwellings respectively. A resolution to grant permission has been made on the substation site, whilst outline approval subject to submission of details has been granted on the quarry site.

South west of the Inner Estuary: Isle of Grain between 10 and 15km, major planned sites could accommodate 10,553 dwellings (Sites 33 to 43 on Estuary Sheet B). These sites are predominantly in the Rochester and Chatham areas of Medway Council. There is a significant site currently identified at Lodge Hill, north of Rochester, which is a former military establishment.

An outline planning application was submitted for the Lodge Hill site (site 43) in late 2011 for the delivery of a mixed-use new settlement comprising up to 5,000 residential units, up to 36,750 sq m GEA B1 business floorspace, up to 7,350 sq m GEA B2 business floorspace, up to 3,251 sq m GEA convenience (Class A1) floorspace, up to 2,070 sq m GEA comparison (Classes A1, A2, A3, A4, A5) floorspace, secondary school, three primary schools, community centre, healthcare centre, assisted living facility, nursing home, garden centre, two hotels, water bodies and works associated with the development including roads, landscaping, informal and formal open space, pedestrian, cyclist and public transport infrastructure, utilities infrastructure, car and cycle parking. However at the time of writing (May 2013) no decision had been made on the application and Natural England has designated a significant proportion of the site as a Site of Special Scientific Interest due to the presence of nightingales.

South of the Inner Estuary: Isle of Grain site, between approximately 5 and 10km, major planned sites could accommodate 6,416 dwellings, predominantly in and around Sittingbourne (Sites 61 to 71 and 73).

East of the Inner Estuary: Isle of Grain site, major planned sites on the Isle of Sheppey around Minster and Queenborough could accommodate a further 2,326 dwellings within a 10km radius (Sites 57 to 60).

North of the Thames Estuary there are fewer major development sites identified. This is predominantly due to the tightly constrained nature of the district borders around the existing urban area. With the exception of one site at the Kursaal in Southend (Sites 12) and three sites around Great Wakering (Sites 13 to 15), the remainder of identified potential major development sites are around Benfleet, approximately 15km away. In the Benfleet area major sites that could accommodate 5,881 dwellings have been identified (Sites 2 to 7, 9 to 15 and 17 to 23).

Sites for approximately 4,339 further dwellings on major development sites have been identified in Thurrock, between 15 and 25km from the airport site (Sites 44 to 56 and 108).

The proposal will not directly affect any identified sites.

3.2.3.2. Surface access

The proposed road and rail access via Thurrock could affect sites 48 in Chadwell St Mary, 108 in Grays, and 52 in East Tilbury. No other identified sites are affected. The widened A289 may require a minor part of the Lodge Hill site (Site 43) but at present this site is unlikely to provide significant development potential due to the recent SSSI designation.

3.2.3.3. Noise Contours

The 55dBLden average day noise contour will encompass all or part of the following sites: 48, 49, 50 and 52 in Thurrock, a total of 609 units.

Additionally site 43 (Lodge Hill) is partially within the contour but at present this site is unlikely to provide significant development potential due to the recent SSSI extension designation. It is thus excluded from the figures in the table in section 2.

3.3. Outer Estuary

The proposed airport boundary would be located within the Thames Estuary, off the Kent coast, to the north of Herne Bay and Whitstable. The road transport access would cross the Thames Estuary from the airport boundary in a number of directions and include for widening of the M25, A2 and M2 and include additional crossing points over the River Thames. New routes from the airport boundary would cross westwards to the Isle of Grain and onwards to connect with the M25, and south to the A299.

Rail access would also include a number of existing lines within the M25, and from Gravesend partly following the existing rail lines on the Hoo Peninsula before crossing the River Medway, Isle of Sheppey and the Thames Estuary. It would also include new lines crossing the River Thames to Grays and then into central London, generally following the alignment of the existing railway.

The noise contours delineate the 55dBLden average day noise contour as within the Thames Estuary.

For information on former South East Plan housing targets please see the Inner Estuary section above.

3.3.1. Spatial Analysis

3.3.1.1. Airport Site

As can be seen on the plans in Appendix B, west of the Outer Estuary site over 25km distant, major planned sites could accommodate 10,553 dwellings. These sites are predominantly within Rochester and Chatham areas of Medway Council. There is a significant site currently identified at Lodge Hill, north of Rochester, which is a former military establishment.

South of the Inner Estuary: Isle of Grain site, between approximately 5 and 10km, major planned sites could accommodate 6,416 dwellings, predominantly in and around Sittingbourne (Sites 57 to 60).

East of the Inner Estuary: Isle of Grain site, major planned sites on the Isle of Sheppey around Minster and Queenborough could accommodate a further 2,326 dwellings within a 10km radius (Sites 57 to 60).

There are few major development sites identified south of the Outer Estuary site, with 630 dwelling sites in the Canterbury area, and 259 in Herne Bay and 111 at Hersden (Sites 74 to 77).

The proposal will not directly affect any identified sites.

3.3.1.2. Surface Access

The proposed road link between Whitstable and Herne Bay would directly affect the existing Studd Hill area of Herne Bay. The proposed rail access via Thurrock could affect sites 48 in Chadwell St Mary, 108 in Grays, and 52 in East Tilbury. No other identified sites are affected.

3.3.1.3. Noise Contours

The 55dBLden average day noise contour does not affect any of the identified major planned sites.

3.4. Stansted

As can be seen on the plans in Appendix C, the proposed airport boundary would include the existing airport and extend north-east towards Thaxted and Great Dunmow, in the Uttlesford District, Essex. The principal road access would be linked to the M11, which would be widened by three additional lanes south of the airport and by one lane to the north of the airport. A new single lane access road would join the M11 at Burton end with a new three lane access road duplication the A120 to join the M11 east of Bishop's Stortford.

The rail access would include for the existing London to Stansted rail line with an additional line between Barking and Great Hallingbury, broadly following the M11, until Hatfield Heath, where both would take a new alignment to the airport boundary.

The noise contours delineate the 55dBden average day noise contour as extending westwards from Bishops Stortford to Great Dunmow and north-east from Harlow to the east of Haverhill.

3.4.1. Former East of England Plan Regional Spatial Strategy

Prior to revocation the East of England Plan Regional Spatial Strategy (RSS) (Government Office for the East of England, 2008) envisaged 98,620 new dwellings in Essex (and the Harlow extensions in East Hertfordshire) between 2001 and 2021. The RSS envisaged 4,300 homes for North Hertfordshire as a whole and 10,000 for St Edmundsbury (Suffolk) as a whole.

Each district had an individual target. These are set out below.

Table 5. East of England Plan – dwellings planned totals 2001 – 2021 – Stansted area districts

District	Total dwellings planned 2001 - 2021
Braintree	4,340
Chelmsford	12,430
Epping Forest	2,290
Harlow	15,190
Uttlesford	6,390
East Hertfordshire	9,860
North Hertfordshire	4,300
St Edmundsbury	10,000
Totals	64,800
Total potential population (assumes 2.3 people per dwelling)	149,040

3.4.2. Spatial Analysis

3.4.2.1. Airport Site

Examination of data within the boroughs listed above, identified 31 major development sites within a radius of approximately 15km of the proposed airport location. These are predominantly extensions to existing settlements.

At Bishop's Stortford, immediately to the south west of the Stansted site sites have been identified for 4,683 new dwellings (Sites 82, 88 to 91 and 100). At Takeley, immediately to the south of the Stansted site sites for 2,215 new dwellings (Sites 79 to 81). Sites for 3,400 new dwellings at Elsenham and 153 dwellings Stansted Mountfitchet, both immediately to the north of the existing airport, have been identified (Sites 83 to 86). Finally at Great Dunmow, south east of the proposed airport site, there are sites for a further 2,872 dwellings (Sites 93 to 99).

Further south but still within 15km south west of the airport site, sites for expansion around Harlow and Sawbridgeworth could account for up to 21,590 new dwellings (Sites 101 to 106). A similar distance to the north of the existing airport sites for 714 dwellings have been identified around Newport (Sites 87 and 109).

Around Haverhill, approximately 17km north of the airport site another 3,850 dwellings are proposed in four sites. To the north east just over 15km from the airport site, a site for 150 dwellings has been identified in Sible Hedingham.

The proposal may directly affect sites 94, 95, 96 and 98 at Great Dunmow and site 79 at Takeley.

3.4.2.2. Surface Access

The proposed new road link may require part of the Sites 79 and 81, north and west of Takeley. The proposed widening of the M11 may affect sites 83 and 85 at Elsenham, site 87 at Newport, Site 82 at Bishop's Stortford and sites 101 and 102 at Harlow. No other identified sites are affected.

The proposed connection to the existing rail line could affect site 101 at Harlow.

3.4.2.3. Noise Contours

The 55dBLden average day noise contour will encompass all or part of the following sites: 94, 95, 96, 98 in Great Dunmow, 79, 80 and 81 in Takeley, sites 82 and 91 in Bishop's Stortford, sites 103 and 104 at Sawbridgeworth, and site 101 north east of Harlow. Sites 100, 102 and 105 are partially within the 55dBLden average day noise contour. This equates to a total of 31,131 proposed dwellings within the 55dBLden average day noise contour. Where a site is partially within the contour the full site development potential totals have been included as proportional estimates of development potential are likely to be unreliable.

4. Agricultural Land Quality

4.1. Airport Sites

4.1.1. Inner Estuary

The majority of the agricultural land at the Inner Estuary: Isle of Grain site is Grade 4, but with elements of Grade 1 and Grade 2. Grade 1 and 2 land is “best and most versatile land”, development of which would require statutory consultations with Natural England¹.

4.1.2. Outer Estuary

The outer estuary airport site does not affect agricultural land quality.

4.1.3. Stansted

The majority of the agricultural land at the Stansted airport site is Grade 2, with elements of Grade 3. This is “best and most versatile land” development of which would thus require statutory consultations with Natural England.

4.2. Surface Access

The schemes to provide surface access to the airport sites will cross a range of Grades of agricultural land. The detailed design of the surface access will need, where possible, to avoid the best and most versatile agricultural land.

¹ Natural England Technical Information Note TIN049

5. References

The following documents were referred to for this technical note:

1. South East Plan, Government Office for the South East, 2009
2. East of England Plan, Government Office for the East of England, 2008
3. Canterbury District Local Plan, 2006
4. Canterbury Strategic Housing Land Availability Assessment (SHLAA) Call for Sites 2011
5. Dartford Strategic Housing Land Availability Assessment (SHLAA), 2010
6. Gravesham Strategic Land Availability Assessment (SLAA), 2012
7. Medway Strategic Land Availability Assessment (SLAA), 2013
8. Swale Strategic Land Availability Assessment (SLAA), 2012
9. Basildon Strategic Housing Land Availability Assessment (SHLAA), 2012
10. Castle Point Strategic Housing Land Availability Assessment (SHLAA), 2012
11. Rochford Strategic Housing Land Availability Assessment (SHLAA), 2012
12. Southend on Sea Strategic Housing Land Availability Assessment (SHLAA), 2010
13. Thurrock Draft Site Specific Allocations and Policies Local Plan Further Issues and Options, 2013
14. East of England Plan, Government Office for the East of England, 2008
15. Epping Forest Strategic Land Availability Assessment (SLAA), 2012
16. Chelmsford Site Allocations Development Plan Document (SADPD), 2012
17. Braintree Strategic Housing Land Availability Assessment (SHLAA), 2010
18. Uttlesford Strategic Housing Land Availability Assessment (SHLAA), 2012
19. North Hertfordshire Strategic Housing Land Availability Assessment (SHLAA), 2012
20. East Hertfordshire District Plans, Strategy Supporting Document, Draft Step 4: Places, 2012
21. Harlow Options Appraisal (2010)
22. St Edmundsbury Strategic Housing Land Availability Assessment (SHLAA) 2011/12, 2012
23. South Cambridgeshire Strategic Housing Land Availability Assessment (SHLAA), 2013
24. Natural England Technical Information Note TIN049 (2012)

Appendix A. Inner Estuary: Isle of Grain Figures

On electronic copies of this technical note, figures are provided as separate PDF, named as below. These are high density images which can be zoomed in.

- Inner Estuary: Isle of Grain – Planned Residential Development – A
- Inner Estuary: Isle of Grain – Planned Residential Development – B
- Inner Estuary: Isle of Grain – Planned Residential Development – C
- Inner Estuary: Isle of Grain – Planned Residential Development – D
- Outer Estuary – Planned Residential Development – A
- Outer Estuary – Planned Residential Development – B
- Stansted - Planned Residential Development – A
- Stansted - Planned Residential Development – B
- Stansted - Planned Residential Development – C

The assessment is based on the following:

- Airport Masterplan: Stansted 30/05/2013, IE and OE layouts 23/04/2013
- Surface Access Infrastructure (Roads): revision E for IE and OE, revision D for STN
- Surface Access Infrastructure (Rail): revision dated 13/06/2013

Copies are not reproduced here, as the salient sections are included in the figures above.

Appendix B. Outer Estuary Figures

Appendix C. Stansted Figures

Jon Barker
Atkins
Euston Tower
286 Euston Road
London
NW1 3AT

Email: Jon.Barker@atkinsglobal.com
Telephone: 020 7121 2363

© Atkins Ltd except where stated otherwise.

The Atkins logo, 'Carbon Critical Design' and the strapline
'Plan Design Enable' are trademarks of Atkins Ltd.