Annual Monitoring Report
2015

Employment and the Surface Access sections will be provided as an addendum to the main document.

London
Luton
Airport

Contents

Foreword

2015 was an exciting year for London Luton Airport (LLA). Not only did we see rapid growth in passenger numbers – an increase of 16.9% over the year – but we also broke ground on a £110million project to transform the airport.

While many residents are excited by the jobs and opportunities that the airport's growth will bring, we understand that others will also have had concerns over whether there will be an increase in aircraft noise.

Reducing the impact of aircraft noise as the airport expands is a major undertaking. What's more, unlike most airports around the UK, the majority of LLA's noise policies and interventions have been developed voluntarily rather than through regulation.

The progress made has been the result of extensive collaboration and cooperation between the local community, our commercial partners and the staff at LLA. As a result of this constructive approach, and following extensive planning, 2015 saw the introduction of a range of major new initiatives to tackle the impact of airport operations..

We have not only reduced noise violation limits, but we have also made sure these limits have a real impact by introducing financial penalties for operators who exceed them. Those fines are paid into LLA's Community Trust Fund, meaning that the money raised directly benefits the local community.

In August 2015 we also introduced new Area Navigation (RNAV) technology to enable aircraft to follow tighter flight paths. This change, which was introduced with the support of over 90% of residents in consultation, has reduced the number of people directly overflown on one of our main departure routes from approximately 13,000 people to 3,000.

Finally, following extensive engagement wwith our airline partners, we now have 87% of operators employing 'Continuous Descent Approach' (CDA) procedures. This keeps arriving aircraft at higher altitudes for longer, which both reduces noise and cuts carbon emissions.

We've made great strides in 2015. However, we also recognise that there is still much more we can do, particularly as we continue to grow.

We are working with the Civil Aviation Authority (CAA) and National Air Traffic Services (NATS) to further increase the proportion of flights using CDA procedures. We hope to introduce RNAV technology on all our flight paths over the next few years. We are working with airlines to further encourage the use of quieter aircraft.

By continuing to work closely with the CAA, NATS and local residents we are confident that we can continue our steady progress in reducing the impact of noise through this year and in the future. We will continue to report on our performance on noise management for local residents and welcome feedback.

Our aim is to ensure not only that local residents enjoy the economic benefits of the airport's success, but also that we continue to engage with local residents to mitigate and as far as possible reduce our environmental impact.

Neil Thompson
Operations Director
London Luton airport

Key Monitoring Indicators

Parameter		2015	2014
Total Aircraft Movements	↑	116,412	103,939
Day Movements (07:00 - 23:00)	↑	103,220	91,331
Night Movements (23.00 – 07.00)	↑	13,192	12,597
Early Morning Movements (06.00 – 07.00)	↑	4,778	4,617
Total Scheduled Passengers	↑	11,807,292	10,041,214
Total Charter Passengers	↑	471,893	458,925
Total Passengers	↑	12,279,185	10,500,139
Number of Destinations	↑	118	105
Number of New Airlines	↑	4	1
Number of New Routes	↑	20	15
Westerly/Easterly Runway Split (%)	-	72/28	68/32
Night Quota Used (3,500 Limit)	-	2,480	-
Average Ratio of Aircraft movements % (day/night)	-	89/11	88/12
Track Violations	-	62	-
Departure Noise Infringements (Day)	↑	15	1
Departure Noise Infringements (Night)	↑	9	3
Fines transferred into Community Trust Fund	-	£52,000	-
24hr CDA (% achievement)	↓	87%	88%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	-	13 (0)	22 (0)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	-	7,871 (1,209)	8,240 (1,046)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	-	36,879 (4,266)	34,680 (3,919)
Night Noise Contour Area (48 dB $L_{Aeq, 8h}$)	↑	35.3km²	35.2km²
Population within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↓	14,681	16,040
Dwellings within Night Noise Contour (48 dB $L_{Aeq, 8h}$)	↓	5,539	6,583
Noise Complaints	↓	960	1,146
Complainants	↓	355	457
Number of New Complainants	↓	158	173
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM_{10} exceedances	↓	0	6

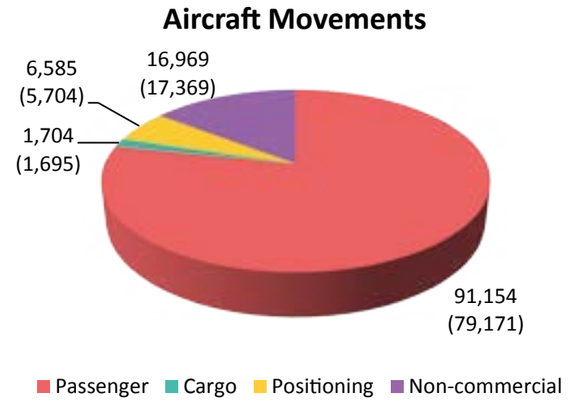
Air Traffic Data

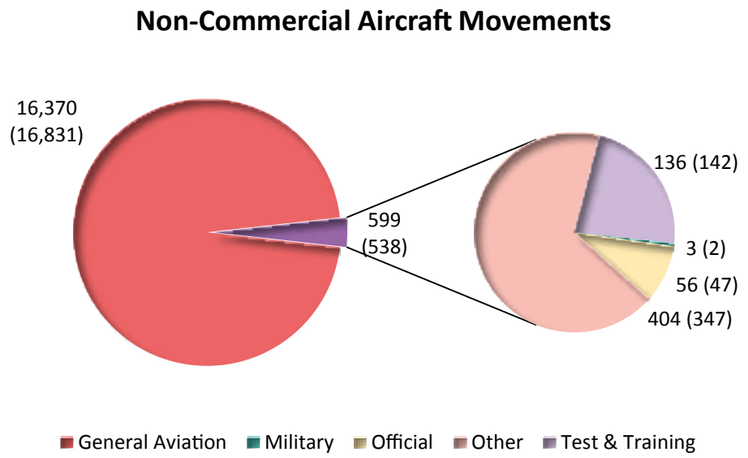
Aircraft movements

LLA handled a total of 116,412 aircraft movements during 2015, an increase of 12% compared to 2014. An aircraft movement is the take-off or landing of any aircraft from the airport.

The majority of aircraft movements were passenger flights at 91,154 movements this includes commercial flights by executive aircraft (compared with 79,171 in 2014). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2014 data is shown in brackets.

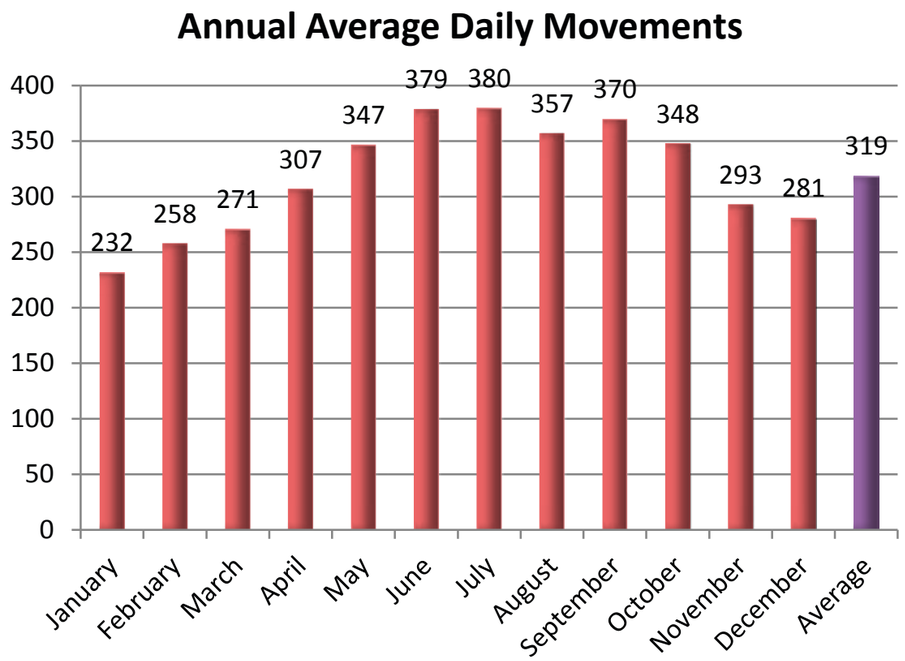




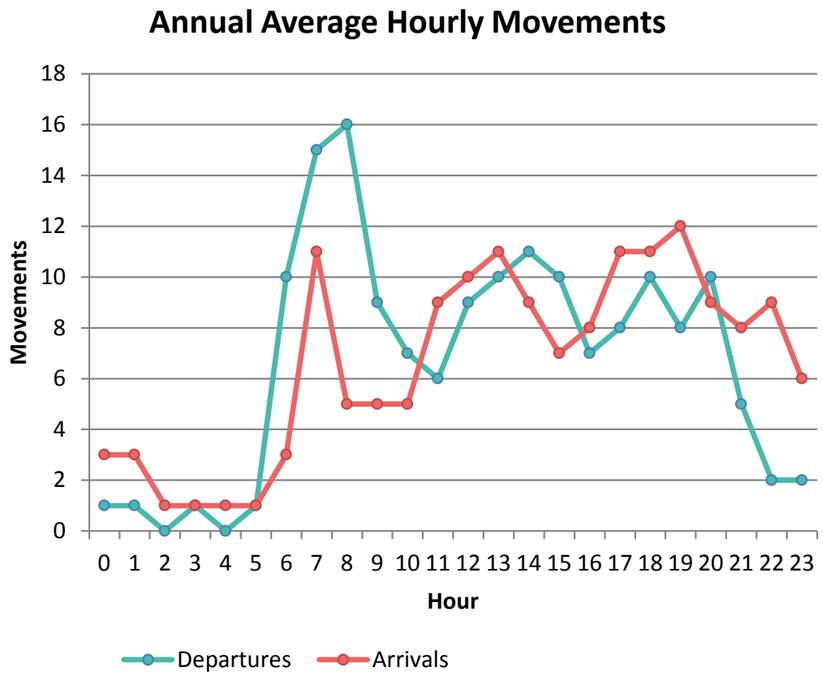
Movement Classification

Commercial – operating for hire or reward and includes cargo, passenger and positioning flights
Non-Commercial – not operating for hire and reward
Cargo – aircraft movements which are solely for freight. It should be noted that freight can also be carried on aircraft in other categories
General Aviation – private aircraft, helicopters and business jets not operating for hire or reward
Passenger – commercial passenger flights, including executive aircraft
Positioning – typically empty flights to/from other airports
Military – flights on military business
Official – flights solely for official purposes by British or foreign civil government departments
Other – flights coming for maintenance and or departing aircraft that have made an unscheduled return to base
Test & Training – training flights involving aircraft and also flights following or during aircraft maintenance

The graph below illustrates that the busiest time of year is May - October, with over 340 flights per day. **Our busiest day of the year was on May 22nd with 425 aircraft movements.** In comparison, winter months are the quietest, with less than 300 flights per day. On average there were 319 movements per 24 hours (in comparison with 285 in 2014).



The busiest time on average during 2015 for departing aircraft was 06:00-08:00 hrs, with another peak between 13:00-15:00. The average busiest time for arrivals was 07:00-08:00 and 12.00-13.00 hrs. The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.



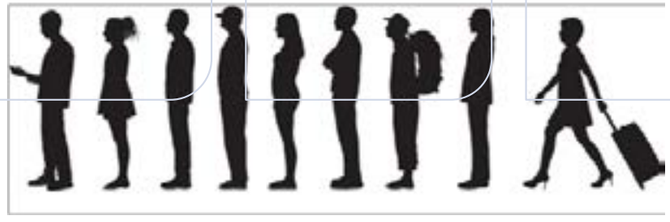
Passenger data

Scheduled	Charter	Totals
• **11,807,292** passengers • just under 18% increase compared with 2014 • **147** average passengers per flight	• **471,893** passengers • just under 3% increase compared with 2014 • **178** average passengers per flight	• **12,279,185** passengers • 17% increase compared with 2014 • Total **147** average passengers per flights

Charter flights are flights in which the aircraft has been chartered (or leased) by a company, typically a tour operator or an executive customer. Charter seats are typically not sold directly by the airline. Scheduled flights are regular flights organised by the company which owns the aircraft.

A total of 12,279,185 passengers were handled at LLA during 2015; 11,807,292 on scheduled flights (96%) and 471,893 on charter flights (4%). This represents an increase in passengers of 17% compared with 2014.

Domestic	EU	Non-EU	Totals
• **949,336** passengers • just under 1% increase compared with 2014	• **8,148,633** passengers • just under 20% increase compared with 2014	• **3,181,216** passengers • just under 16% increase compared with 2014	• **12,279,185** passengers • 17% increase compared with 2014



Cargo

Cargo operations represent just under 2% of all air transport movements at London Luton airport. Night movements accounted for 63% of total cargo movements, relating primarily to postal flights or intra-European express delivery services moving time sensitive and perishable freight such as fresh food, medication and urgently needed technical equipment vital to supporting and sustaining economic growth. The flights carrying more general, less time-sensitive cargo already operate outside of the night-time period. This would include Formula 1 cars, live animals, clothing, machine parts and more.

Operator	Movements			Tonnes
	Day Movements	Night Movements	Total	Total
2015	739	1,279	2,018	28,041
2014	709	1,167	1,876	27,500
2014-2015 difference	+4%	+10%	+8%	+2%

N.B. The cargo movement count is the total number of movements that carried cargo as opposed to flights that are primarily operated for the carriage of cargo. This is because 4% of a total cargo tonnage was carried on passenger aircraft. Consequently the movement figures in this section will differ from figures in the Aircraft Movements piechart which shows dedicated cargo movements.

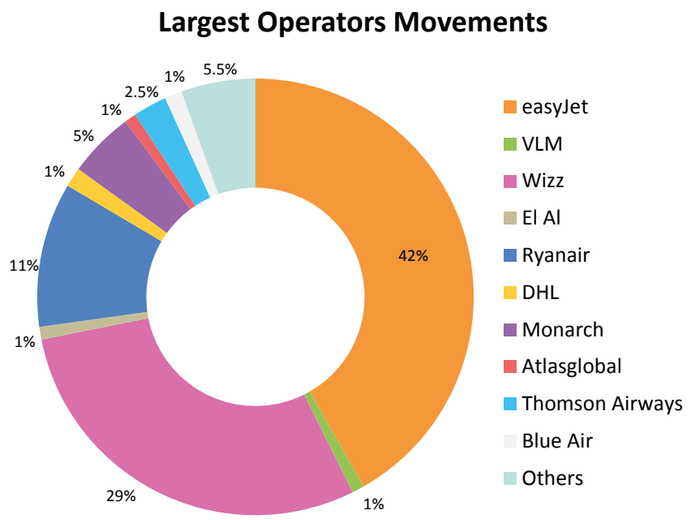
28,041

28,041 tonnes was carried on 2,018 passenger and cargo aircraft.

Airlines

London Luton airport works very closely with its airline partners. The table below provides the movement statistics by the 10 largest operators.

Operator	Movements
easyJet	36,858
Wizz	25,790
Ryanair	9,454
Monarch	4,322
Thomson Airways	2,226
DHL	1,273
Blue Air	1,136
El Al	830
VLM	806
Atlasglobal	764
Others	4,892
TOTAL	**88,351**



N.B This table includes movements for both passenger & cargo aircraft but excludes positioning flights and air-taxis.

Movements by aircraft type

	Aircraft Type	Movements	% of Total movements
Passenger Aircraft (84,421 movements)	Airbus A320 & A320 sharklets[1] (easyJet, Wizz Air, Monarch)	39,393	33.8%
	Airbus A319 (easyJet)	26,420	22.7%
	Boeing B737-800 winglets[1] (Ryanair, Monarch, Thomson, El Al)	12,046	10.3%
	Airbus A321 & A321 sharklets[1] (Monarch)	2,667	2.3%
	Boeing B737-400 (Blue Air)	924	0.8%
	Boeing B757 & B767 family (Monarch, Thomson, El Al)	1,325	1.1%
	MCD Douglas MD-82/83/87 (Blue Air)	20	0%
	Other Passenger Aircraft	**1,626**	1.4%
Cargo (2,112 movements)	Airbus A300-600 (A306) (DHL, MNG Cargo)	1,276	1.1%
	BAe ATP (DHL, Atlantic Airlines)	403	0.3%
	Boeing B737-300 & B737-400 (DHL)	190	0.2%
	Boeing B757-200 (DHL)	225	0.2%
	Other Cargo Aircraft	**18**	0%
General Aviation (29,420 movements)	Gulfstream 5 and 500 series GLF5	2,592	2.2%
	Canadair Global Express GLEX	3,096	2.7%
	Cessna Citation Excel C56X	2,522	2.2%
	Canadair Challenger CL60	1,851	1.6%
	Gulfstream 4, 300 & 400 series GLF4	2,043	1.8%
	Embraer Legacy 600 E135	1,360	1.2%
	Canadair Challenger CL30	1,409	1.2%
	Cessna Citation Jet C525	1,233	1.1%
	Dassault Falcon FA7X	931	0.8%
	Other Private Aircraft	**12,383**	10.6%
	Helicopter	468	0.4%
	TOTAL	**116,421**	100%

The aim of this section is to provide the number of movements for a specific aircraft type. The groups are conditional, assuming that these are the typical aircraft types used for passengers, cargo and general aviation movements. As a result the number quoted here within this section will differ from those within the Aircraft Movements Section.

[1] - Winglets and sharklets are small aerodynamic surfaces mounted almost vertically at the wingtips. There is no difference between winglets and sharklets; the term sharklet is just the name used by Airbus for the winglets fitted to their aircraft.

Destinations

London Luton had the busiest year in the airport's 77 year history, making it the fastest growing major London airport in percentage terms in 2015. This significant growth comprised of increased capacity and new routes with established airlines and the arrival of four new airlines SunExpress, Iberia (Air Nostrum), La Compagnie and VLM.
The following diagram shows the destinations flown/on sale to and from London Luton in 2015. Our airlines fly to 118 destinations across 36 different countries. In total 20 new routes were launched from LLA in 2015.

Top 5 destinations by aircraft movements were:

1. Amsterdam
2. Budapest
3. Copenhagen
4. Geneva
5. Bucharest-Otopeni

New Routes 2015

Destination	Launch	Airline
Innsbruck, Austria	20-Dec-15	easyJet
Tel Aviv, Israel	3-Dec-15	Monarch
Ovda, Israel	3-Dec-15	Monarch
Chisinau, Moldova	27-Oct-15	Wizz Air
Iasi, Romania	25-Oct-15	Blue Air
Vienna, Austria	23-Oct-15	easyJet
Iasi, Romania	16-Sep-15	Wizz Air
Izmir, Turkey	11-Jul-15	SunExpress
Constanta, Romania	16-Jun-15	Wizz Air
Ohrid, Macedonia	15-Jun-15	Wizz Air

Destination	Launch	Airline
Bodrum, Turkey	17-May-15	easyJet
Split, Croatia	16-May-15	easyJet
Naples, Italy	1-May-15	Thomson
Essasouira, Morocco	1-May-15	easyJet
Waterford, Ireland	27-Apr-15	VLM Airlines
Porto, Portugal	26-Apr-15	easyJet
Antalya, Turkey	25-Apr-15	easyJet
Vigo, Spain	30-Mar-15	Air Nostrum
New York, USA	29-Mar-15	La Compagnie
Copenhagen, Denmark	26-Mar-15	Ryanair

Routes Ending 2015

Destination	Launch	Airline
Munich, Germany	1-Nov-15	Monarch

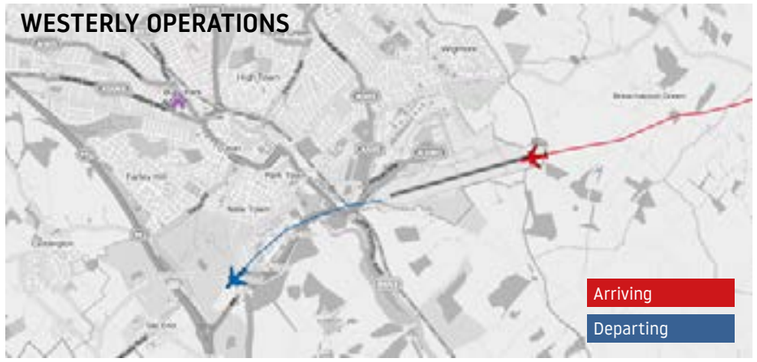
More information about our destinations can be found on the airport's website:
http://www.london-luton.co.uk/inside-lla/destination-map

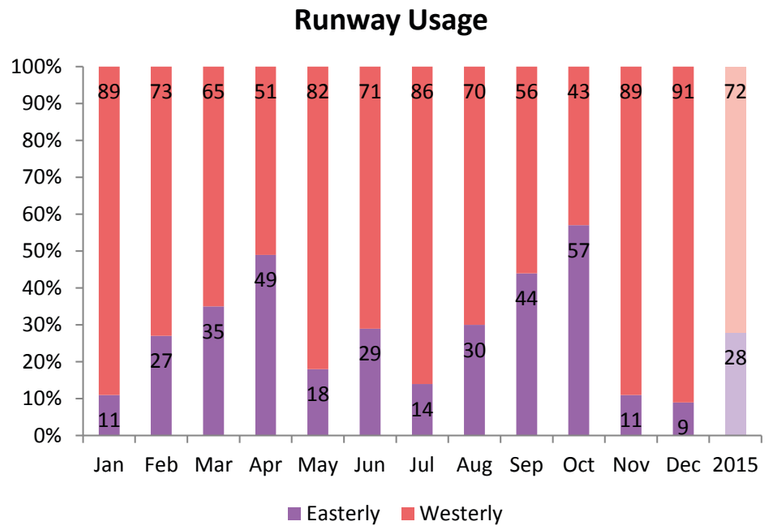
Runway usage

Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

Wind speeds and directions recorded at higher altitudes can vary considerably from those recorded at ground level. The position of the wind is under constant review by NATS which is why the operation can change direction more than once in a day. However it is also not unusual for the runway to operate in the same direction for several weeks.

A monthly breakdown is shown, highlighting higher than average levels of easterly operations over the spring and autumn periods 2015, in contrast to prolonged and sustained spells of westerly operations over the winter and summer months of 2015.





Year	Easterly	Westerly
2015	**28%**	**72%**
2014	32%	68%
2013	36%	64%
2012	27%	73%
2011	28%	72%
Average	**30%**	**70%**

The runway split during 2015 was 28% easterly and 72% westerly (compared to 32% / 68% in 2014). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 30% easterly and 70% westerly.

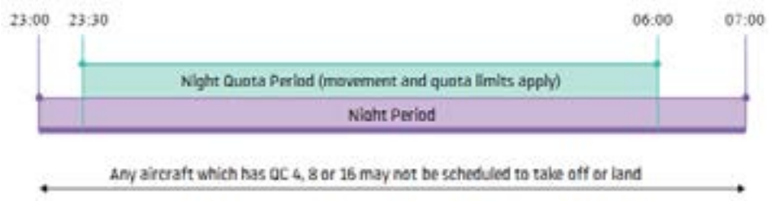
Night Flights

Night Flying Restrictions

As from 1st April 2015 London Luton airport introduced new night restrictions as part of the planning conditions.

These restrictions have been put in place to limit and mitigate noise disturbance from aircraft operating at night, to prohibit aircraft of certain types from operating, as well as limiting the number of occasions on which aircraft may take off or land.

The night flying restrictions contain a 12 month period aircraft movement limit and a 12 month period quota count limit. The quota count (QC) means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types.



The table overleaf records the QC bands identified by the certified noise levels, and gives some typical example aircraft, some of which operate from LLA.

The 'Night Quota Period'
The 'Night Quota Period' is from 23:30 to 06:00 hours local, during which period aircraft movements (take-off or landing) are restricted by a limit on the number of movements with noise quotas as an additional measure.

Aircraft are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce during specific certification tests conducted by the manufacturer. They are classified separately for both take off and landing. The points are then allocated to different aircraft types according to how noisy they are.

The 'Early Morning Shoulder Period'
The 'Early Morning Shoulder Period' is 06:00 to 07:00 hours local. During this period aircraft movements (take-off or landing) are restricted by a limit on the number of movements (the same as the Night Quota Period).

Aircraft movement and quota count limits (per 12 month period)

Condition 11(f) requires that for the Night Quota Period (2330 - 0600) the following limits shall not be exceeded:

- Total annual movements by aircraft per 12 month period shall be limited to 9,650;
- The total annual noise quota in any 12 month period shall be limited to 7,000.

Certificated noise level (EPNdB)	Typical aircraft	Quota Count
Greater than 101.9	Some B741/B742, AN124/AN225	QC 16
99 to 101.9	Some B744, MD8	QC 08
96 to 98.9	B732, MD10	QC 04
93 to 95.9	B772, A306, A333	QC 02
90 to 92.9	A320/A321, some B738, B752, B788	QC 01
87 to 89.9	A319/A320, some B734, B738, B788	QC 0.5
84 to 869.	A319/A320, GLEX, FA7X/F900/F2TH	QC 0.25
Less than 84	Challenger series (eg CL60), ATP, C525/C550	QC 0

Condition 11(h) requires that for the Early Morning Shoulder Period (0600 - 0700) the total annual movements by aircraft in any 12 month period shall be limited to 7,000.

The table below provides total aircraft annual movements and noise quota per 12 month period and compares those against the limits set by planning conditions.

	Night Quota Period (2330 - 0600)		Early Morning Shoulder (0600 - 0700)
	Movements Limited to 9,650	Quota Count Limited to 3,500	Movements Limited to 7,000
Jan 2015	348	128.25	232
Feb 2015	305	109.25	226
Mar 2015	357	128.00	293
Apr 2015	575	204.25	447
May 2015	723	245.00	487
Jun 2015	811	270.25	511
Jul 2015	786	289.25	521
Aug 2015	700	259.00	544
Sep 2015	772	280.50	523
Oct 2015	658	239.00	469
Nov 2015	413	162.75	269
Dec 2015	396	164.50	256
Total for preceding 12 months	**6,844**	**2,480.00**	**4,778**

There were no night time aircraft movements with a QC value of greater than 2 in 2015. Of the 133 QC 2 aircraft movements in 2015, 111 were departures by Airbus A300-600 aircraft.

Marginally Compliant Chapter 3 aircraft

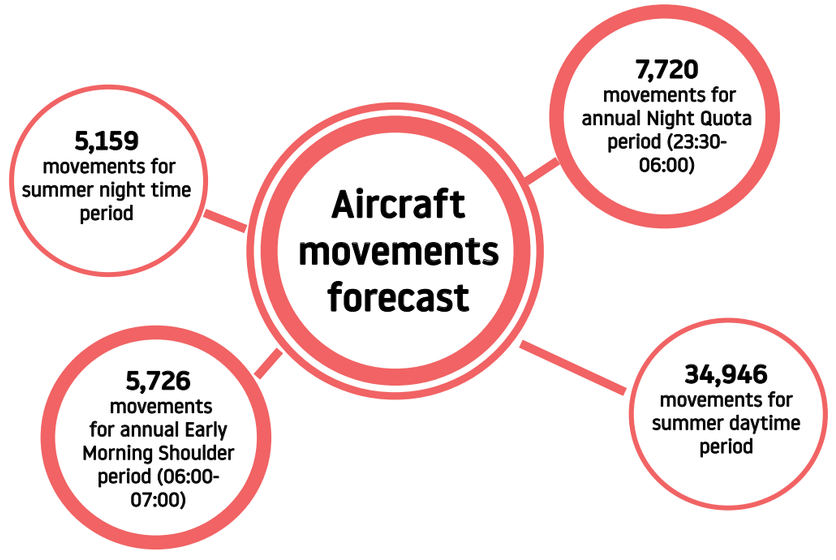
Taking the year as a whole, of the 115,279 movements where Chapter 3 categorisation is applicable, only 42 are known to be marginally compliant. These movements were all by a single aircraft, a Boeing 737-200. A further 40 aircraft movements were by aircraft with unknown classification. These comprised 7 different aircraft; an Antonov 12, an Antonov 72, two Boeing 767-200s, two Boeing 767-300s, and a Dassault Falcon 20.

Day/Night ratio of movements

There were 13,192 night movements during 2015 (compared to 12,598[1] for 2014, an increase of 5%), an average 36 movements per night (compared to 35 last year).
Arriving aircraft accounted for 56% of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 61% of total night departures took off between 0600 - 0700 in the morning.
The average ratio of total aircraft movements during 2015 was 89% day / 11% night (in line with 88% day / 12% night in 2014).

2015	Day Movements (0700 - 2300)	Night Movements (2300 - 0700)		
	Day Movements	Night Quota Period (2330 - 0600)	Early Morning Shoulder (0600 - 0700)	Total Night Movements (2300 - 0700)
Departures	52,455	1,932	3,526	5,751
Arrivals	50,765	4,912	1,252	7,441
TOTAL	**103,220**	**6,844**	**4,778**	**13,192**

The figure below shows forecast aircraft movements for 2016, seperated into the daytime and night time periods.



[1] - The figures quoted for 2014 cover the revised night period that has been extended by one hour, between 2300hrs and 0700hrs, as opposed to a shorter night period that was previously used.

Departing Aircraft

All propeller-driven aircraft with Maximum Take Off Mass (MTOM) over 5,700kg and all jet aircraft leaving London Luton airport are required to follow specific departure routes known as Noise Preferential Routes (NPRs). These are established by consultation with the Safety and Airspace Regulatory Group (SARG) at the CAA and the London Luton airport Consultative Committee; they are designed to avoid flying over built-up areas wherever possible.

There are three Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON and DETLING/ MATCH. On the 20th August 2015 LLA introduced Area Navigation (RNAV1) procedures for aircraft departing the airport along the westerly Match/Detling SIDs.

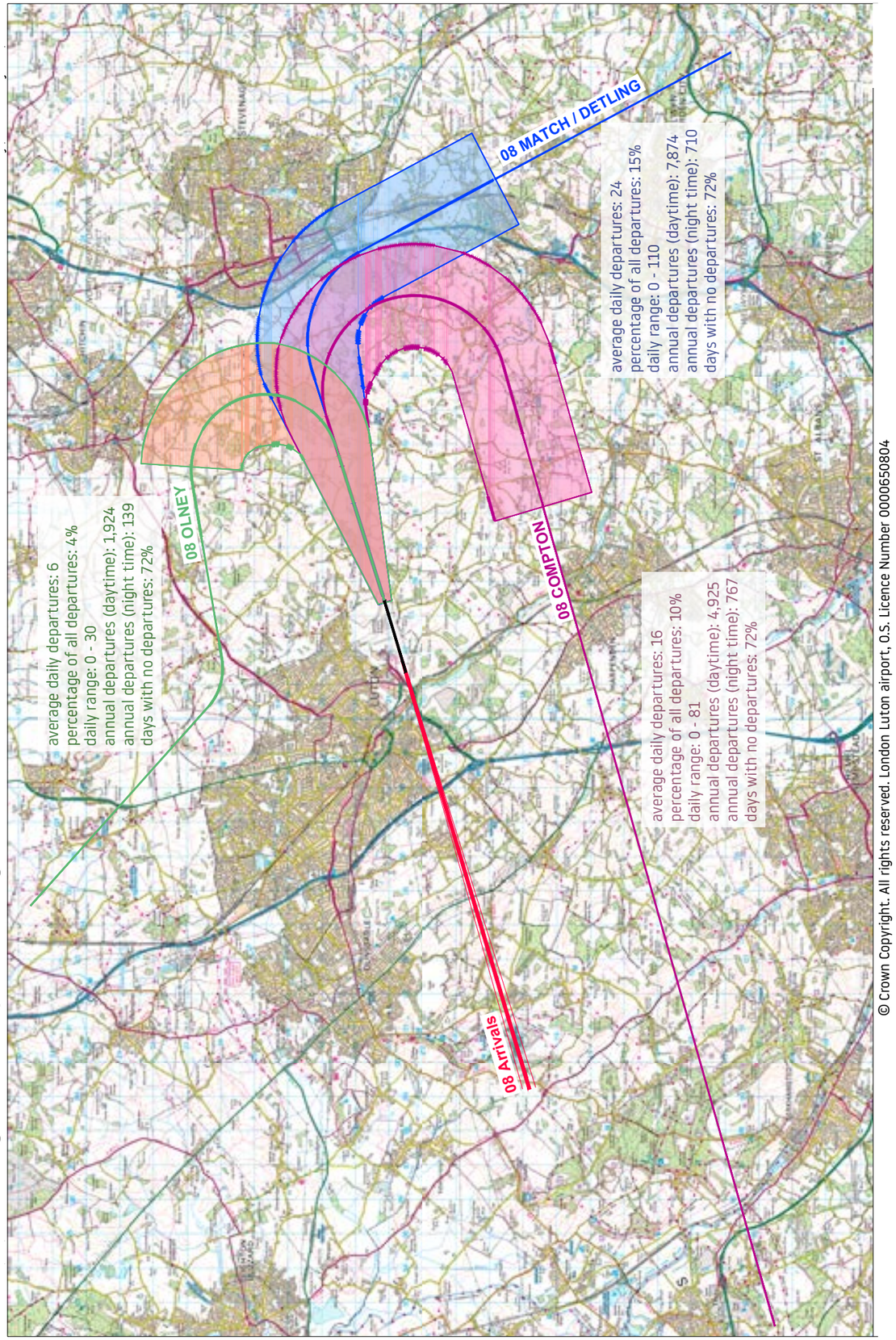
Associated with each NPR is a swathe of airspace extending 1.5km (1km for RNAV) each side of the NPR centre line, within which aircraft concentrate and are considered to be flying on track. Aircraft must follow the NPR controls applicable to the runway in use at that time.

In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 23:00hrs local time) and 4,000ft (during night time, 23:00hrs to 07:00hrs local time) has been reached. The obligations of the RNAV1 NPR ceases when a height of 4,000ft has been reached at all times.

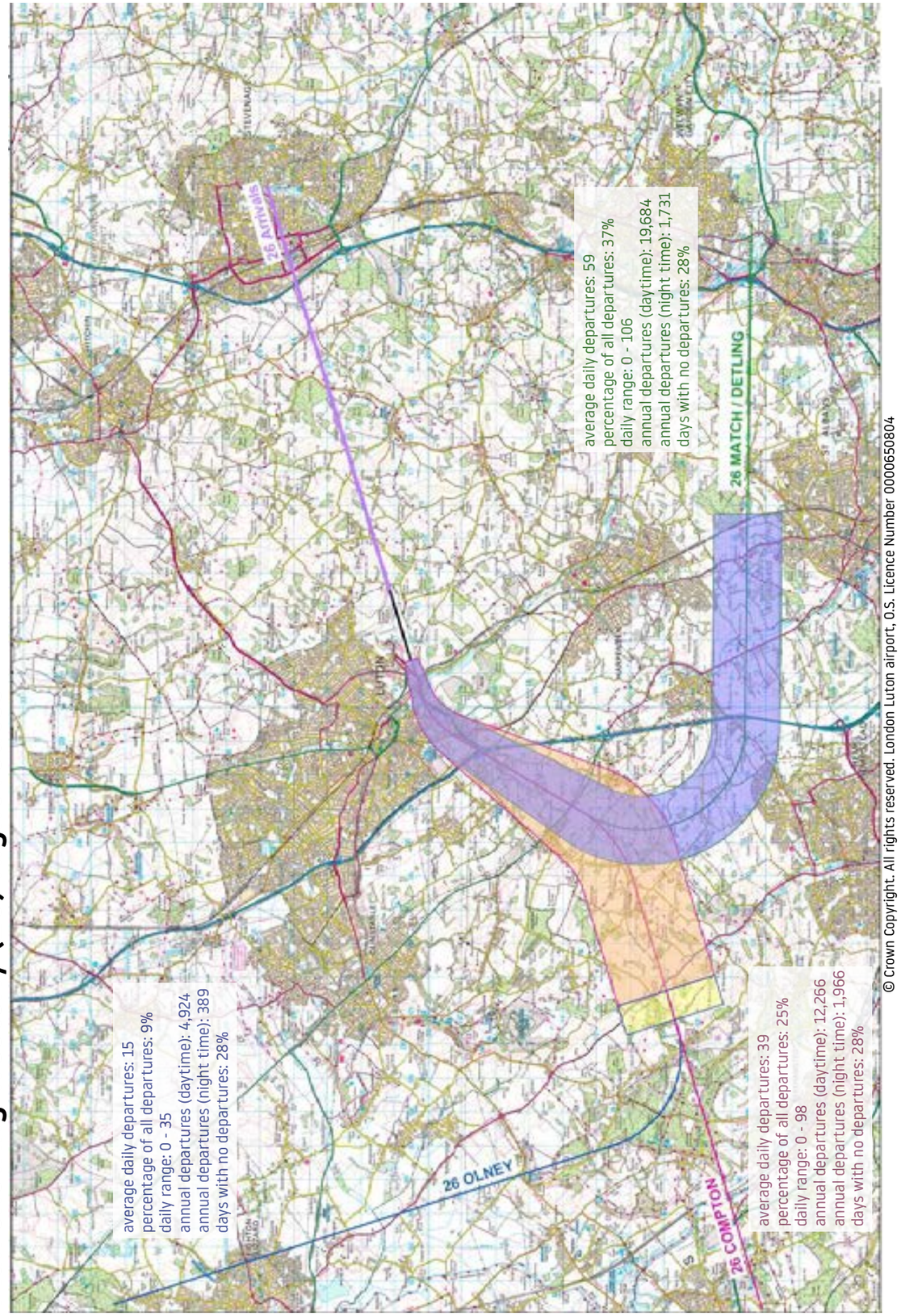
Once aircraft have reached the NPR restricted altitude they will be considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by Air Traffic Controllers onto a different heading in order to integrate with the overall flow of traffic, this is known as vectoring. However on RNAV1 Match/Detling SID should not be vectored before the Railway line between St Albans and Harpenden, unless this is required for safe separation from other aircraft or for other safety issues (such as avoiding adverse weather).

Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton airport with detailed information about each departure route.

Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



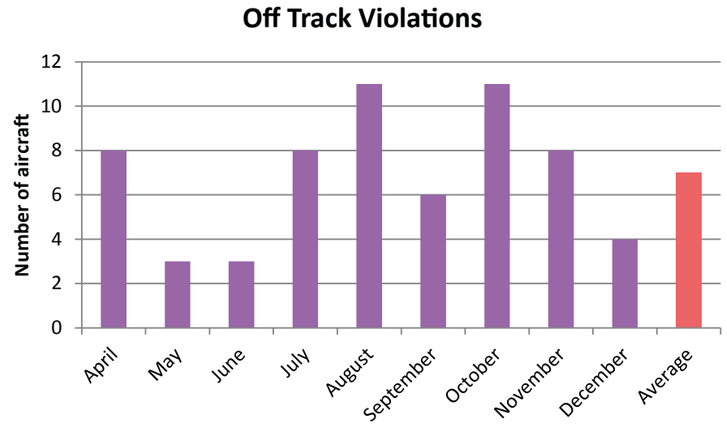
On Track performance

On the 1st April 2015 London Luton airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the Aircraft Noise and Track Monitoring System the airport's specialist flight operations team evaluates the radar tracks and investigate them with required input from ATC and airlines. A departure is deemed to have complied with the Noise Preferential Routing if the portion of flight below the appropriate vectoring altitude is flown wholly within the Lateral Swathe (LS). Where the aircraft is clearly flying outside the LS, the aircraft is identified as causing a "possible" track violation and is subject to a nominal fine.

As always, safety prevails and there may be cases which involve vectoring an aircraft sooner than at the NPR height restriction. If ATC identifies any valid justification that could explain the deviation from the track, then the operator causing it will be exempt from the fine. Valid justifications include:

- Safety or operational reasons, i.e ATC vectoring
- Weather avoidance due to thunderstorm activity (as instructed by ATC)
- Emergencies

The diagram below shows off-track violations over the previous 9 month period. The on track performance for this period was 99.51%



The breakdown of the violations by aircraft type is shown in the tables below

A/C Type	№ Violations
ATP	7
CL60	6
GLF5	5
GLEX	5
H25B	4
C550	3
CL30	3
GLF4	3
F900	2
C680	2
C25B	2
GL5T	2
C56X	2
LJ60	2
FA50	2

A/C Type	№ Violations
C525	1
C25A	1
GLF6	1
B462	1
FA50	1
B737	1
BBJ3	1
EA50	1
A319	1
B732	1
C510	1
A320	1
TOTAL	**62**

£52,000, the total of all collected fines transferred to Community Trust Fund

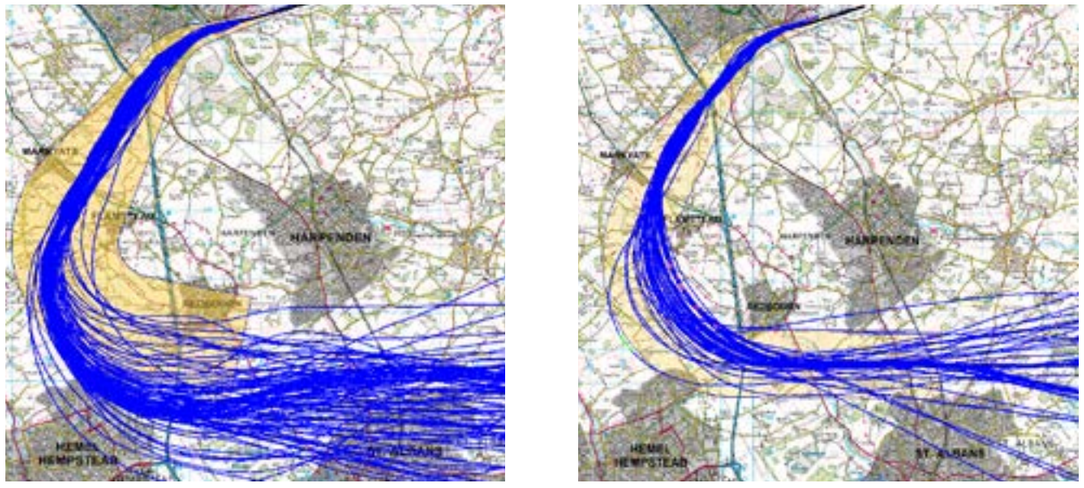
Area Navigation (RNAV) procedures

Following on from a successful consultation, in which over 90% of feedback received from over 1400 responses was in favour of the new route, RNAV1 flight procedures were introduced on our westerly Match/Detling departure route on the 20th August 2015. This was designed to keep aircraft much closer to the centreline of the route using modern GPS procedures as opposed to older ground based radio beacons. This also allowed a reduction in the width of the corridor from 3km to 2km and means the number of people directly overflown has been reduced from approximately 13,000 to 3,000 people.

After implementation the Flight Operations Department at London Luton airport closely monitored the route. For the majority of flights we saw RNAV working as predicted which had positive effects for our local communities. However, some aircraft were still vectored by Air Traffic Control earlier than expected which resulted in some overflights for the north of St Albans. The Flight Operations team have been in close contact with Air Traffic Control in Swanwick regarding this issue, sending daily tracks of where aircraft had been vectored. This has resulted in some improvement. Work will be on-going to improve this although there are occasions when vectoring is required, for safety reasons or to avoid bad weather.

In November 2015, the Flight Operations team noticed that aircraft had been following a tighter curve of the RNAV route and were therefore closer to Flamstead. Through investigation and communication with pilots it was discovered that this is due to strong south-westerly winds during that time. Winds were sometimes between 45-50knots at aerodrome level and therefore at 3000-4000ft these winds are even stronger. Unfortunately this is not something which can be avoided with the RNAV procedures or conventional procedures.

The final step of the Airspace Change Process is the publication of a Post-Implementation Review, this will be published by the CAA a year after implementation.



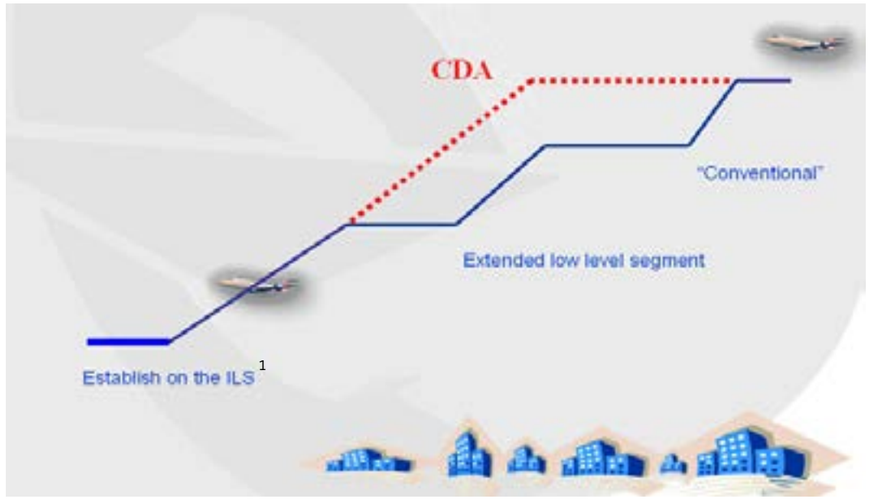
Aircraft using conventional procedures and aircraft using RNAV procedures (above)

Required Navigation Performance (RNP) procedures

LLA is currently in the process of improving track adherence further on the westerly Match/Detling routes by introducing the latest flight procedural technology (known as RNP). The Flight Operations Department started the Airspace Change Process in 2015 and have begun the design process. The team is hoping to conduct live flight trials in late 2016, with a consultation during 2017.
Following this work, the next steps are to adopt new procedures on the remainder of our departure routes and also our arrival routes.

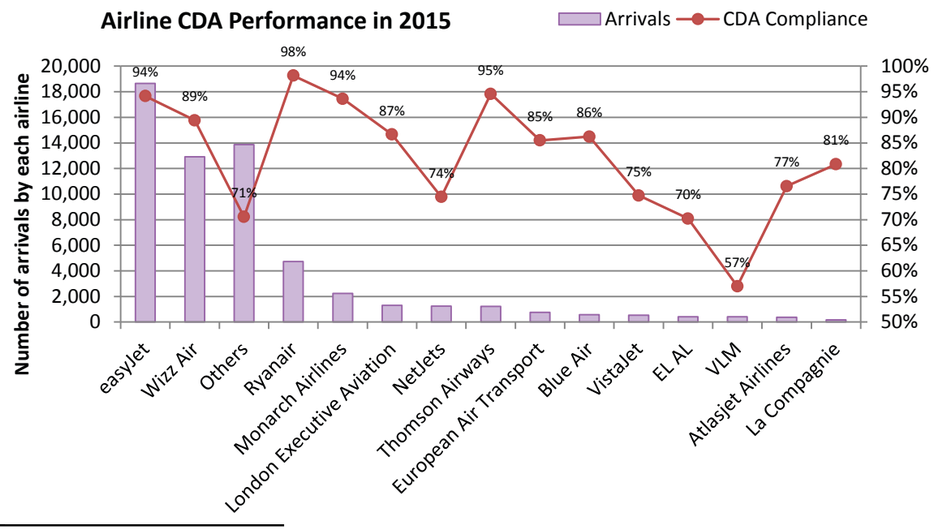
Arriving Aircraft

Although there are no set routes for arriving aircraft there are long established procedures to mitigate the disturbance that can be caused on approach to the airfield. One of the most successful measures is a noise mitigation procedure called Continuous Descent Approach (CDA).



The conventional approach involves descending in steps using engine thrust to level off. In a Continuous Descent Approach, or CDA, an aircraft stays higher for longer and reduces periods of prolonged level flight at lower altitudes. When it's near the airport the pilot, with low power engines, continuously descends straight to the runway where they complete the landing in the traditional manner. With CDA planes burn less fuel and therefore produce less emissions, but most importantly it reduces the noise by avoiding the engine thrust required for level flight.

The overall CDA achievement was 87% with several major LLA operators achieving higher performance – easyJet, Ryanair, Monarch and Thomson Airways. The chart compares the level of CDA performance by our main airline operators.



[1] - An Instrument Landing System (ILS) is a ground-based instrument approach system that provides precision lateral and vertical guidance to an aircraft approaching and landing on a runway, using a combination of radio signals and, in many cases, high-intensity lighting arrays to enable a safe landing during instrument meteorological conditions (IMC).

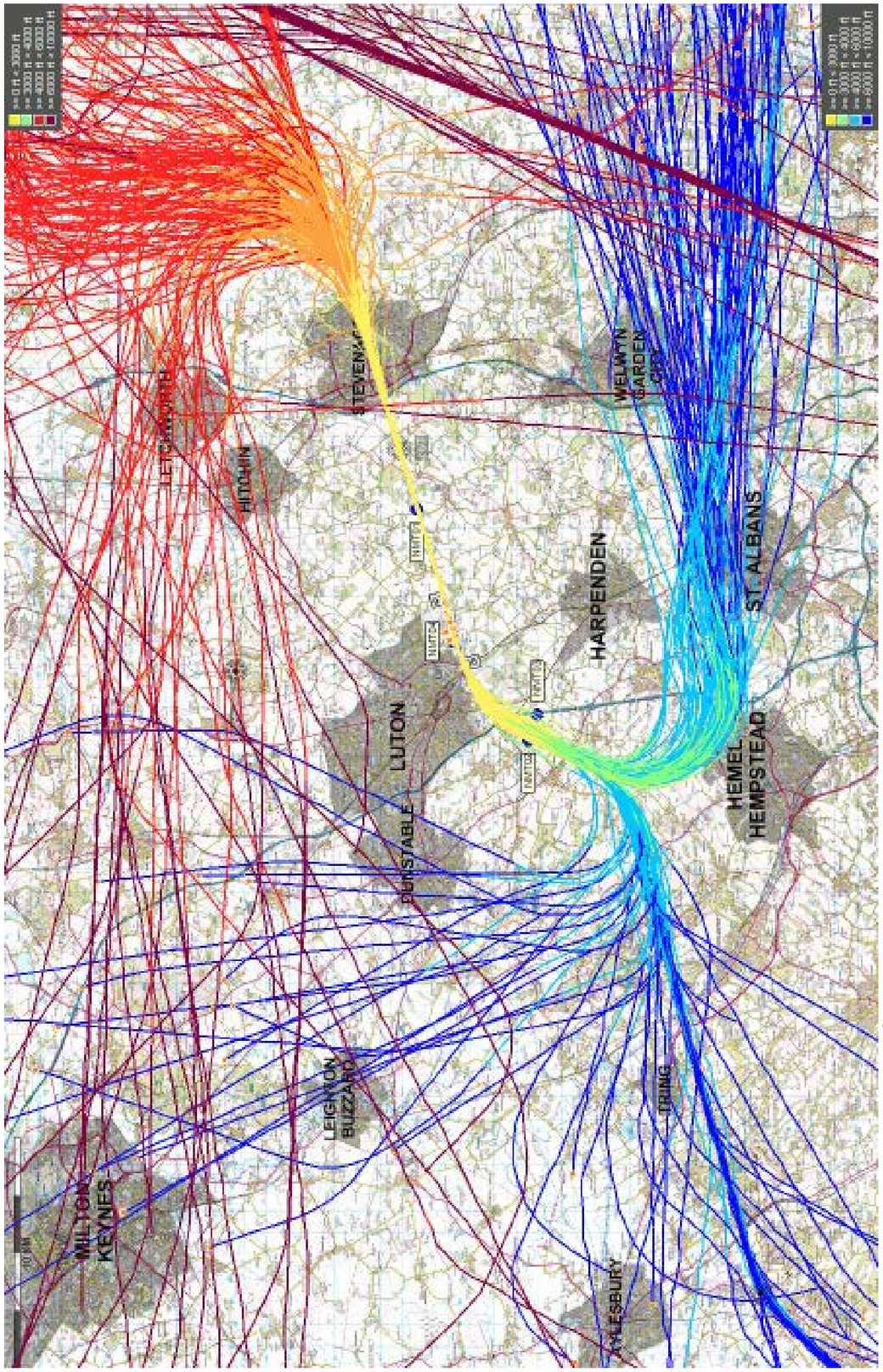
Departure and arrival flight tracks

Maps overleaf display typical 24 hour periods of both westerly and easterly operations, with arriving traffic in red and with departing aircraft tracks in blue. The colour coding from yellow to brown and from yellow to dark blue represents different altitude bands up to 10,000ft above mean sea level.

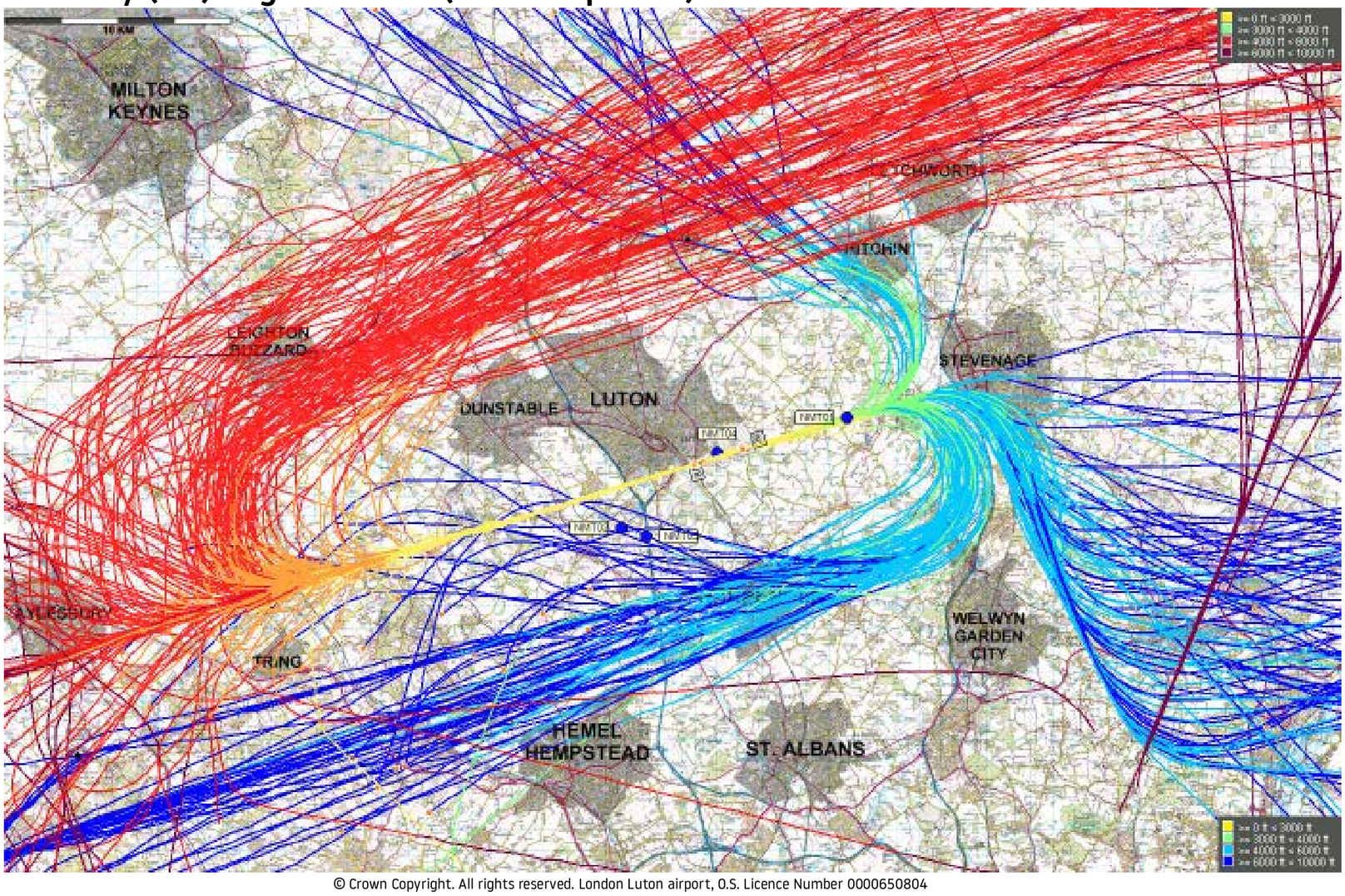
The last two maps display aircraft track density plots for the summer period 16th June - 15th September 2015. A track density plot is a map which displays the pattern of aircraft flight track passing over the region around the airport during a specific period. The system analyses the number of flights passing over each grid element of an array. The colour coding from purple to red represents the range 1 to over 147 flight tracks over a grid element. If any grid element is not colour-coded, the number of aircraft flight tracks passing over that element was less than 1 flight. The red areas represent locations where operations are more densely concentrated.

It should be noted that London Luton airport's aircraft movements integrate with traffic travelling to and from other airports in the region, as the south east area in the UK is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton airport and overflights from other airports have been omitted for clarity.

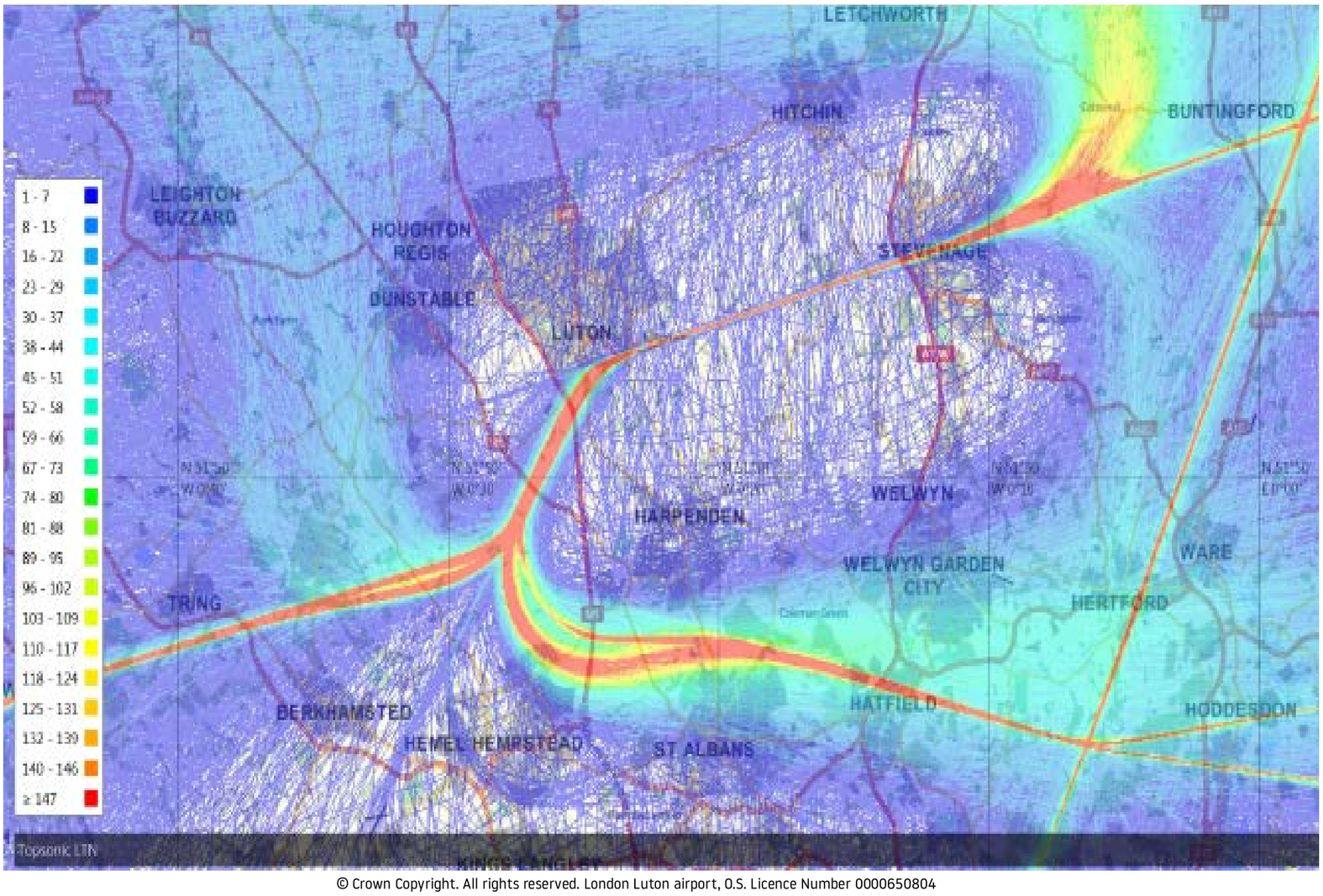
Westerly (26) Flight Routes (24 hour period)

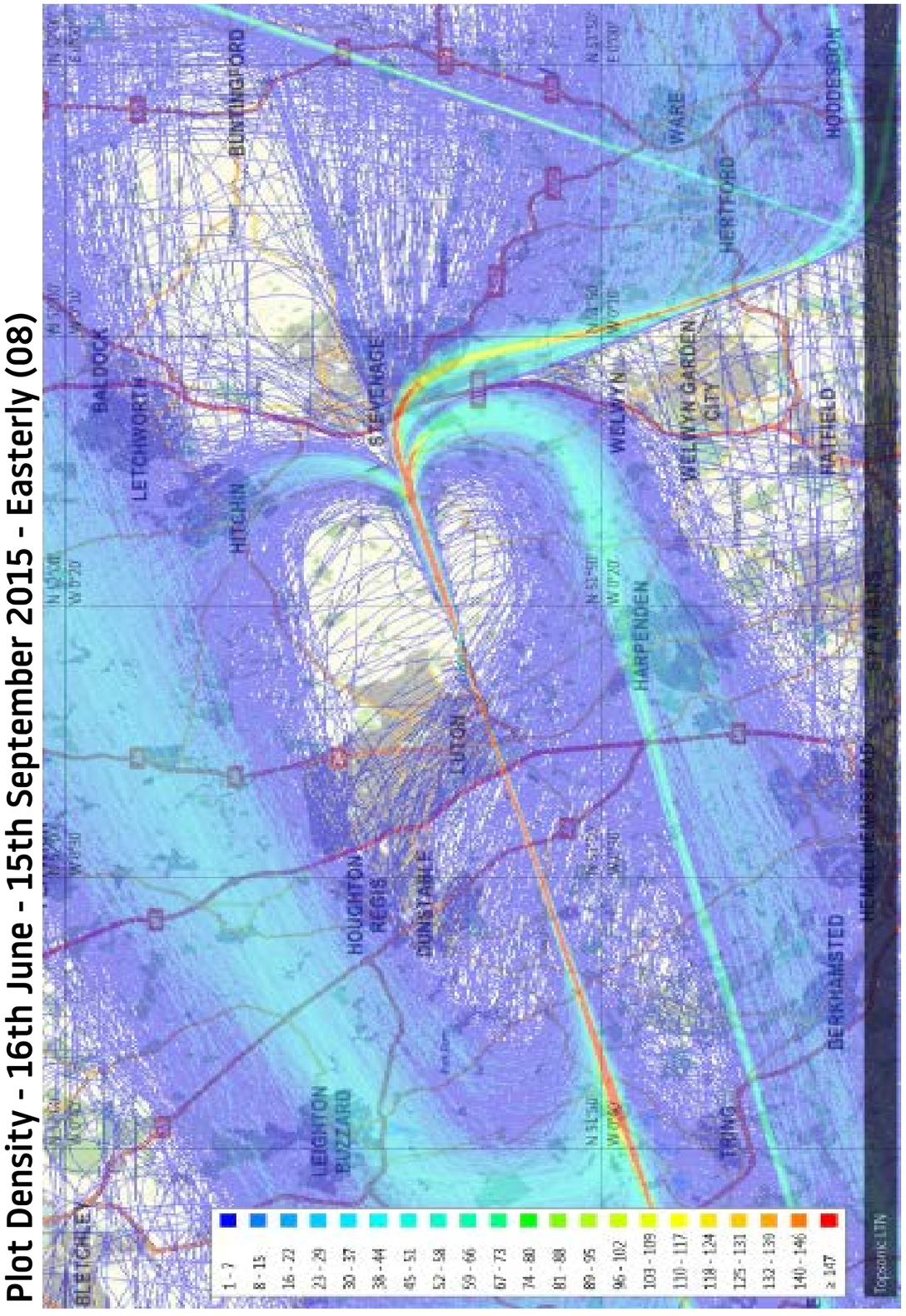


Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2015 - Westerly (26)





Aircraft Noise

Noise is generally defined as unwanted sound. Although it is recognised that noise perception is very subjective, there are a number of internationally recognised terms to describe and measure aircraft noise. Most airport related noise is created by aircraft approaching, taking-off and taxiing to and from the runway. The management and control of noise continues to be a major element of the airport's policy to constantly seek to minimise and mitigate our environmental impact.

How is noise monitored?

People who live close to airports or under flight paths can often feel strongly about the disturbance to their lives from noise. Effects of noise include general distraction, speech interference and sleep disturbance which can lead to annoyance and complaints.

At LLA monitoring is provided by the Topsonic Aircraft Noise and Track Monitoring System. This system is designed to monitor air traffic within a radius around the airport (set at around 25 miles), and generally up to an altitude of 12,000ft. It downloads noise data from three fixed noise monitors located 6.5km from the aircraft start of roll, at either end of the runway within the neighbouring communities. This method records the maximum noise level at a point, rather than the way it is spread over the surrounding area.
New features and system enhancements continue to improve the functionality and capabilities available to the Flight Operations Department.

TraVis, an online flight-tracking tool enables the general public to see for themselves the actual flown tracks of LLA aircraft departures and arrivals. This can be viewed online at the following link on the airport website.
http://travisltn.topsonic.aero/

Noise violation levels

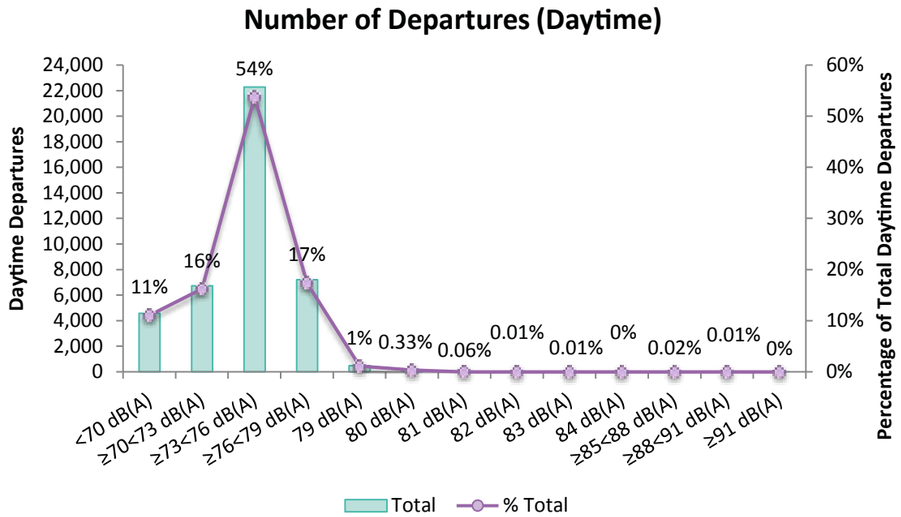
During the 1st Quarter 2015 the day and night Noise Violation Limits (NVLs) were still 94 dB(A) and 82 dB(A) respectively. However, as from 1st April 2015 a progressive reduction in the daytime (0700-2300) NVL was implemented, as well as a voluntary reduction in the night-time (2300-0700) NVL. These were set to 82 dB(A) and 80 dB(A) respectively. The limits encourage airlines to operate modern and quieter aircraft types.

The following table identifies daytime and night-time noise levels correlated to departing aircraft at the fixed noise monitoring terminals.
(Any aircraft exceeding the Daytime Noise Violation Limit of 82dB(A), between 07:00 hrs and 23:00 hrs and the Night-time Noise Violation Limit of 80dB(A), between 23:00 ana 07:00, is fined accordingly).

	Number of Departures													Total
db (A)	<70	>=70 <73	>=73 <76	>=76 <79	79	80	81	82	83	84	>=85 <88	>=88 <91	>=91	
Daytime	4,580	6724	22,284	7,215	467	138	26	5	5	2	9	4	0	**41,459**
Night-time	563	772	2,285	1,082	88	28	7	2	2	0	0	0	0	**4,829**

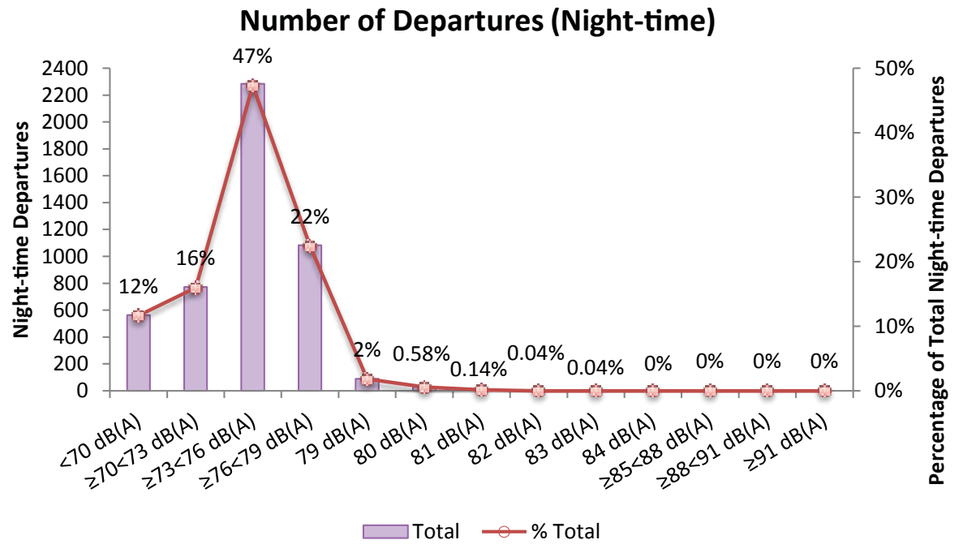
During the daytime 98% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 81% registering below 76dB(A). Throughout the year 656 correlated daytime departures (2%) registered maximum noise levels above 79dB(A).

There were 20 correlated departing aircraft which recorded a maxiumum noise level greater than 82dB, 5 of these instances were recorded before 1st April 2015 and not subject to the new NVL's, therefore there were only 15 daytime noise violations.



During the night 97% of correlated departures recorded maximum noise levels below 79dB(A), with 75% below 76dB(A). During the year 127 correlated night departures (3%) registered maximum noise levels above 79dB(A).

There were 11 correlated departing aircraft which recorded a maxiumum noise level greater than 80dB,. However, 2 of these instances were recorded before 1st April 2015 and not subject to the new NVL's, therefore there were only 9 night-time noise violations.



Noise violations during 2015

There were 15 violations of the daytime noise level in 2015, and a total of 9 violations of the 80dB(A) night noise violation level (details below), compared to four night noise violations in 2014.

	Date / Time (Local)	Aircraft Type	Noise Level	Penalty
Daytime	09/04/2015	Boeing 737-200	85dB (A)	£100
	18/04/2015	Boeing 737-200	85dB (A)	£100
	26/05/2015	MD-83	83dB (A)	£100
	15/06/2015	Boeing 737-200	89dB (A)	£500
	02/07/2015	Boeing 737-200	86dB (A)	£500
	16/07/2015	Boeing 737-200	89dB (A)	£500
	18/07/2015	Boeing 737-200	84dB (A)	£100
	30/08/2015	Boeing 737-200	88dB (A)	£500
	30/08/2015	Dassault Falcon 900	84dB (A)	£100
	07/09/2015	Gulfstream III	85dB (A)	£100
	10/09/2015	Airbus A320	85dB (A)	£100
	23/09/2015	Antonov 12	83dB (A)	£100
	27/11/2015	Boeing 737-200	85dB (A)	£100
	19/10/2015	Boeing 737-200	86dB (A)	£500
	19/12/2015	Boeing 737-200	83dB (A)	£100
Night-time	13/04/2015	Boeing 737-400	81dB (A)	£100
	05/06/2015	Boeing 737-800	83dB (A)	£100
	05/06/2015	Boeing 737-800	82dB (A)	£100
	07/06/2015	Boeing 737-800	83dB (A)	£100
	20/06/2015	Boeing 737-400	81dB (A)	£100
	24/06/2015	Dassault Falcon 900	81dB (A)	£100
	04/09/2015	Boeing 737-800	81dB (A)	£100
	02/12/2015	Boeing 737-200	81dB (A)	£100
	18/12/2015	Airbus A306	81dB (A)	£100

All fines are passed to the London Luton airport Community Trust Fund, further details of which can be found at
http://www.london-lutoninthecommunity.co.uk/content/1/3/community-trust-fund.html

Noise Contours

Since 1989 the preferred measure of aircraft noise, recognised by UK Government, has been the A-weighted equivalent noise level Leq. This indicator takes account of all the noise energy that occurs over a particular time period and thus takes account of all the aircraft movements, both departures and arrivals, that occurred in that period. In the UK the noise impact of an airport is primarily described in terms of the LAeq averaged over the 16 hour period from 0700-2300 for an average day between the 16th June and 15th September.

When planning permission was given in 2014 for development at London Luton Airport a number of conditions were imposed. Condition 12 requires that daytime and night-time contours are produced on an annual basis for the previous summer period based on actual aircraft movement data and for the following summer period based on predicted aircraft movement data. The areas of these contours are to be compared to the area limits contained in Condition 12. Year on year changes in the noise impact are dependent on changes in the number and type of aircraft that used the airport and also the departure routes flown. Changes in the size and shape of the contours can also depend on differences in the runway usage which in turn depends on the relative proportion of westerly and easterly modes of operation, determined by the prevailing wind direction.

Annual noise contours summer 2015

The table below shows the annual noise contours for summer 2015 covering the standard summer period from 16th June to 15th September inclusive, using the latest version of INM software (the Integrated Noise Model) version 7.0d which is the method used by many other airports in the UK.

$L_{Aeq, 16\ hour}$ Daytime	Contour Area (km²)					
	1984	1999	2014	2015	Difference 2014-2015	2016 (forecast)
>72	1.63	1.5	0.9	0.9	0.0	1.0
>69	2.80	2.5	1.4	1.5	+0.1	1.7
>66	4.86	4.4	2.7	2.5	-0.2	2.9
>63	9.10	7.3	5.5	4.9	-0.6	5.7
>60	17.18	11.8	9.3	9.0	-0.3	10.1
>57	**31.52**	**19.6**	**15.8**	**17.2**	**+1.4**	**18.8**

Considering the summer 2015 daytime noise contour there is an increase in area of approximately 9% when comparing the 2015 contour with the 2014 driven by a 15% increase in movements. Due to the updated departure profiles, based on information provided by easyJet, used for the 2015 contours the higher value contours have decreased in area between 60 and 66 dB, despite the increase in movement numbers. The daytime movements increased from 25,616 in 2014 to 29,679 in 2015. The 2016 contours are forecast to grow by 9% to 16% compared to the 2015 contour, largely due to a forecast 11% increase in movement numbers.

$L_{Aeq, 8\ hour}$ Night-time	Contour Area (km²)					
	1984	1999	2014	2015	Difference 2014-2015	2016 (forecast)
>72	0.79	1.1	0.4	0.4	0.0	0.4
>69	1.39	1.8	0.6	0.6	0.0	0.7
>66	2.42	3.0	1.0	1.0	0.0	1.1
>63	4.01	5.2	1.7	1.7	0.0	1.7
>60	7.06	8.3	3.4	3.0	-0.4	3.1
>57	13.05	13.2	6.5	5.7	-0.8	5.8
>54	24.48	21.6	11.3	10.8	-0.5	11.0
>51	44.92	36.0	20.0	20.2	+0.2	20.8
>48	**85.04**	**60.6**	**35.2**	**35.3**	**+0.1**	**36.3**

Considering the summer 2015 night-time noise contour there is very slight increase in the area when comparing the 2015 contour with 2014 contour, while the higher value contours, 54 to 60 dB have decreased in area. The night-time movements decreased slightly from 4,490 to 4,376.

The summer 2016 night-time contour is forecast to grow by 3% compared to the 2015 contour, despite almost no change in movement numbers. This is attributed to the increase in movements by the main passenger types, in particular the Boeing 737-800.

The 2015 results are significantly below the 1984 values and also below the 1999 predicted values which, if exceeded, would require a noise reduction plan to be implemented. The resulting summer 2016 forecast daytime contour has an area of 18.8 km², below the planning limit of 19.4 km², and the summer 2016 forecast night-time contour has an area of 36.3 km², below the planning limit of 37.2 km².

Contour population counts

The population counts for this year were calculated using the CACI Ltd, 2014 postcode database. Each postcode in the database is described by a single geographical point, and if this point is within a contour then all of the dwellings and population in the postcode are counted.

$L_{Aeq, 16\ hour}$ Daytime	2014		2015	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	500	1,300	250	700
>60	1,300	3,600	750	2,200
>57	**2,900**	**7,300**	**2,600**	**7,100**

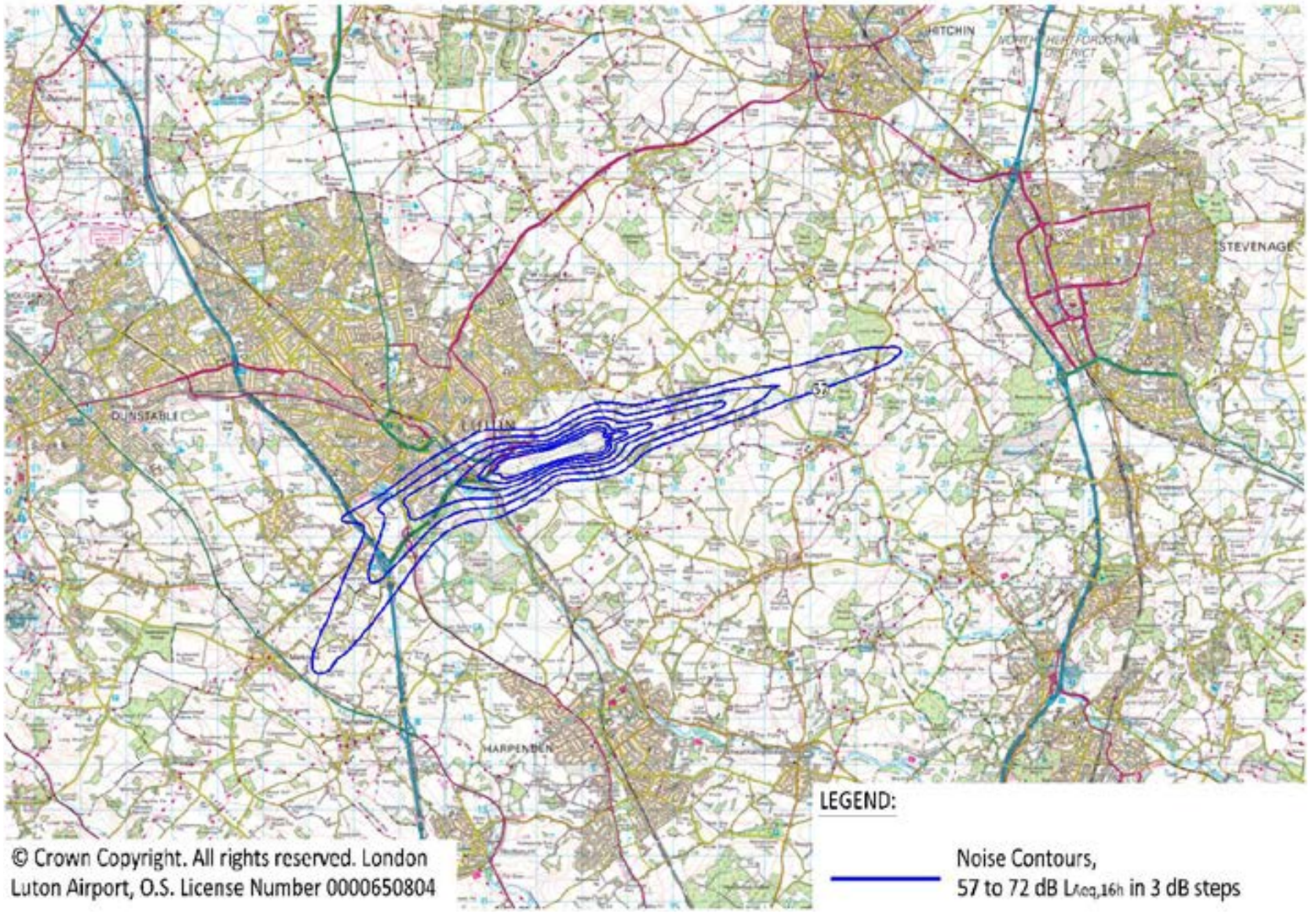
When looking at the daytime results there are generally decreases in the number of dwellings and the population within the contours when comparing 2015 with 2014. For the summer 2015 daytime contour the decrease in population is around 2% for the higher value contours the decrease is significantly greater. The summer 2015 daytime contour also contains fewer dwellings and a lower population despite an increase in overall area, this is due to the change in shape of the contour, with the areas where noise has increased being sparsely populated and the areas where there has been a decrease in noise being more densely populated.

$L_{Aeq, 8\ hour}$ Night-time	2014		2015	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	150	400	0	0
>57	650	1,800	400	1,200
>54	1,600	4,400	1,050	3,000
>51	3,700	9,100	2,850	7,700
>48	**6,600**	**16,000**	**5,550**	**14,700**

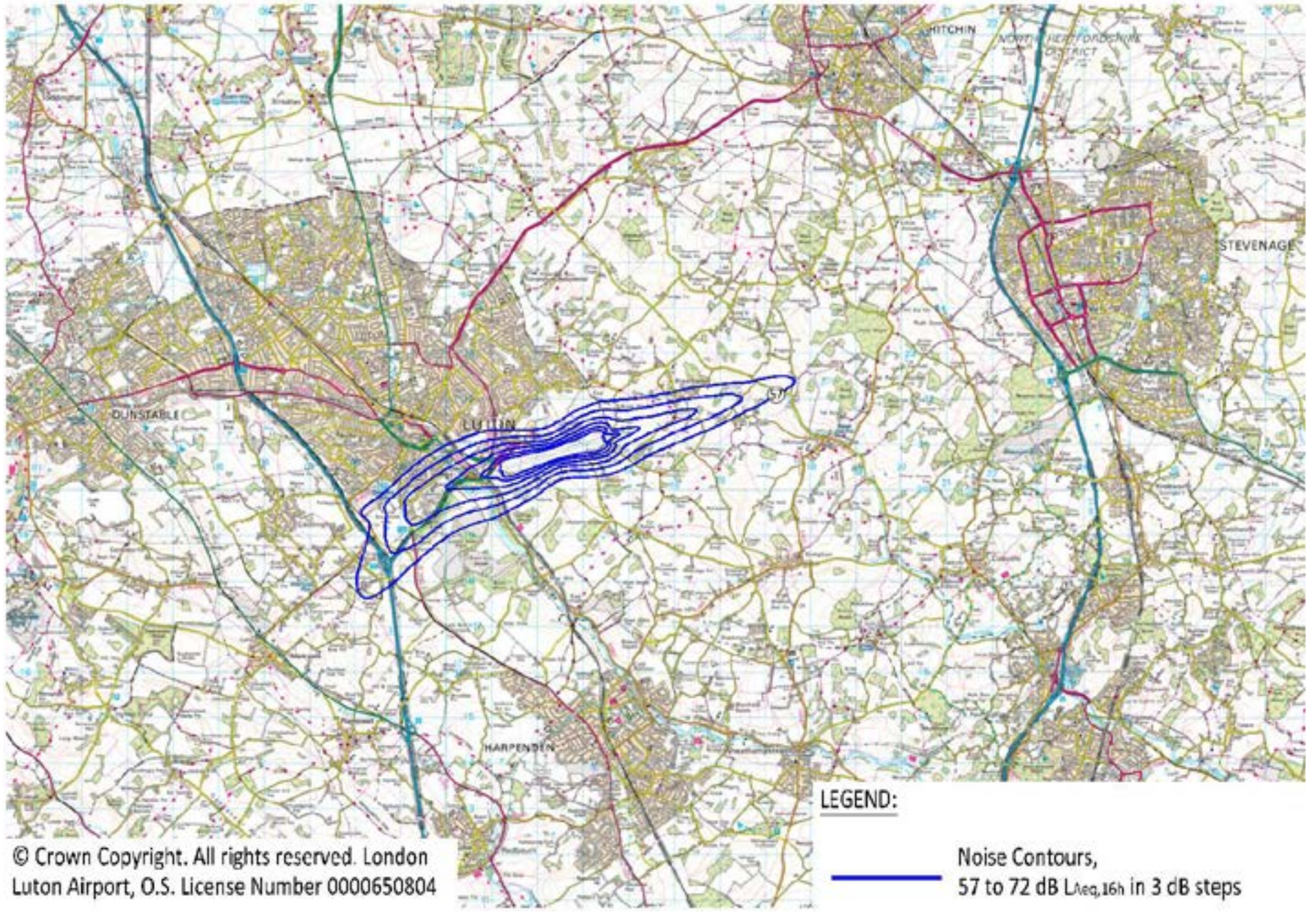
For the night-time contours there are consistent decreases in the numbers of dwellings and the population within the contours when comparing 2015 with 2014. For the summer 2015 night-time contour the decrease in population is around 8%. As for the daytime contours the reductions are due the changed shape of the contour due to the new departure route profiles.

Please note in the above tables the results for households and resident populations are cumulative.

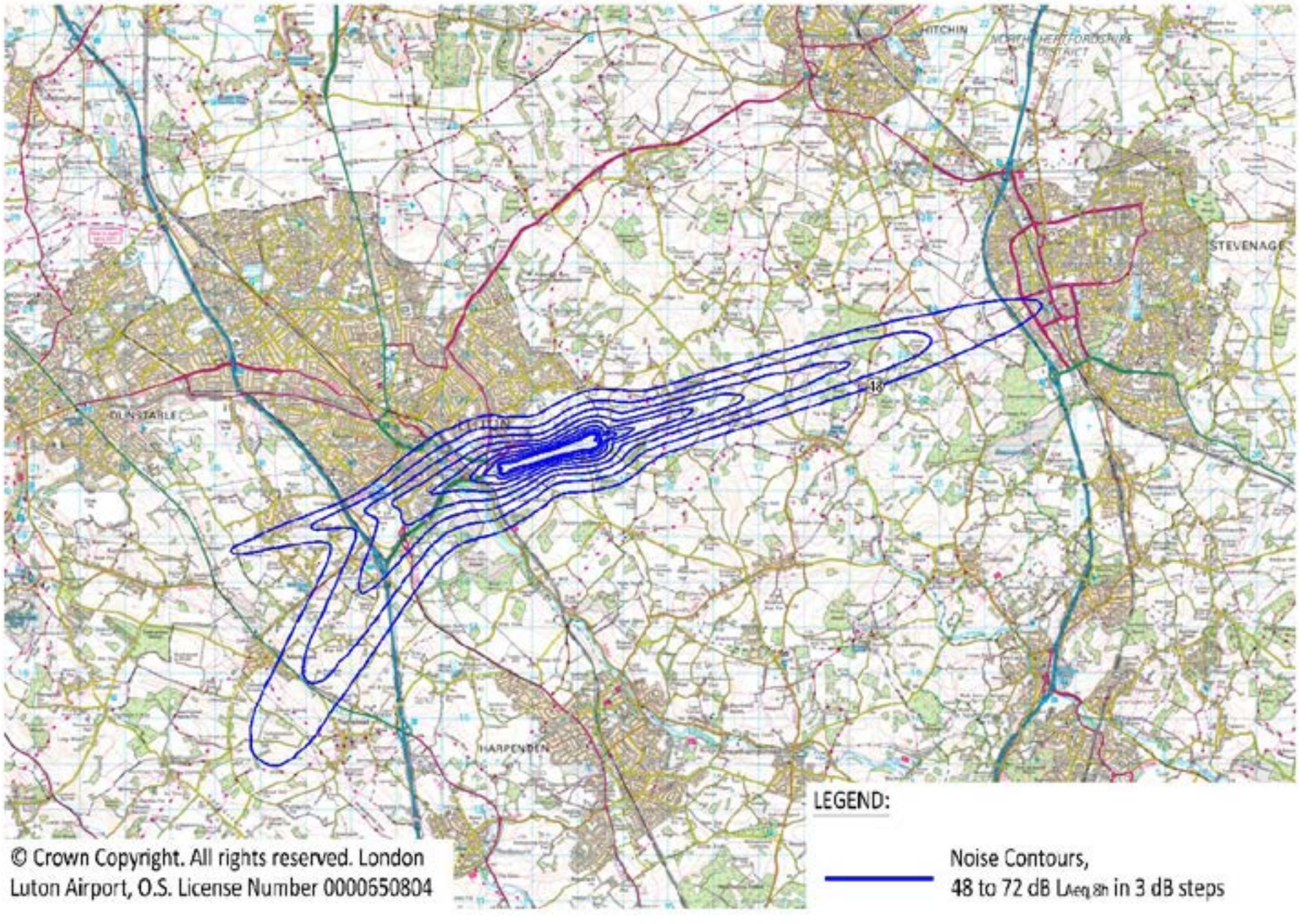
Annual Day Noise Contours Summer 2015



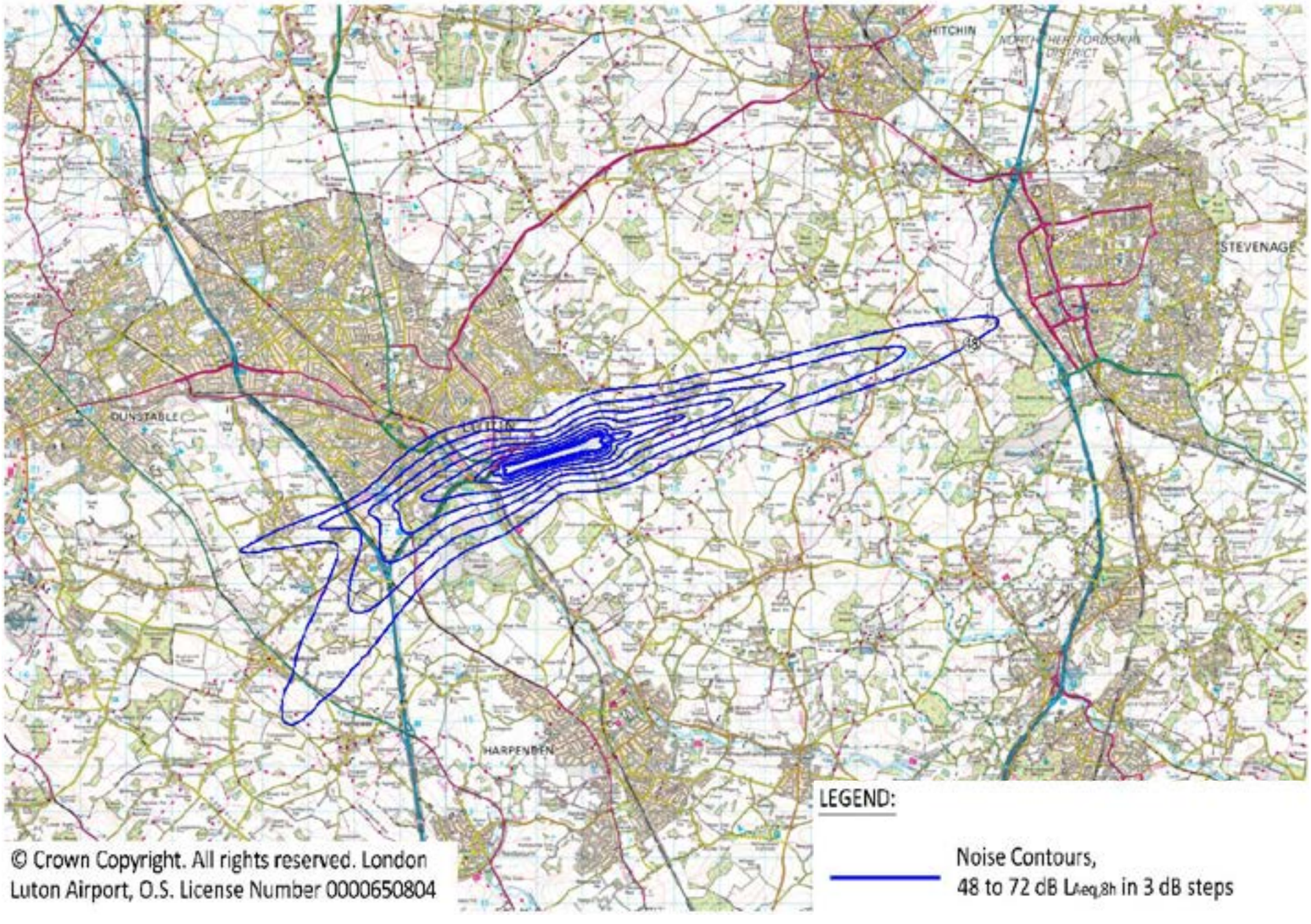
Annual Day Noise Contours Summer 2014



Annual Night Noise Contours Summer 2015



Annual Night Noise Contours Summer 2014



Annual Noise Contours 2015

The annual Lden noise contours for 2015 have been produced in accordance with London Luton airport's Noise Action Plan. The corresponding annual Lnight noise contours have also been produced, along with population and dwelling counts for each contour.

Compared to annual summer 2015 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2015, with a 10dB penalty added to the level between 23.00 and 07.00 hours and a 5 dB penalty added to the level between 19.00 and 23.00 hours to reflect people's extra sensitivity to noise during the night and the evening.

Lnight is similarly an A-weighted Leq noise level, for an average 8 hour night period between 2300 and 0700 for the period 1st January to 31st December 2015.

Annual Lden Noise Contour Results

Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2014	2015	2014	2015	2014	2015
>75	0.7	0.8	0	0	0	0
>70	1.6	1.7	0	0	0	0
>65	5.3	4.7	1,100	500	400	200
>60	13.1	13.6	5,600	4,700	1,950	1,700
>55	**33.6**	**35.7**	**16,400**	**14,800**	**6,150**	**5,550**

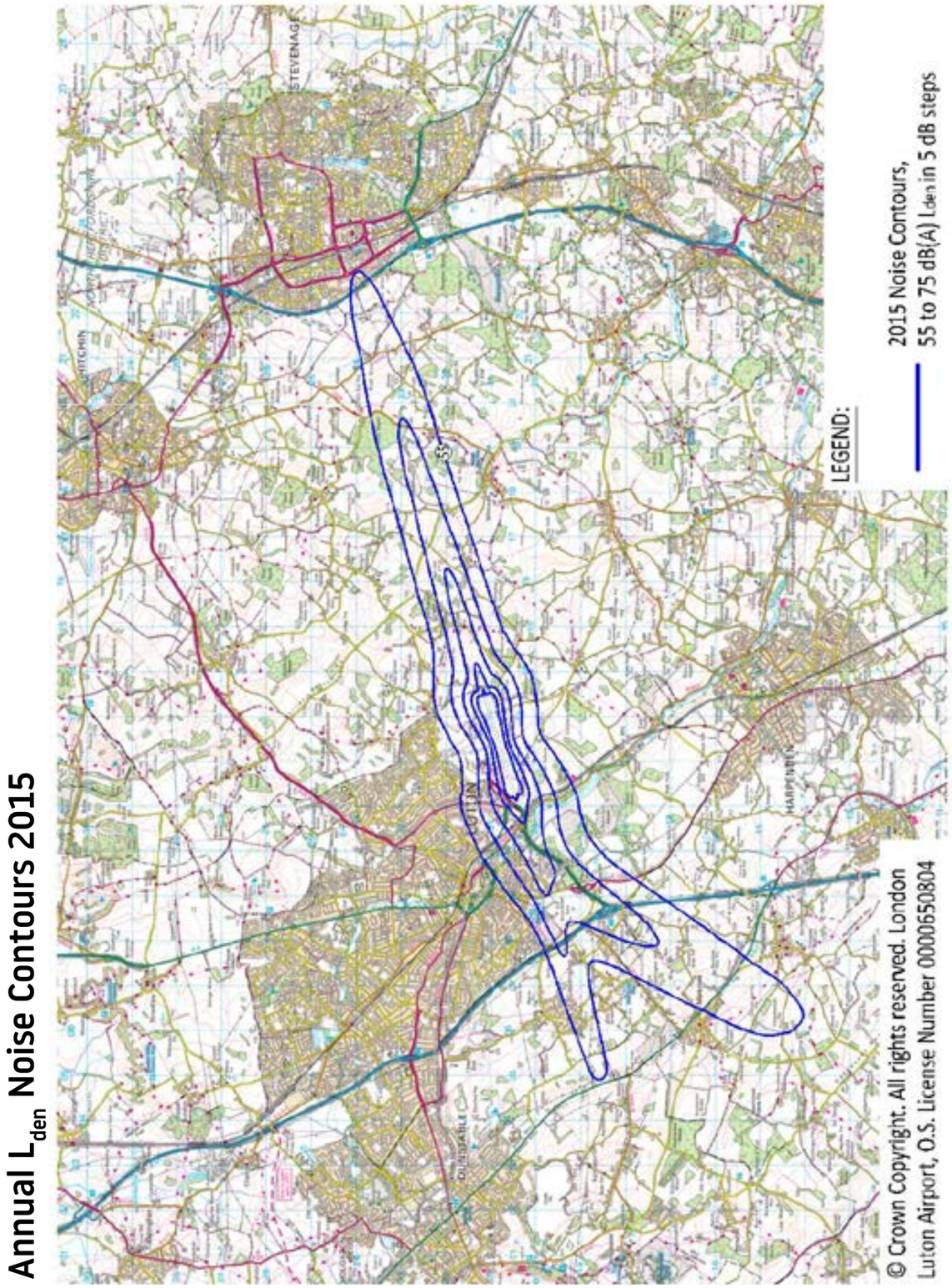
Annual Lnight Noise Contour Results

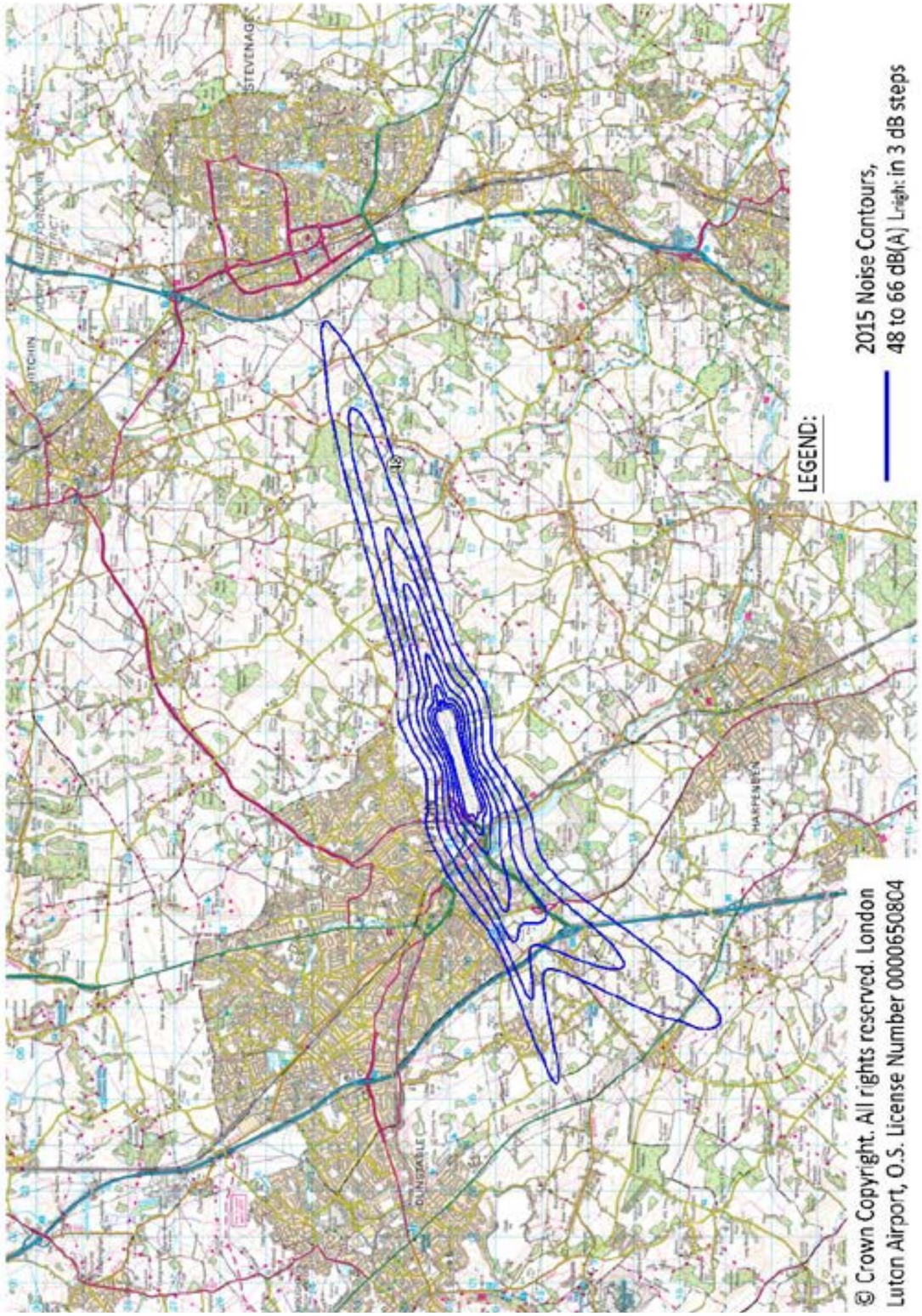
Contour Value (dB(A) L_{den})	Contour Area (km²)		Population[1]		Dwellings[2]	
	2014	2015	2014	2015	2014	2015
>66	0.8	0.8	0	0	0	0
>63	1.3	1.3	0	0	0	0
>60	2.3	2.2	0	0	0	0
>57	4.7	4.3	800	400	350	150
>54	8.3	7.8	2,500	2,000	900	700
>51	14.9	15.0	6,300	5,200	2,250	1,850
>48	**25.7**	**27.1**	**12,700**	**10,900**	**4,750**	**4,100**

The population and dwellings within all the contours has decreased, despite in some cases increasing areas. The contours have narrowed at locations close to the airport, reducing the area of southern Luton contained within the contours. As this area is more densely populated the reduction in area here more than outweighs increases in other more rural areas. This narrowing of the contours is due to the modified departure profiles.

[1] - Population counts rounded to nearest 100

[2] - Dwelling counts rounded to nearest 50





Annual L_{night} Noise Contours 2015

Correspondence and Complaints

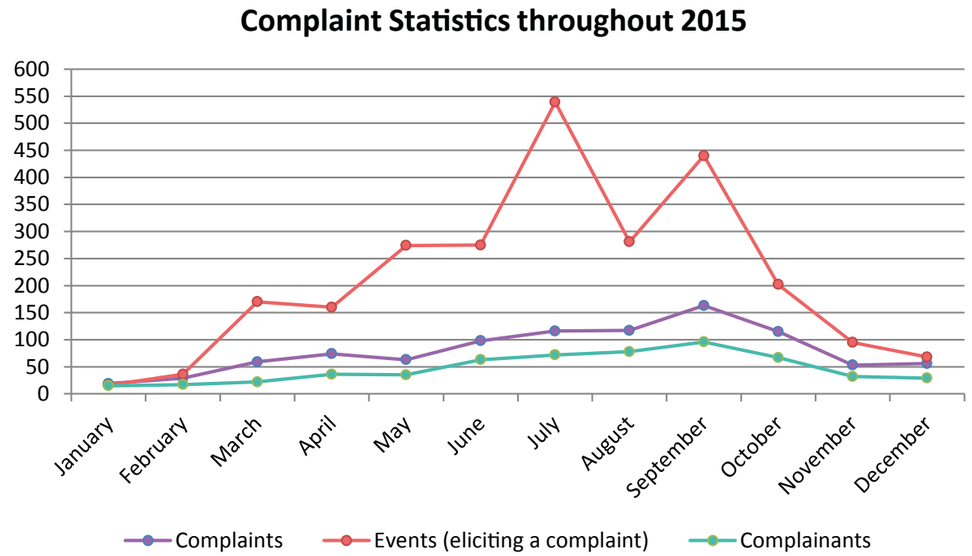
We aim to investigate, log and respond to all correspondence in a timely and systematic manner, preferably within 10 working days. Where this is not possible an acknowledgement is sent by post within 5 working days to those who contact us. E-mail correspondence will automatically receive an acknowledgement by return.

Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

Total complaints relating to LLA aircraft operations

	2014	2015
Total No. of Complaints relating to LLA aircraft operations	**1,146**	**960**
No. of Complainants	**457**	**355**
No. of Events (eliciting a complaint)	**2,836 (1,200*)**	**2,552 (1,098**)**
Average No. of Complaints per Complainant	2.5	2.7
Average No. of Events per Complainant	6.2 (2.6*)	7.2 (3.1**)
Average No. of Events per Complaint	2.5 (1.0*)	2.7 (1.1**)
No. of Aircraft Movements per Complaint	91	121
No. of Aircraft Movements per Event	36 (87*)	45.6 (106**)

During 2015 a total of 960 complaints (on average 3 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 1,146 in 2014. The figure below shows the complaints statistics throughout 2015. More complaints were received in the summer months, correlating with an increase in aircraft activity.



* - Figures excluding 1,636 events reported by three individuals, one resident in Harpenden, one resident in Kensworth and one resident of St Albans

** - Figures excluding 1,454 events reported by two individuals, one resident in Kensworth and one resident in St Albans

355 Individuals reported concerns to the Flight Operations Team during 2015.

231 Individuals **(65%)** contacted the airport only once during 2015.

158 Individuals **(45%)** reported concerns for the first time

During 2015, 1162 events were reported by one individual in St Albans but, in agreement with the LLACC, these events are no longer included in statistics although a total of 92 complaints from this complainant, reporting general disturbance and frequency (both day and night), have been incorporated in all statistics.

960 Complaints relating to LLA aircraft operations

52 Complaints not attributable to LLA traffic, including 7 Complaints relating to non-LLA helicopters operating to/from other airfields

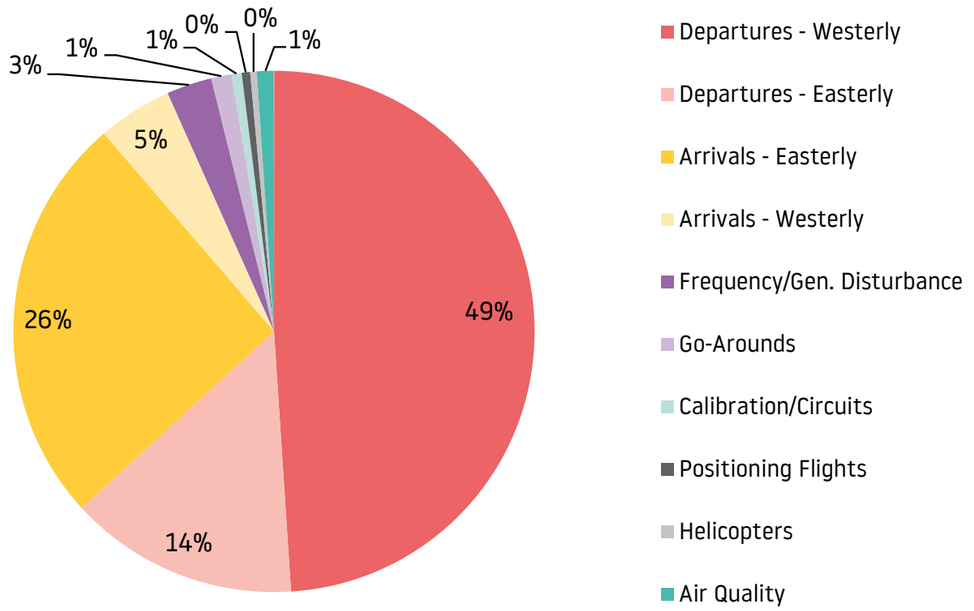
14 Complaints reported disturbance relating to over-flights to/from other airports during the Night Period

181 Individuals reported night noise in 2015 (compared to **92 individuals** in 2014)

434 Complaints concerning night noise disturbance from LLA operations

108 Night noise complaints were from two regular complainants

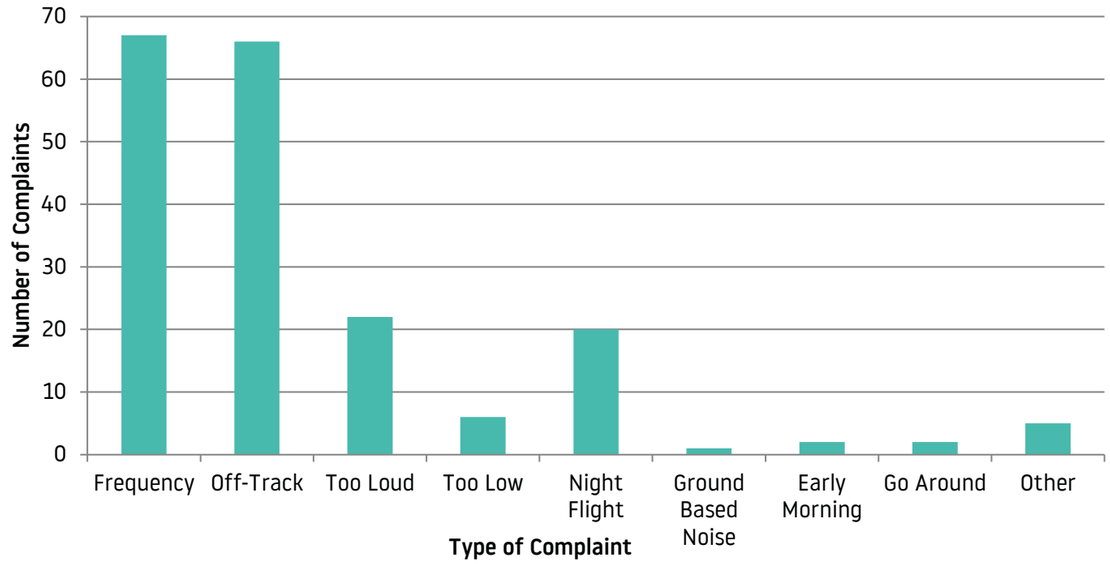
Nature of Disturbance



Within the 473 complaints concerning westerly departures 65 were of a general nature, 373 reported specific aircraft following the Match/Detling route, 24 related to aircraft on the Compton route and 6 related to aircraft following the Olney heading. Five other complaints involved positioning flights following off-airways flight routes.

Of the 138 complaints attributed to easterly departures 8 were of a general nature, 102 related to aircraft following the Compton heading, 7 related to aircraft on Olney flight route and 18 to aircraft on the Match/Detling heading. A further 3 complaints involved positioning flights following off-airways flight routes.

Whilst 187 of the 244 complaints concerning easterly arrivals reported general disturbance, 57 related specifically to aircraft on approach to land from the Lorel Reporting Point.



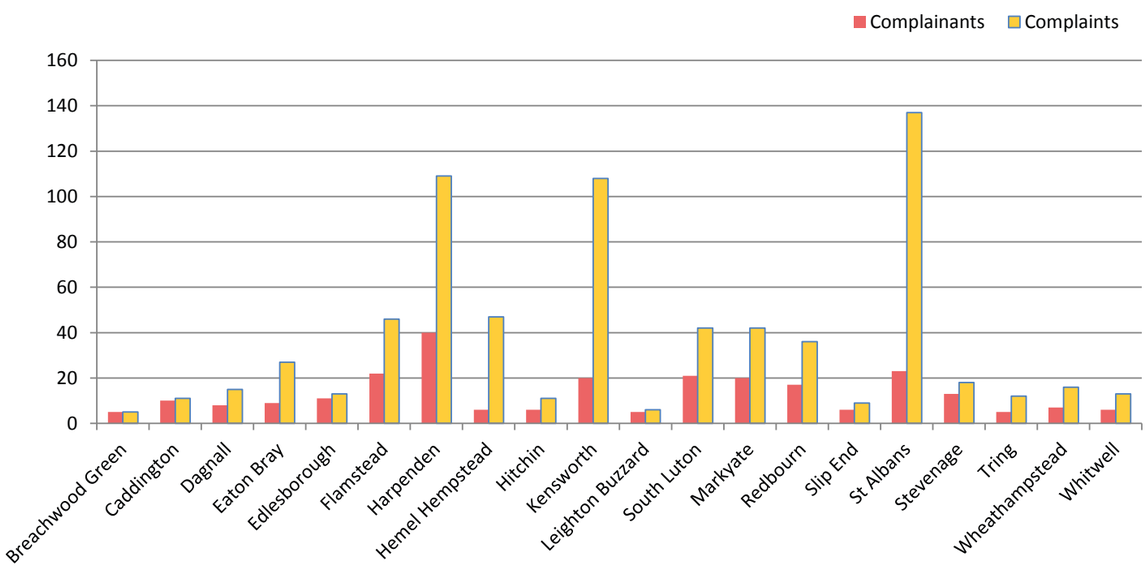
Complaints by aircraft type

Of the 960 complaints relating to LLA aircraft operations registered during the year 574 complaints (60%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The diagram below shows aircraft types generating complaints.

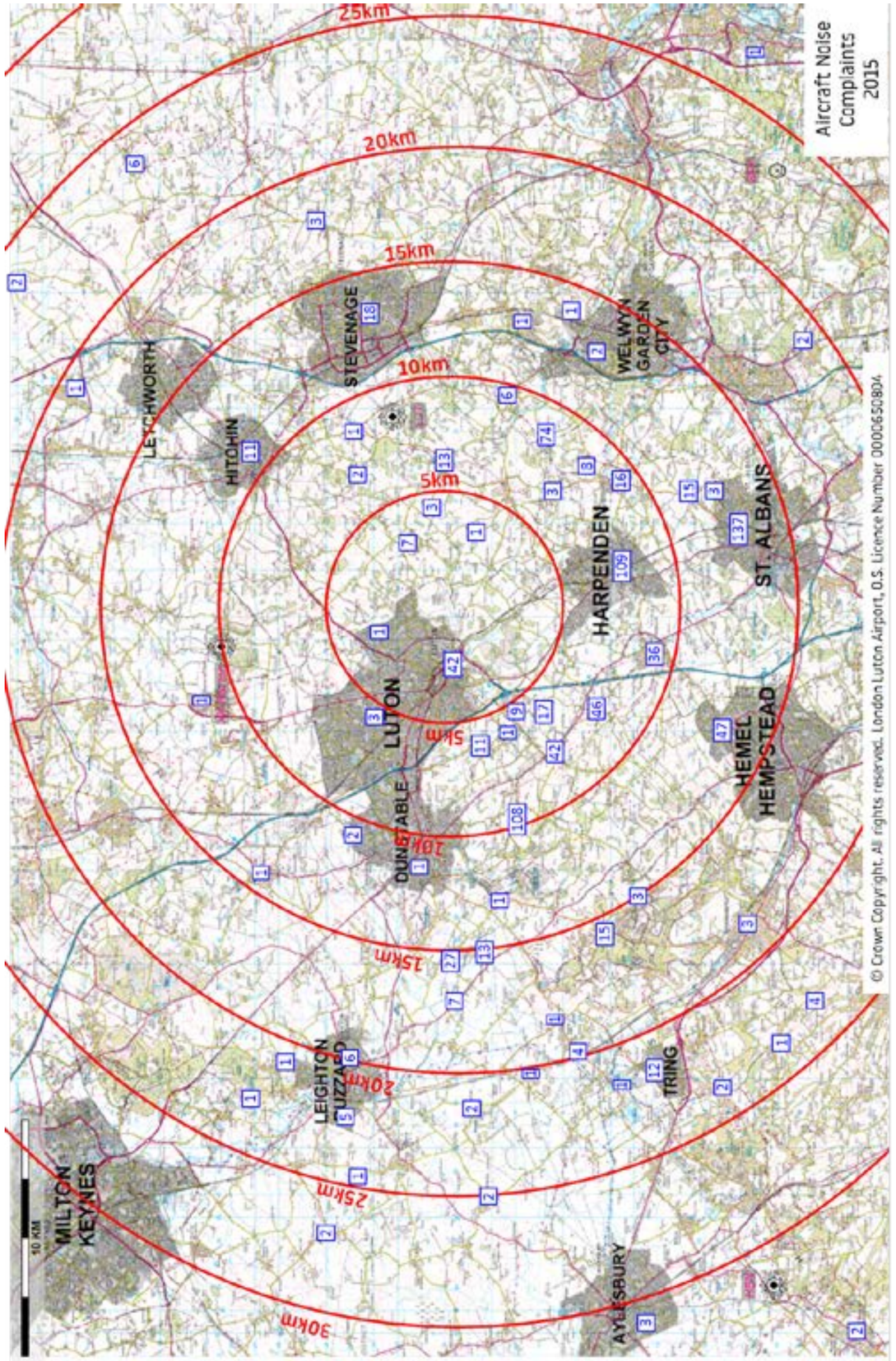
Aircraft Type	No. of Correlated Complaints	% of Total Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A320/A321	168	29.30%	42,060	250
A319	69	12.00%	26,554	385
B737-800	67	11.70%	12,046	180
A306 (Cargo)	83	14.50%	1,276	15
B737-400	34	5.90%	1,000	29
GLF4/GLF5/GLF6	10	1.70%	5,500	550
ATP	12	2.10%	403	34
B757 & B767	27	4.70%	1,550	57
B737-300	8	1.40%	316	40
B737-200	8	1.40%	42	5
Helicopter	4	0.70%	468	117
CL30/CL60	7	1.20%	3,260	466
GLF2/GLF3	0	0.00%	439	0
Other Private Aircraft	42	7.30%	20,046	477
Other Cargo Aircraft	1	0.20%	8	8
Other Passenger Aircraft	34	5.90%	34	1

It can be seen that the majority of the complaints are related to the quietest aircraft. This is mainly due to the frequency of these quieter, modern aircraft types compared to the small percentage of older generation aircraft.

Location of Complainants (5+)



Location of Complaints 2015



Communication method

The following table shows the method of communication used to contact London Luton airport regarding noise.

Communication Method	% of Total Complaints
E-mail	75%
Telephone	24%
Letter	0.7%
TraVis	0.3%

Any concerns relating to aircraft operations associated with London Luton Airport can be reported to the Flight Operations team by the following means:

Postal Address **Flight Operations**
London Luton Airport
Navigation House
Airport Way
Luton
Beds
LU2 9LY
Direct Telephone **(01582) 395382 (24 hours)**
Direct email **noise@ltn.aero**
TraVis **www.travisltn.topsonic.aero**

Community Relations

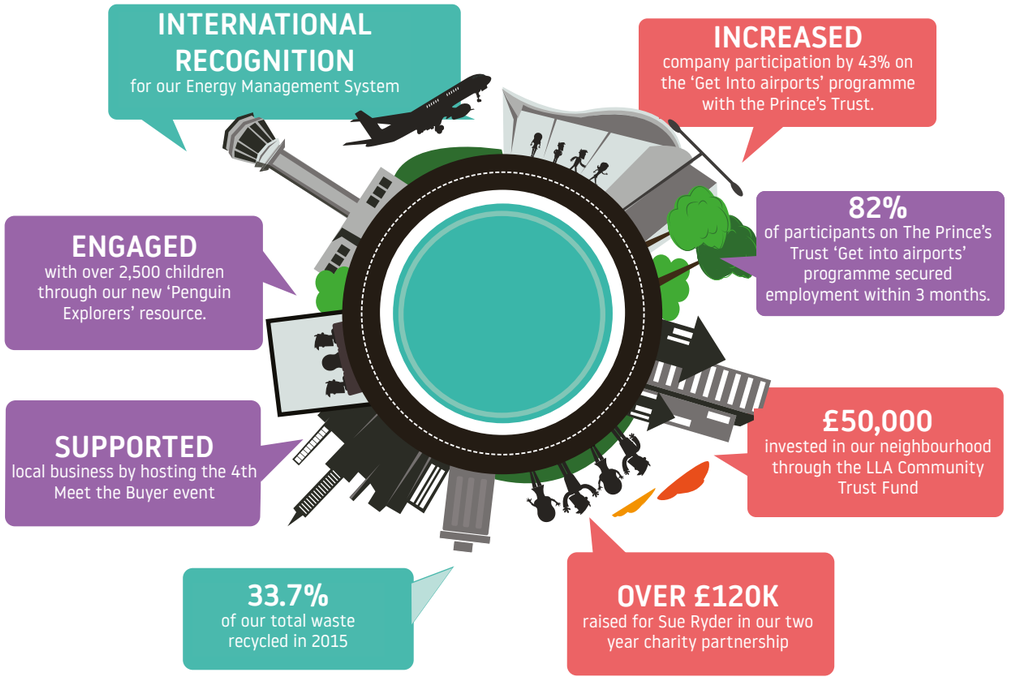
Through the London Luton Airport Consultative Committee (LLACC), which meets each quarter, London Luton airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the airport Consultative Committee including meeting minutes and its representatives can be found at the following link: http://www.llacc.com/

In 2015, members of the airport also went out into the community in the form of Public Surgeries. These allow local residents to approach the members of the airport team directly with aircraft concerns. The Flight Operations team is then able to explain the operations and the airport's actions in reducing the disturbance for our local communities on a one-to-one basis. In 2015, Public Surgeries were held in Redbourn, Markyate, Pepperstock and Kensworth. These will continue to be scheduled in 2016.

Our five year Community Relations Strategy forms part of LLA's corporate social responsibility programme and sets out how we will facilitate community development and meet the needs of key stakeholders. Initiatives are delivered by the airport in collaboration with key community partners. In 2015 we made nine commitments to ensure that we continued to play a positive role in our local community. The following figure summarises the progress made towards these commitments during the year.

We achieved 8 out of 9 of these commitments with one requiring more work. Due to a change in the waste disposal service provider and significantly increased passenger numbers, the airport has not reached its desired target of 45% of total waste being recycled.

Community engagement strategy achievements



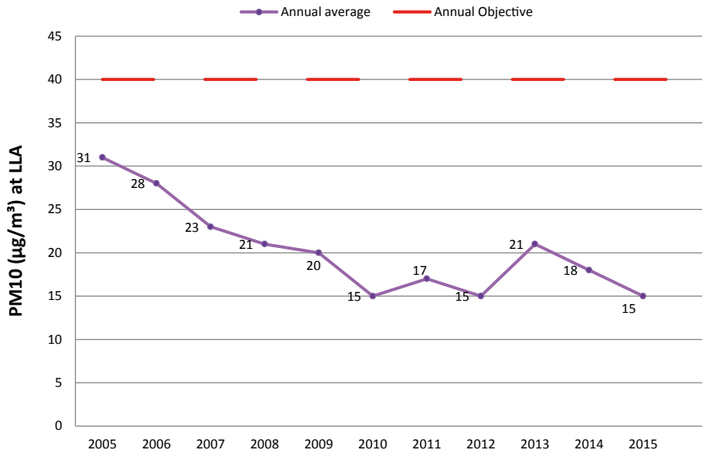
Air Quality

London Luton airport has been monitoring air quality in and around the airport environment since 2003. Air quality data collected at LLA is integrated into a monitoring programme incorporating data collected by the surrounding Local Authorities, with a monthly report available to view online at www.ukairquality.net The parameters we measure are PM_{10} and NO_2.

PM_{10} (Particulates measuring 10µm or less)

PM_{10} is one of the main contributors to reduced ambient air quality. Particulate matter is made of fine particles including dust and soot which are suspended in the air. When you breathe in these particles they can stick to the surface of your lungs, and in areas of high pollution can cause respiratory health problems. Local sources include emissions from vehicles and aircraft engines, wear of brakes, tyres, and construction debris.

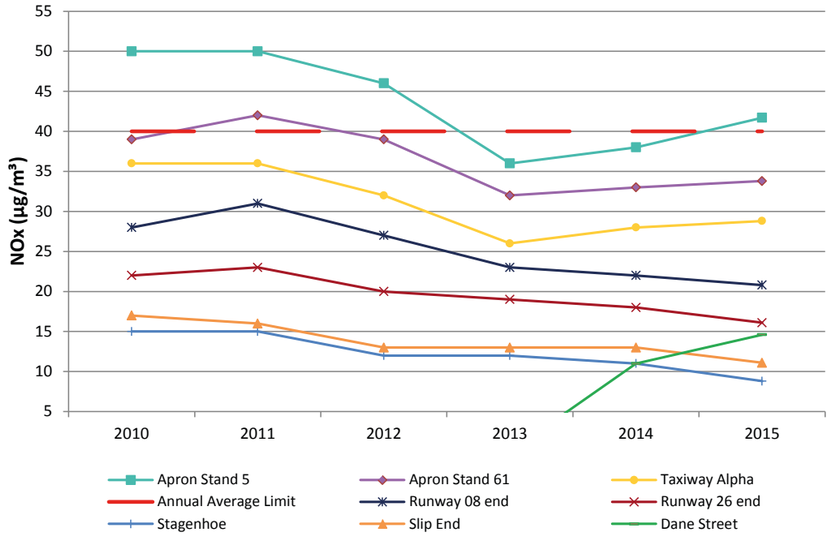
PM_{10} is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³, and are decreasing over time. There were no pollution occurrences exceeding the daily mean of 50 µg/m³ during the year.



Nitrogen Dioxide (NO_2)

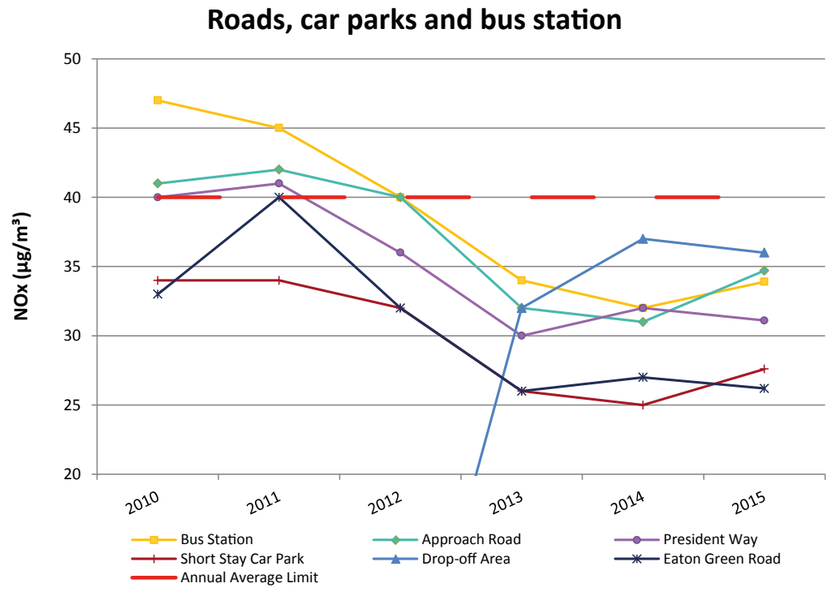
NO_2 in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO_2 is currently measured from 14 locations around LLA, and the results have a bias-adjustment factor applied using national database factors. The annual mean local air quality objective of 40µg/m³ also applies to NO_2.

Airport apron, runway and under the flight paths



NO_2 levels at the closest residential receptors to the airport, and also along the aircraft flight paths are significantly below the the objective level laid out in the Air Quality (England) Regulations 2000 (as amended). Levels monitored by the roads around the airport, in the car parks and on the apron are a little higher, with one location on the main apron slightly exceeding 40 µg/m³. A project is underway to standardise equipment on the apron which will help reduce pollution levels.

Roads, car parks and bus station



Surface Access

LLA aims to improve access to London Luton airport, particularly by public transport in order to reduce the contribution that journeys make to total airport-related CO2 emissions and also to air pollution. LLA's current airport Surface Access Strategy runs from 2012-2017, with short and long term targets and action plans to encourage more sustainable travel amongst airport passengers and employees. These targets are being monitored regularly, as part of the wider Local Transport Plan (LTP) monitoring framework.

Modes of Transport

Passengers transport mode share (CAA Data)

The Civil Aviation Authority (CAA) undertakes continual passenger surveys at many of the major airports in the UK, including London Luton. In common with other airports, LLA uses this survey data to assess trends in passenger 'modal shift' from private to public transport. The table shows the weighted CAA data for 2010-2014. The CAA statistics suggest that 29% of airport passengers chose to use public transport in 2014. LLA aims to achieve 40% by 2017, and has has invested in improvements to the bus station in 2015, increasing the number of stands from 11 to 18. Plans for a new passenger transit system from Luton airport Parkway to the airport terminal are also being developed.

%	2010	2011	2012	2013	2014
Private Car - Drop Off	27	27	27	28	25
Private Car - Park	24	23	23	23	28
Rail	17	15	17	16	14
Bus/Coach	15	16	16	16	15
Taxi	15	18	17	17	17

Staff transport mode share

LLA aims to reduce the proportion of staff travelling alone by car to and from London Luton airport to 60% or lower by 2017. Whilst employee travel does not generate as many trips as passengers, it is as important consideration as employees making a more sustainable travel choice will give daily results due to the frequency of their need to commute to work. Staff travel surveys are undertaken once every 2 years, and the results since 2010 are presented in the table below.

%	2008	2010	2012	2014
Drive alone	72	66	66	62
Car share	10	12	8	11
Taxi	2	1	1	0
Motorcycle	1	1	1	1
Rail	5	5	5	10
Bus/Coach	6	7	9	8
Cycle	1	2	2	2
Walk	3	5	6	7

Road Traffic and Car Parks

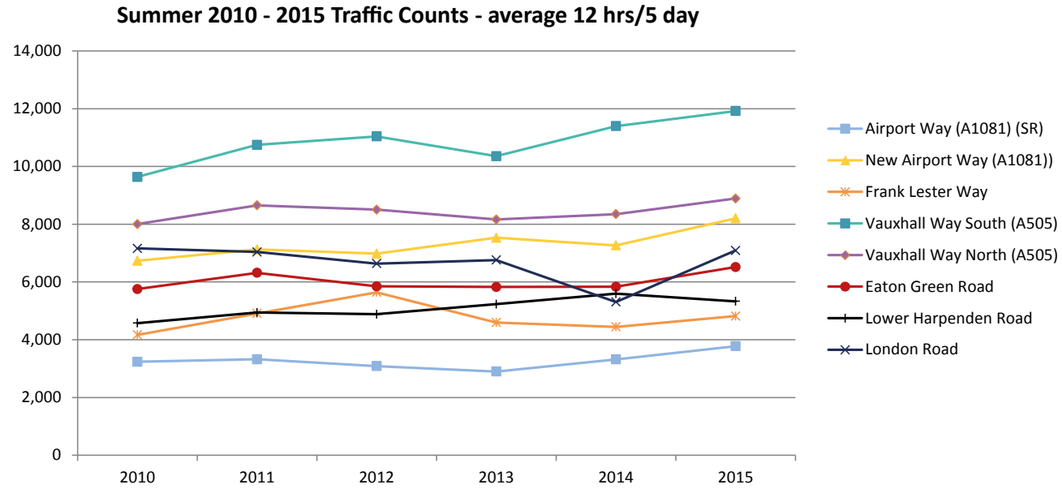
The information contained in this section is based on traffic counts conducted at 8 sites during the period 9th-28th September 2015. This period is comparable with previous summer traffic counts and avoids any periods when significant changes in traffic characteristics can occur. The flows on London Road, in comparing 2014 flows with those in previous years, appear to have been supressed as a result of the works at Junction 10a in 2014; similarly the flows on Lower Harpenden Road were higher during the works. As a result flow comparisons between 2014 and 2015 are not meaningful, and any comparisons in the remainder of this section are therefore made between 2013 and 2015 flows.

The table and graph below show an increase in 12hr/5day traffic flows between 2013 and 2015 on all of the 8 monitored roads, with the highest percentage increase being +30.3% on old airport Way (+878 vehicles) and the second highest +15.1% (+1,562 vehicles) on Vauxhall Way (south).

Summer 2010 - 2015 Traffic Counts (Average 12 hrs/5 day)

	Map ref	2010	2011	2012	2013	2014	2015
Airport Way (A1081) (SR)	599	3,237	3,323	3,088	2,897	3,319	3,775
New Airport Way (A1081))	925	6,735	7,127	6,979	7,532	7,268	8,204
Frank Lester Way	445	4,170	4,908	5,642	4,597	4,445	4,818
Sub-total		**14,142**	**15,358**	**15,709**	**15,026**	**15,032**	**16,797**

	Map ref	2010	2011	2012	2013	2014	2015
Vauxhall Way South (A505)	520	9,638	10,746	11,039	10,355	11,395	11,917
Vauxhall Way North (A505)	603	8,005	8,652	8,505	8,164	8,348	8,889
Eaton Green Road	677	5,755	6,317	5,849	5,826	5,835	6,517
Lower Harpenden Road	106	4,576	4,942	4,885	5,232	5,594	5,331
London Road	393	7,163	7,037	6,634	6,759	*5,307	7,090
Sub-total		**35,137**	**37,694**	**36,912**	**36,336**	**36,479**	**39,654**
Total		**49,279**	**53,052**	**52,621**	**51,362**	**51,511**	**56,451**



* - Site impacted by J10a works

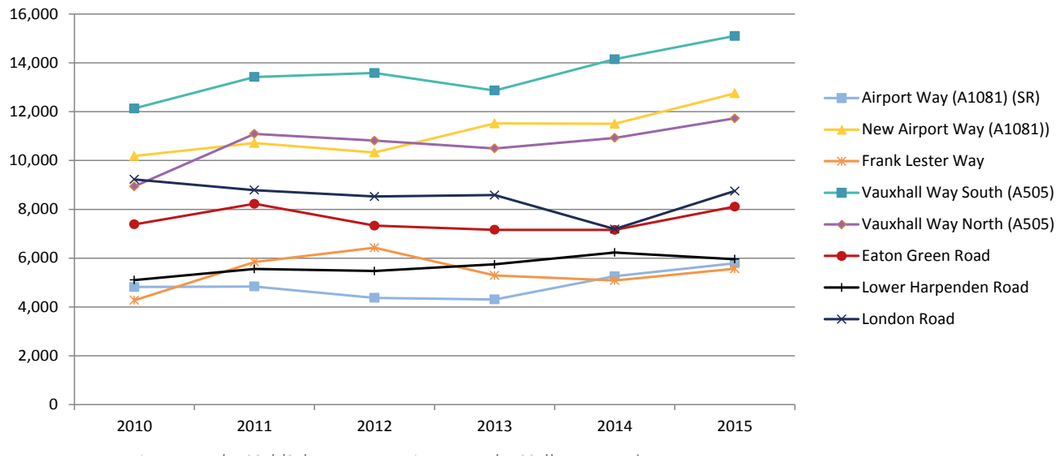
For the 24-hour week (24/7), the table and graph below reveal similar patterns to the 12hr/5day traffic counts. The highest increase in traffic is +34.4% on old airport Way (+1,482 vehicles) and the second highest is +17.4% (+2,236 vehicles) on Vauxhall Way (south).

Summer 2010 - 2015 Traffic Counts (Average 24 hrs/7 day)

	Map ref	2010	2011	2012	2013	2014	2015
airport Way (A1081) (SR)	599	4,818	4,840	4,374	4,309	5,256	5,791
New airport Way (A1081))	925	10,185	10,714	10,330	11,518	11,503	12,751
Frank Lester Way	445	4,275	5,842	6,426	5,289	5,086	5,564
Sub-total		**19,928**	**21,396**	**21,130**	**21,116**	**21,845**	**24,106**

	Map ref	2010	2011	2012	2013	2014	2015
Vauxhall Way South (A505)	520	12,131	13,421	13,582	12,865	14,146	15,101
Vauxhall Way North (A505)	603	8,939	11,093	10,813	10,496	10,924	11,726
Eaton Green Road	677	7,383	8,226	7,330	7,161	7,155	8,109
Lower Harpenden Road	106	5,104	5,555	5,475	5,746	6,232	5,959
London Road	393	9,225	8,788	8,523	8,582	*7,190	8,747
Sub-total		**42,782**	**47,083**	**45,723**	**44,850**	**45,647**	**49,642**
Total		**62,710**	**68,479**	**66,853**	**65,966**	**67,492**	**73,748**

Summer 2010 - 2015 Traffic Counts - average 12 hrs/7 day



A general conclusion in comparing the 2014 and 2015 data is that flows increased on all but one of the 8 monitored roads, with the greatest increases in flows (both absolute numbers and % change) being on London Road. The only monitored road where flows reduced over the same period was on the Lower Harpenden Road. However, as it has already been mentioned both London Road and Lower Harpenden Road traffic counts are not meaningful as a result of the works at Junction 10a in 2014.

The map overleaf indicaticates location of these observation points.

* - Site impacted by J10a works

Local Highway Network

Sustainability

LLAOL is committed to operating in a way that maximises the socio-economic benefits for the local and regional area whilst minimising the environmental impacts. To ensure this vision is shared and supported, we work closely with airlines, stakeholders and business partners to promote this approach across the airport, ensuring that the full benefits that London Luton Airport can bring to the region are realised.

LLAOL aims to continuously improve on environmental performance in many different areas across the Airport. In 2015 the following was achieved:

17%
The percentage of electricity usage per passenger to have been reduced by the airport in 2015

9% reduction
in Carbon emissions

34%
of waste was recycled

7% reduction
in Water usage

The airport maintened the ISO14001 international accreditation for Environmental Management System and the ISO50001 international accreditation for Energy Management.

Sustainable Travel Improvements during 2015

During 2015 construction works began to redevelop the road network, parking, taxi and drop-off facilities at the terminal entrance along with the bus station. Further information on these upgrades can be found under 'Planning and Development'.

Overnight rail services from Luton Airport Parkway begin at the end of 2015, making rail a viable transport option for 2-3 million more airport passengers per year. The shuttle buses from Luton Airport Parkway up to the airport terminal were also rebranded, and improved ticket machine facilities were installed.

A new bus service began running up to the airport in 2015, operated by Metroline. The 714 service runs from New Barnet, through London Colney, St Albans and Harpenden before travelling up to the airport.

Major improvements to Junction 10a of the M1 have recently been completed in conjunction with the Highways Agency and Luton Borough Council. These works have relieved congestion at this junction, providing seamless dual carriageway access from the M1 to the airport approach road.

A survey on issues relating to luggage on public transport to and from the airport was also undertaken in August 2015, with the results reported back to transport operators.

Planning and Development

Through the local transport plan, Luton Borough Council (LBC) set out the policies, strategies and schemes for Luton, Dunstable and the Houghton Regis area. The current Local Transport Plan (LTP3) for Luton covers the period 2011-2026 and can be accessed through LBC's website.

Airport planning and development

London Luton airport's planning consent for a £110m development was granted by Luton Borough Council in 2014. The ambitious project aims to greatly enhance the passenger experience with an extensive terminal upgrade, better road access, and a new multi-storey car park.

During 2015 enabling works were undertaken in preparation for the official commencement of re-development on the 1st January 2016. Two construction contractors were also appointed in 2015, these were Mclaughlin & Harvey and Whitemountain.

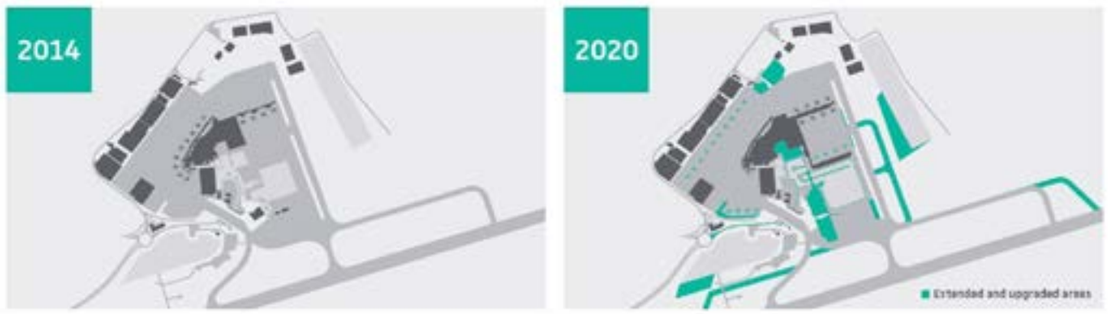
The redevelopment is currently on schedule with a number of key milestones already reached in 2015.

Security Search Area
In November 2015 the security search area was relocated to a larger space on the ground floor along with the introduction of new equipment which has helped speed up security checks. The area will be expanded further in future to increase the number of security lanes.

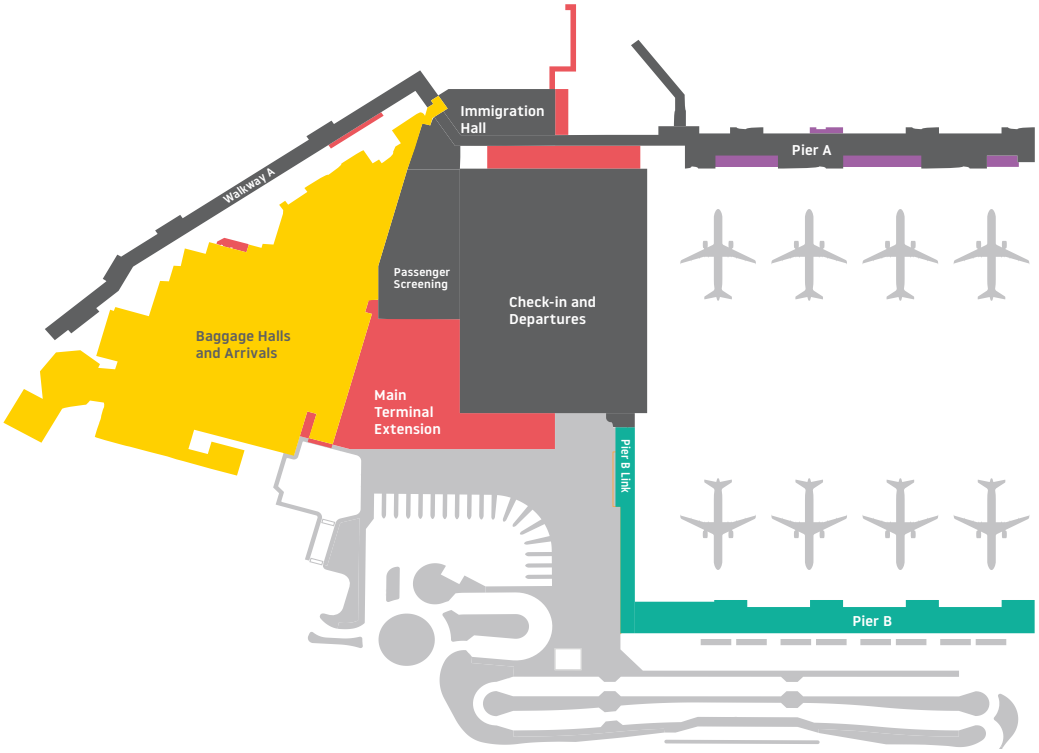
Temporary Arrivals
The arrivals hall moved to its temporary location in 2015, this has enabled terminal works to commence inside the terminal area and the security hall to be moved in to it's place.

Bus Interchange
2015 saw the opening of the new bus interchange area, this now offers more routes and increased frequency of the bus routes.

Below are two maps showing the extent of the works.



The following two maps show the timescales and description of the works both airside and landside.



Main Terminal Extension

Start Date: January 2016
Completion Date: June 2017

Pier A Extensions

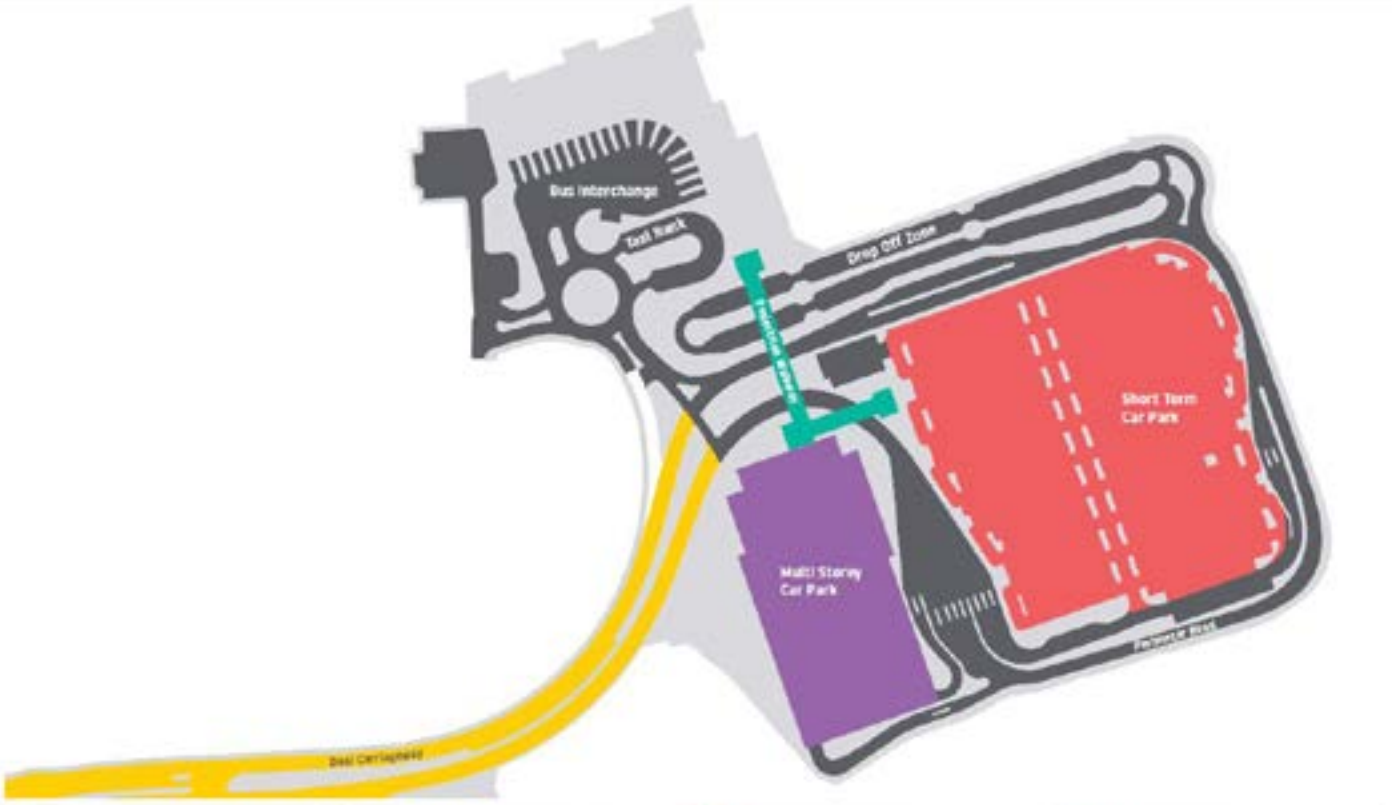
Start Date: April 2016
Completion Date: October 2016

New Pier

Start Date: March 2016
Completion Date: End of 2017

Baggage Reclaim

Start Date: April 2017
Completion Date: End of 2017



Short Term Car Park

Start Date: July 2015
Completion Date: October 2016

Multi Storey Car Park

Start Date: January 2016
Completion Date: July 2016

Pedestrian Walkway

Start Date: November 2015
Completion Date: July 2016

Dual Carriageway

Start Date: January 2016
Completion Date: September 2016