REPORT of
CHIEF EXECUTIVE

to
PLANNING AND LICENSING COMMITTEE
14 SEPTEMBER 2017

LONDON SOUTHEND AIRPORT: CONSULTATION CONCERNING THE INTRODUCTION OF NEW APPROACH PROCEDURES

1. PURPOSE OF THE REPORT

1.1 This report provides an overview of consultation being undertaken by London Southend Airport on new procedures for the approach to the airport. Members' views are sort.

2. RECOMMENDATIONS

That the contents of the report are noted and Members comments are sought.

3. SUMMARY OF KEY ISSUES

3.1 London Southend Airport (LSA) is consulting on proposed changes to the approach patterns for aircraft into the airport. The airport has a duty to consult on the proposed changes and the consultation ends on 13 September 2017. The consultation report is available as a Background Paper at http://southendairport.com/corporate-and-community/proposed-arrival-routes

3.2 As set out in the second para to the reports Executive Summary:

'The procedures that [LSA] are seeking to implement do not replace any existing procedures, instead they offer an alternative type of route onto final approach for aircraft operating into LSA. The final approaches themselves would not change – this consultation is about a new way for aircraft to join the final approaches.'

3.3 The final approaches relate to the approach line into Runway 05 (i.e. land in a north easterly direction) and Runway 23 (i.e. landing in a south westerly direction). The approach to the final approaches will be affected and any impact on the missed approach procedures.

3.4 The airport is seeking to introduce Performance Based Navigation and rely on new technology which allows aircraft to follow air routes more reliably and with a greater level of accuracy. This improved efficiency and mitigate against environmental impacts due to improved efficiency.

3.5 In section 2 of the Consultation document, LSA make it clear that this consultation is not related to air traffic growth. The consultation is only about arriving aircraft. The proposed procedures do not apply to departing aircraft. A report was made to this Committee in 21 June 2016 on changes to the departures procedures (Minute No. 143 refers).

3.6 The consultation report is complex, so this report provides a summary of the key changes and how they affect Maldon District. Maps extracted from the consultation document, have been used within the report to illustrate main points.

3.7 The consultation closes on 13 September 2017, and this report will be submitted to London Southend Airport upon publication as a holding response pending a further response setting out Member's comments.

4. LONDON SOUTHEND AIRPORT – CURRENT OPERATIONS

4.1 LSA is located within the London Terminal Manoeuvring Area (LTMA) a multi-layer of controlled airspace which takes in London and the wider south east and controls aircraft landing and taking off from the London airports and overflights.

4.2 LSA has a single operational runway, which runs in a south west to south east direction. The approaches to the runway are known as Runway 05, from the south west; and, Runway 23 from the north east. Due to the prevailing wind direction, 70% or aircraft use Runway 23. This means that 70% of flights on final approach overfly Maldon District at some stage.

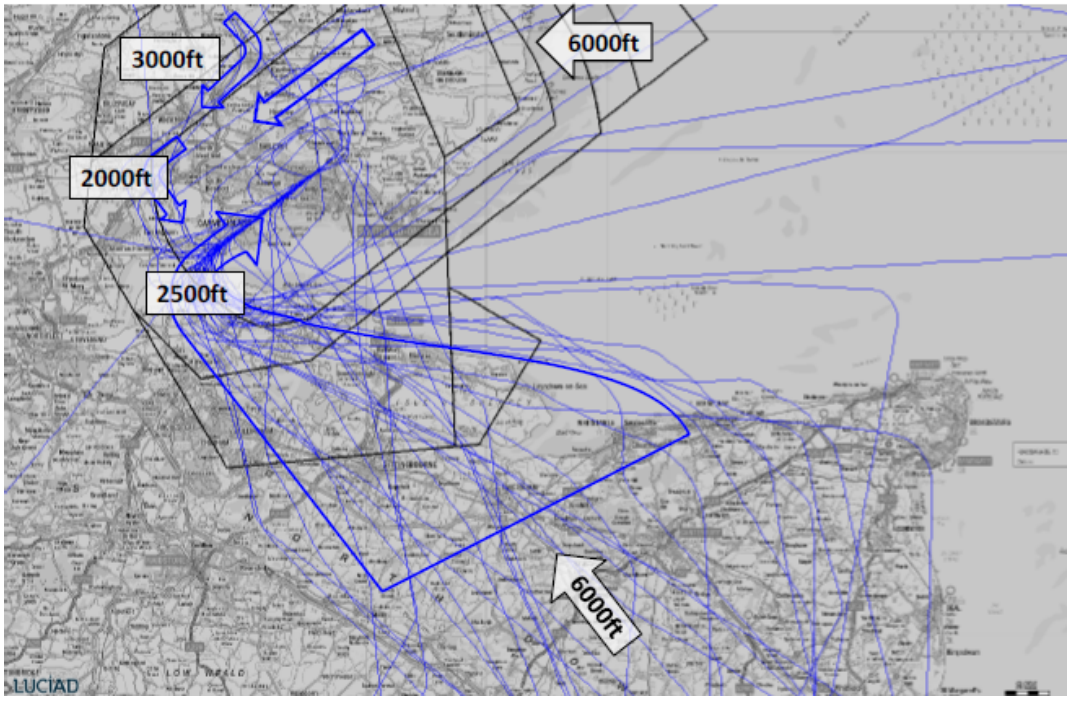
4.3 In 2016, LSA handled 23,449 departing or arriving flights. Of these 9,201 were air transport flights (of the Airbus A319 or 320 and Embraer 195 type, or Bae 146 or twin propeller ATR72 type). There were also nearly 950 positioning flights (in large relating to the aircraft engineering operations at the airport). Of the remaining c13,300 movements the vast majority (12,119) are general aviation.

4.4 With the ongoing growth in commercial flights from LSA, the number of air transport destinations will increase.

4.5 If 70% of flights arrive on Runway 23 the total movements for 2016 equates to 16,414 arrivals that overfly Maldon district on final approach or the approach to final approach. Of these, some 6,440 relate to air transport movements. See table below:

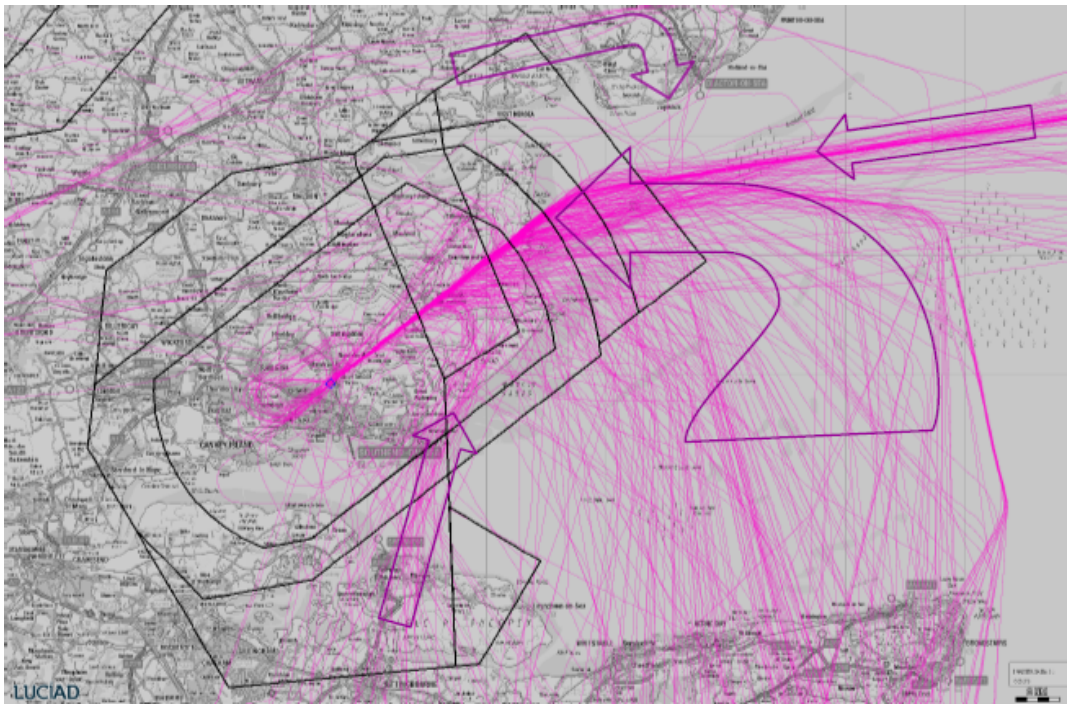
Type of Movement	No. of movements in 2016	70% of movements
Air Transport (excluding Air Taxi)	9,201	6,440
Positioning	949	664
General Aviation	12,119	8,483
Official	10	7
Military	106	74
Business Aviation	993	696
Other	71	50

4.6 Map 1 shows the arrivals tracks for aircraft landing on Runways 05 in August 2016 with the aircraft heights. The general direction of the 'predominantly' commercial traffic movements is indicated by the arrows, the widths of which are based on the number of movements.

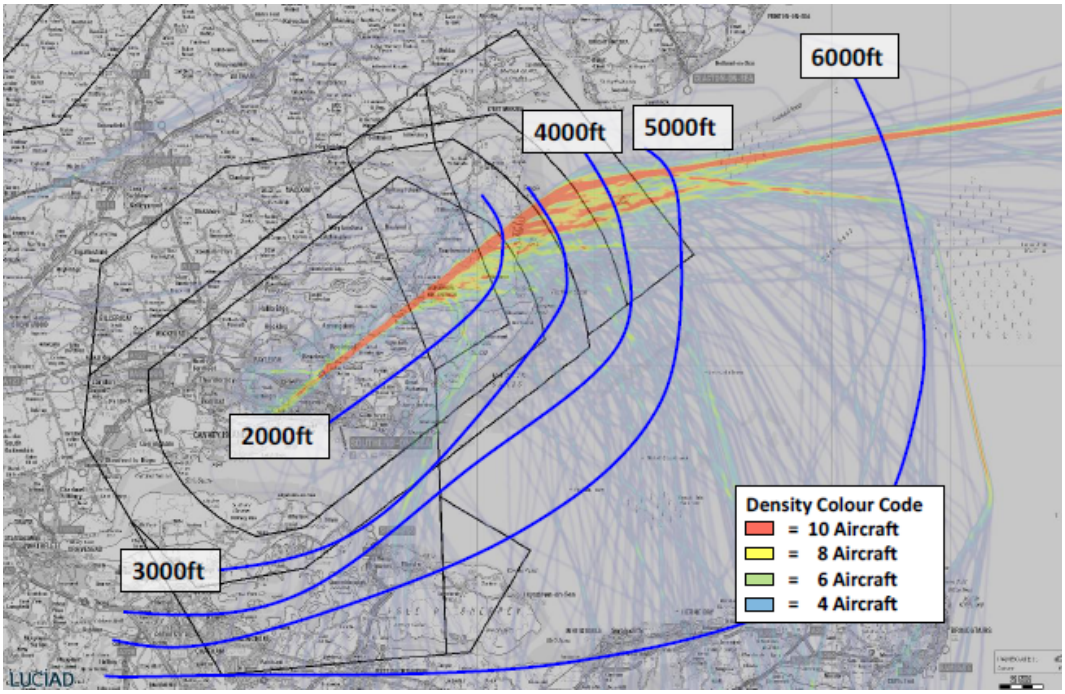


Map 1 Arriving flight tracks onto Runway 05
Source: LSA, Figure 12 on Page 26 of the Consultation Document

4.7 Map 2 shows the tracks for arrivals onto Runway 23 also in August 2016. This map does not include heights, but heights of aircraft are shown on the density map, Map 3.



Map 2 Arriving flight tracks onto Runway 23
Source: LSA, Figure 11 on Page 22 of the Consultation Document



Map 3 Runway 23 aircraft density, including heights
Source: LSA, Figure 15 on Page 31 of the Consultation Document

4.8 As can be seen from the maps above the prevailing tracks are, using Runway 05, over Kent, and, using Runway 23, over the North Sea. Neither of these prevailing tracks affects Maldon District other than the final approach line to Runway 23, and some commercial traffic overflying the District at between 6,000 and 3,000 feet before the turn over Thurrock and the Tames onto Runway 05.

4.9 As the maps above show, at present, relatively few commercial aircraft approach the final approaches over Maldon District. Arrival paths onto the runway 23 Final Approach tend to turn at a point known as Ray Sand to the east of the Dengie.

4.10 The airport company emphasises that the final approach procedure does not change, and that proposal introduces alternative approaches to the final approaches which *'are designed to replicate where possible the flight paths already flown today.'* (paragraph 2.1, page 8). Therefore, the final approach over the Dengie does not change.

5. PROPOSED PROCEDURES

5.1 The proposal from LSA is to introduce Performance Based Navigation (PBN) to the final approach points for both runways. This is part of a phased implementation of PBN across the UK and Europe, and is funded by the European Union (EU). PBN allows aircraft, which need to be equipped to use PBN, to better plan their descent, optimise fuel, and maximise the benefits gained by flying a pre-determined path.

5.2 Currently aircraft approaching the final approach rely on air traffic control to guide them. PBN *'gives aircraft the ability to follow a route with an even greater level of accuracy than they do today.'* (Para 1 on page 5 of the Consultation document). The proposals introduces PBN to complement existing arrival paths, so where possible, LSA aimed to follow existing paths to the final approach point. By following pre-

determined routes and with technology which allows air traffic control to better space aircraft, greater efficiencies and increased safety, together with less fuel burn and a lower impact on the environment are envisaged. PBN is being rolled out worldwide with a particular push within Europe, with some EU funding.

5.3 Whilst the use PBN is not compulsory, if all aircraft use PBN, rather than individual arrival paths determined by air traffic control, then there could be a greater concentration of aircraft on fixed routes and therefore, overflying Maldon District along the path of the Blackwater. It would be reasonable to also assume that air traffic control would vector aircraft along these routes irrespective of whether they have PBN or not

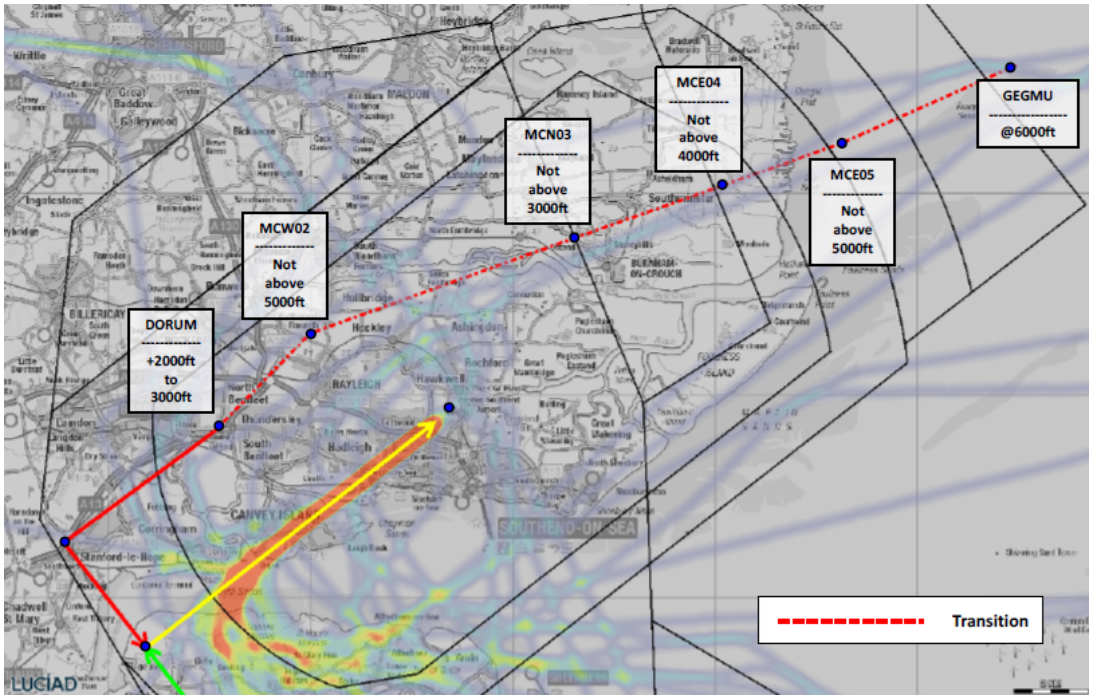
5.4 Map 4 below sets out the proposed BPN route into Runway 23. The route for aircraft approaching from the north/south west (from TOLNO along the red line) will follow the Blackwater before turning to join final approach to the east of Southminster. The proposal also includes a route (UPUDU) which turns aircraft approaching from the east. This does not mean that the approach from GEGMU (or Ray Sands) is abandoned, but LSA say that these arrival paths deliver greater accuracy for aircraft. The heights are the same as currently operated within the various zones around the airport.

Map 4 Proposed PBN routes to joining final approach runway 23 with heights.
Source: LSA, Figure 28 on Page 56 of the Consultation Document

5.5 In paragraph 4.2.1 (Page 45) of the consultation document, LSA state that *'whether aircraft remain on the proposed new routes or are turning early for the runway their tracks would remain within today's swathes. There should, therefore, be no noticeable change to residents in the vicinity of the current tracks and the proposed routes.'*

5.6 As Map 3 shows, the majority of aircraft currently using Runway 23 tend to approach from GEGMU joining the final approach at Ray Sand. LSA except this to remain the case.

5.7 With regards to Runway 05, Map 1 shows that the majority of aircraft approach from the south. However, those approaching from the north east to land on Runway 05 would follow a path across the District before joining PBN over Bowers Gifford (DORUM) ahead of turning over Stanford Le-Hope and near Cliffe in Kent onto the final approach. Map 5 below details the transition from GEGMU (Ray Sand) to the PBN. The heights are similar to those currently operated.



Map 5 Transition from GEGMU to the PBN with heights
Source: LSA, Figure 27 on Page 55 of the Consultation Document

5.8 The report also highlights any changes to the missed approach procedures which where possible will follow the same approach lines.

5.9 Section 5.1.3 of the report focusses on noise. LSA have used to illustrate noise levels a ATR-52 turbopropo, or similar aircraft) and a Airbus/Boeing 125 to 180 seat 2-engine jet or similar. The predicted noise levels produced by the aircraft in a direct overflight at certain heights are:

Height (ft)	Turbo-prop (Lmax dBA)	50 seat regional jet (Lmax dBA)	70-90 seat regional jet (Lmax dBA)	125-180 seat single-aisle 2-eng jet (Lmax dBA)
1,000 - 2,000	79 - 70	73 - 63	77 - 67	77 - 69
2,000 - 3,000	70 - 66	63 - 56	67 - 61	69 - 64
3,000 - 4,000	66 - 64	56 - 55	61 - 57	64 - 61
4,000 - 5,000	64 - 62	57 - 56	61 - 59	
5,000 - 6,000	62 - 61	56 - 55	59 - 57	
6,000 - 7,000	61 - 59	57 - 56		

5.10 These aircraft currently use the airport and therefore the noise levels are currently experienced.

5.11 Section 5.2 of the LSA report focusses on the Uptake of Performance Based Navigation (PBN) and Consequent Track Concentration. LSA envisage that the uptake of PBN will be gradual and even with PBN in place aircraft and air traffic control may not wish to use the routes. They state in the second para to 5.2 that *'in the short to medium term we expect that there will be little discernible difference to the tracks over the ground, Those aircraft that use the new procedures will be tactically directed by air traffic control to take tactical shortcuts top the runway as they do today, to minimise track mileage where possible and to de-conflict from one another.'*

5.12 In the next paragraph in 5.2 the airport concludes that '*over time it is expected that an increased number of aircraft will use the PBN routes without ATC [Air Traffic Control] intervention, resulting in increased traffic concentration along the new designed routes. However the rate at which this may occur is not something that LSA can quantify.*'

5.13 In para 5.3 of the consultation document, LSA state that the 'proposed PBN routes have been designed to follow current aircraft track concentrations as closely as possible. This should reduce additional noise for people not already subject to it. However, in some instances the route has been repositioned in order to avoid over-flight of populated areas.'

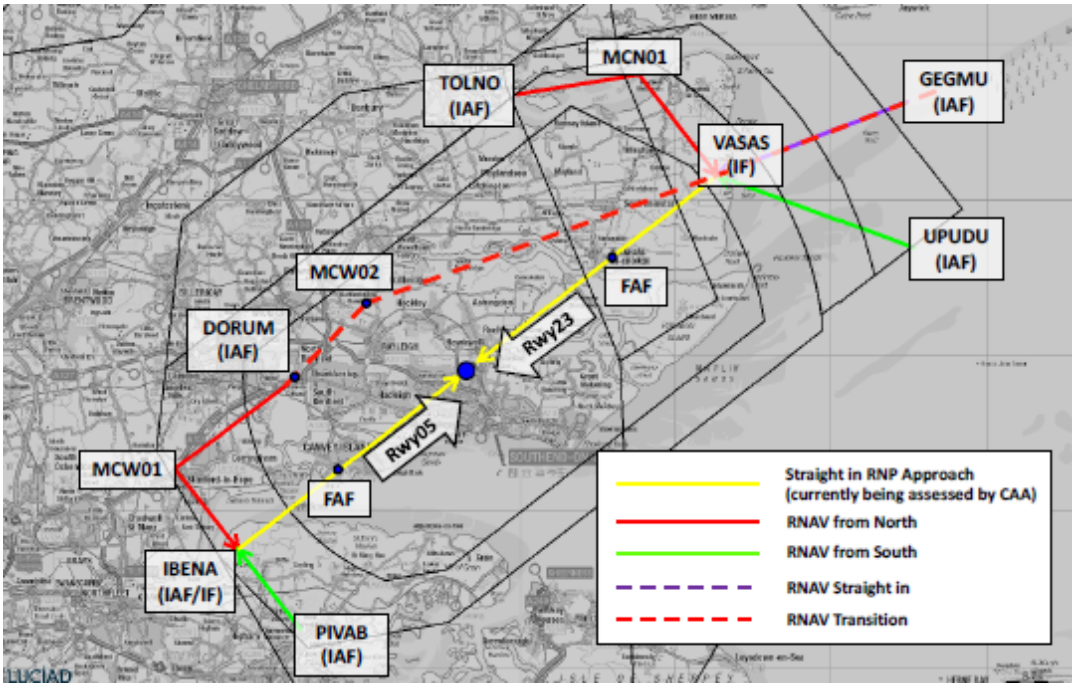
5.14 With regards specifically to the arrival transition route onto Runway 23 from the west, LSA state in 5.3.1 that the route was carefully designed to track along the Blackwater estuary and makes at right turn at the point which *'threads through the villages in the area, to the southwest of Bradwell on Sea and to the northeast of Tillingham'* after which it joins the final approach path. Furthermore, LSA make it clear that the final approach path replicates almost exactly the path flown by aircraft today both vertically and horizontally.

5.15 Therefore, it can be concluded that those living under the final approach will notice no difference, other than any future increase in traffic. However, as the VBN route formalises the transition phase onto the final approach path, there may be some change over time that will affect residents.

5.16 Similarly in paragraph 5.3.2 with regards to the approaches to runway 05, the transition route form the east and north east of the Dengie has also been designed to follow existing paths and to avoid populated areas where possible.

5.17 With regards to missed approach, the report does consider this and it is the intention to settle aircraft onto the standard approaches as soon as possible, so a conventional approach can be achieved, but also keep the aircraft as close as possible to the airport and avoid urban areas.

5.18 The two PBN routes are illustrated together on Map 6 below:



Map 6 New VBN routes (used for aRea NAVigation and Required Navigation Performance) for runways 23 and 05
Source: LSA, Figure 41 on Page 84 of the Consultation Document

6. CONCLUSIONS

6.1 The proposals of these new transition path to final approaches at LSA are part of a worldwide, European and UK roll out of performance based navigation designed to make the control of airspace around airports more efficient and safe. LSA have opted for routes which where possible mirror those currently used, and that at minimise urban area over flight.

6.2 The consultation does not consider future growth at the airport and the increase in commercial traffic as the airport growth towards its 2 million passengers per annum capacity will impact on those living under flight paths.

7. IMPACT ON CORPORATE GOALS

7.1 Changes in landing procedures into LSA will have an impact on the corporate goal of Protecting and shaping the District and in particular the impact the aircraft and any concentration of aircraft along prescribed routes will have on the quiet enjoyment of the District.

8. IMPLICATIONS

(i) **Impact on Customers** – Any concentration of aircraft movements along prescribed corridors will have an noise impact on residents along those routes, although the routes have been designed to minimise urban area overflight.

(ii) **Impact on Equalities** – None.

(iii) **Impact on Risk** – The new procedures are designed to improve air safety.

(iv) **Impact on Resources (financial)** – None.

(v) **Impact on Resources (human)** – None.

(vi) **Impact on the Environment** – The new procedures are designed to improve flight efficiency and reduce fuel consultation, which would have a positive impact on the environment. However, any concentration of aircraft along particular approaches onto final approach would have a negative impact in terms of noise.

Background Papers:
London Southend Airport – Consultation Concerning the Introduction of New Approach Procedures (http://southendairport.com/corporate-and-community/proposed-arrival-routes)

Enquiries to: Ian Butt, Planning Policy Manager (Tel: 01621 876203).