

Annual Monitoring Report **2016**



London
Luton
Airport



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Foreword

2016 was a record year for London Luton Airport (LLA). 14.5million passengers chose to travel with us, making it our busiest year on record.

Demand for air travel across the UK is increasing rapidly. Moreover, the airspace over our local region is among the busiest in the world: over 4,000 flights a day operating in and out of London airspace, which means we cannot act alone to change flightpaths to and from LLA.



In response to increased demand, we are making the biggest investment in our history to transform the airport. The redevelopment of our terminal will bring huge benefits for passengers, but it is vitally important to us that the local community also shares in the success of the airport.

At LLA, our aim is always to work constructively with the local community and our partners to strike the right balance between maximising the positive social and economic benefits of a successful airport to the local area and the UK as a whole while minimising the impact of aircraft noise.

The economic benefits of the airport are easy to quantify.

Once the current development is complete, LLA will contribute £1.4billion per year to the local economy and £2.3billion nationally. It will support over 37,700 jobs, which on average pay £11,000 per year more than the national average wage. Residents of the Three Counties took more than 4.5 million flights from LLA last year, equivalent to 2.3 trips per person.

But we recognise that the airport's growth may give rise to questions about noise levels.

LLA already operates under the most stringent noise restrictions of any major UK airport. But we are continually looking to do more. As the airport continues its growth and development, we are evolving our approach to noise management. We are committed to:

1. Inviting and listening to feedback

We hold regular noise surgeries and are available to listen to your concerns 365 days per year.

2. Acting on the feedback we receive

Whether it is introducing new mitigation initiatives, buying new noise monitors or simplifying our complaints system, we act on your feedback.

3. Communicate transparently

We update the community with quarterly monitoring reports, through our consultative committee and a new monthly email newsletter: 'Inform'.

4. Input into national policy-making

Airspace changes depend on national policies. LLA will make sure your views are heard in national consultations.

This Annual Noise Monitoring Report is one example of how we put those principles into action. We hope it answers some of the questions you may have over the impact of the airport's transformation.

If you have any further queries please don't hesitate to contact the team by calling 01582 395382 or emailing noise@ltn.aero.

Neil Thompson

*Operations Director
London Luton airport*

A handwritten signature in black ink, appearing to read 'N. Thompson'.

Key Monitoring Indicators

Parameter		2016	2015
Total Aircraft Movements	↑	131,435	116,412
Day Movements (07:00 - 23:00)	↑	116,686	103,220
Night Movements (23.00 – 07.00)	↑	14,749	13,192
Early Morning Movements (06.00 – 07.00)	↑	5,161	4,778
Total Scheduled Passengers	↑	14,092,180	11,807,292
Total Charter Passengers	↓	459,657	471,893
Total Passengers	↑	14,551,837	12,279,185
Number of Destinations	↑	135	118
Number of New Airlines	-	4	4
Number of New Routes	↑	23	20
Westerly/Easterly Runway Split (%)	-	70/30	72/28
Night Quota Used (3,500 Limit)	↑	2,663.75	2,480
Average Ratio of Aircraft movements % (day/night)	-	89/11	89/11
Track Violations (covers period Apr-Dec 15)	↑	91	62*
Departure Noise Infringements (Day)*	↑	21	15
Departure Noise Infringements (Night)*	↓	3	9
Fines transferred into Community Trust Fund	↑	£75,700	£52,000
24hr Continuous Decent Approach (% achievement)	↑	90%	87%
No. Departures Recorded at ≥ 85 dB(A) during Day (Night)	-	8 (1)	13 (0)
No. Departures Recorded at ≥ 76 dB(A) during Day (Night)	-	6,379 (943)	7,871 (1,209)
No. Departures Recorded at ≥ 70 dB(A) during Day (Night)	-	42,667 (4,511)	36,879 (4,266)
Night Noise Contour Area (48 dB L _{Aeq, 8h})	↑	36.5km ²	35.3km ²
Population within Night Noise Contour (48 dB L _{Aeq, 8h})	↑	16,105	14,681
Dwellings within Night Noise Contour (48 dB L _{Aeq, 8h})	↑	6,767	5,539
Noise Complaints	↑	3,612	960
Complainants	↑	814	355
Number of New Complainants	↑	525	158
Largest Source of Complaints	-	Deps. West	Deps. West
Number of PM ₁₀ exceedances	-	0	0

*Please note that the data shown for noise infringements in 2015, includes those that recieved a violation between January-March 2015, when the noise limits were greater. New lower noise limits were put in place in April 2015.

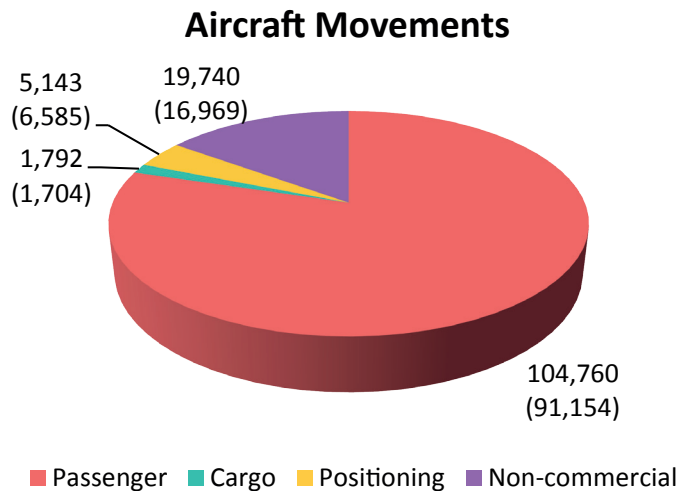
Air Traffic Data

Aircraft movements

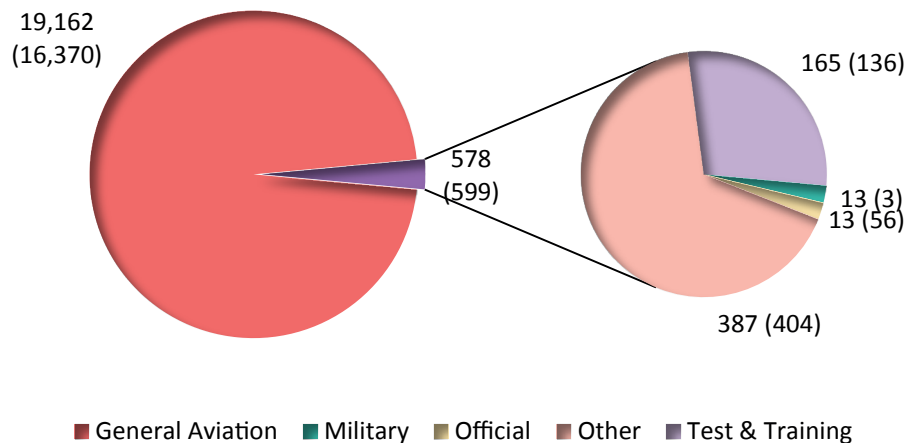
LLA handled a total of 131,435 aircraft movements during 2016, an increase of 13% compared to 2015. An aircraft movement is the take-off or landing of any aircraft from the airport.

The majority of aircraft movements were passenger flights at 104,760 movements. This includes commercial flights by executive aircraft (compared with 91,154 in 2015). Other movements included cargo, positioning flights and non-commercial flights.

For comparison purposes 2015 data is shown in brackets.



Non-Commercial Aircraft Movements



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

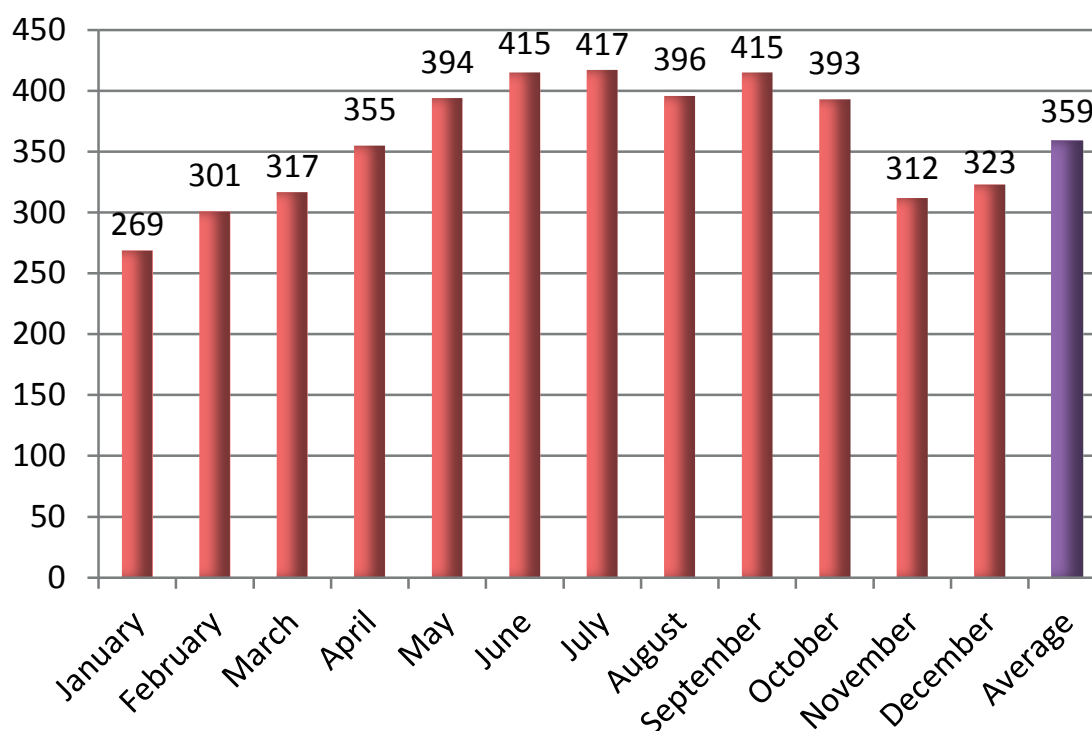
Official – flights solely for official purposes by British or foreign civil government departments

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

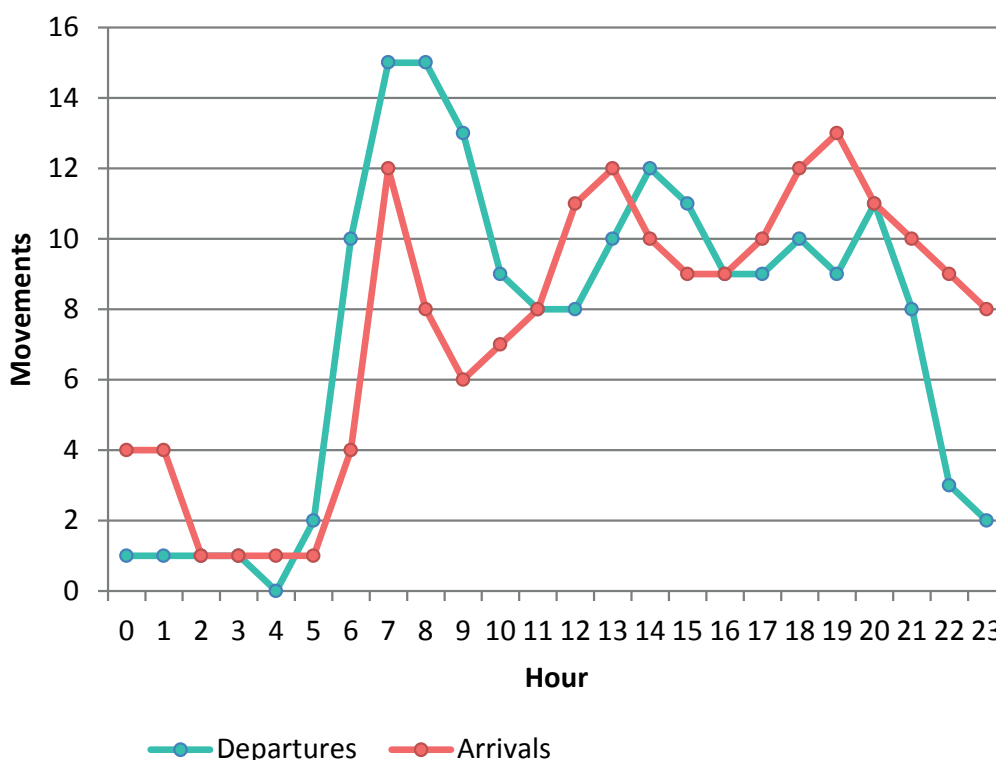
The graph below illustrates that the busiest time of year is May - October, with over 390 flights per day. **Our busiest day of the year was September 9th with 463 aircraft movements.** In comparison, winter months are the quietest, with just over 300 flights per day. On average there were 359 movements per 24 hours (compared to 319 in 2015).

Annual Average Daily Movements



The busiest time on average during 2016 for departing aircraft was 06:00-09:00 hrs, with another peak between 13:00-15:00. The average busiest time for arrivals was 07:00-08:00 and 12:00-14:00 hrs. The graph also highlights a low level of average movements during the hours of 00:00-05:00 hrs.

Annual Average Hourly Movements



Passenger data

Scheduled	Charter	Totals
<ul style="list-style-type: none"> • 14,092,180 passengers • 19% increase compared with 2015 • 147 average passengers per flight 	<ul style="list-style-type: none"> • 459,657 passengers • 2.5% decrease compared with 2015 • 180 average passengers per flight 	<ul style="list-style-type: none"> • 14,551,837 passengers • 18.5% increase compared with 2015 • Total 148 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 14,551,837 passengers were handled at LLA during 2016; 14,092,180 on scheduled flights (97%) and 459,657 on charter flights (3%). This represents an increase in passengers of 18.5% compared with 2015.

Domestic	EU	Non-EU	Totals
<ul style="list-style-type: none"> • 1,041,862 passengers • 9% increase compared with 2015 	<ul style="list-style-type: none"> • 9,769,176 passengers • 19% increase compared with 2015 	<ul style="list-style-type: none"> • 3,740,799 passengers • 17.5% increase compared with 2015 	<ul style="list-style-type: none"> • 14,551,837 passengers • 18.5% increase compared with 2015



Cargo

Cargo operations represent just under 2% of all air transport movements at London Luton Airport. Night movements accounted for 70% of total cargo movements. These were primarily 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
2016	648	1,515	2,163	25,788
2015	739	1,279	2,018	28,041
2016/2015 comparison	-12%	+18%	+7%	-8%

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 3% of 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.

25,788

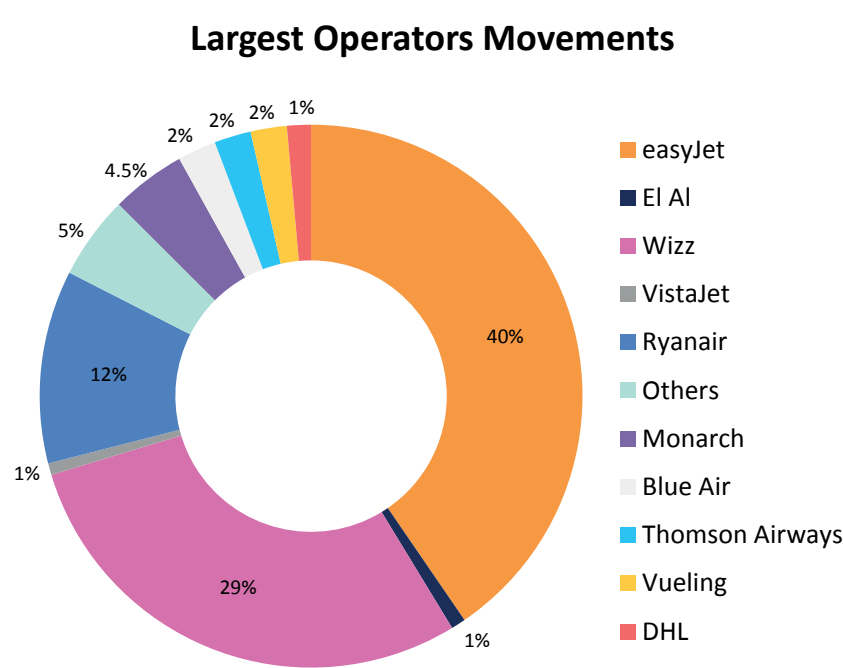
tonnes of cargo was carried on 2,163 passenger and cargo aircraft.



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	41,625
Wizz	29,868
Ryanair	11,846
Monarch	4,587
Blue Air	2,364
Thomson Airways	2,252
Vueling	2,219
DHL	1,469
El Al	888
VistaJet	715
Others	5,150
TOTAL	102,938



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 (99,640 movements)	Airbus A320 & A320 sharklets ¹ (easyJet, Wizz Air, Monarch)	45,281	34.5%
	Airbus A319 (easyJet)	28,000	21.3%
	Boeing B737-800 winglets ¹ (Ryanair, Thomson, Blue Air, El Al)	15,437	11.7%
	Airbus A321 & A321 sharklets ¹ (Wizz Air, Monarch)	6,673	5.1%
	Boeing B737-400 (Blue Air)	1,340	1.0%
	Boeing B757 & B767 family (Thomson, El Al)	1,280	1.0%
	MCD Douglas MD-82/87	54	0%
	Other Passenger Aircraft	1,575	1.2%
Cargo (2,189 movements)	Airbus A300-600 (A306) (DHL, MNG Cargo)	1,134	0.9%
	BAe ATP (West Atlantic)	476	0.4%
	Boeing B737-300 & B737-400 (DHL)	154	0.1%
	Boeing B757-200 (DHL)	390	0.3%
	Other Cargo Aircraft	35	0%
General Aviation (29,033 movements)	Gulfstream 5 and 500 series GLF5	2,277	1.7%
	Canadair Global Express GLEX	3,806	2.9%
	Cessna Citation Excel C56X	2,896	2.2%
	Canadair Challenger CL60	1,483	1.1%
	Gulfstream 3, 4, & 400 series GLF3/GLF4	1,735	1.3%
	Gulfstream 650 GLF6	1,042	0.8%
	Embraer Legacy 600 E135	1,720	1.3%
	Canadair Challenger CL30	997	0.8%
	Cessna Citation Jet C525	1,351	1.0%
	Dassault Falcon FA7X	871	0.7%
	Other Private Aircraft	10,855	8.3%
	Helicopter	573	0.4%
	TOTAL	131,435	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 Airport has seen thirty three months of consecutive passenger growth (correct as of January 2017) making 2016 the busiest year ever in the airport's history. This significant growth comprised of increased capacity and new routes with established airlines and the arrival of four new airlines Vueling, Transavia France, Adria Airways and Fly Kiss.

The map below shows the destinations flown/on sale to and from London Luton in 2016. Our airlines fly to 135 destinations across 35 different countries.



New Routes 2016

Destination	Launch	Airline
Turin, Italy	10-Dec-16	easyJet
Brest, France	7-Nov-16	flyKiss
Clermont Ferrand, France	7-Nov-16	flyKiss
Satu Mare, Romania	31-Oct-16	Wizz Air
Tuzla, Bosnia	30-Oct-16	Wizz Air
Tenerife, Spain	20-Sep-16	easyJet
Toulouse, France	19-Sep-16	easyJet
Lanzarote, Spain	19-Sep-16	easyJet
Suceava, Romania	19-Aug-16	Wizz Air
Zurich, Switzerland	1-Aug-16	Vueling
San Sebastian, Spain	26-Jul-16	Air Nostrum
Pristina, Kosovo	19-Jun-15	Adria Airways

Destination	Launch	Airline
Olsztyn-Mazury, Poland	18-Jun-16	Wizz Air
Dubrovnik, Croatia	24-May-16	easyJet
Larnaca, Cyprus	24-Apr-16	Blue Air
Paris Orly, France	22-Apr-16	Transavia
Vilnius, Lithuania	2-Apr-16	Ryanair
Kaunas, Lithuania	29-Mar-16	Wizz Air
Turin, Italy	27-Mar-16	Blue Air
Jersey, UK	27-Mar-16	easyJet
Palanga, Lithuania	23-Mar-16	Wizz Air
Amsterdam, Netherlands	18-Mar-16	Vueling
Barcelona, Spain	17-Mar-16	Vueling

Routes Ending 2016

Whilst there were 23 new routes launched from LLA in 2016, four have ended; these include Istanbul, New York, Ercan and Waterford.

More information about our destinations can be found on the airport's website:

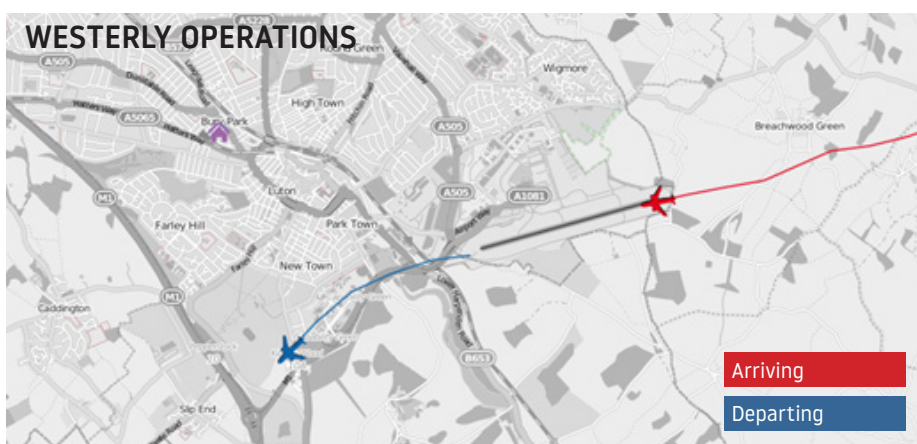
<http://www.london-luton.co.uk/inside-lla/destination-map>

Runway usage

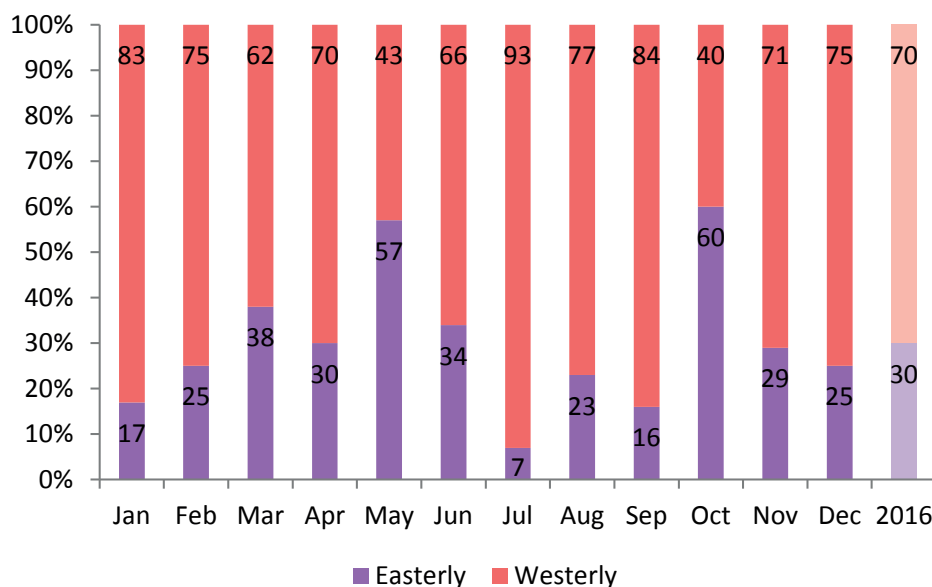
Aircraft need to land and take off into the wind and therefore the prevailing wind direction determines the direction of airfield operation. South westerly and westerly winds prevail for much of the year, typically around 70 per cent of the time.

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 unusually prolonged spells of westerly operations over the summer and increased levels of easterly operations over the winter and spring months of 2016.



Runway Usage



Year	Easterly	Westerly
2016	30%	70%
2015	28%	72%
2014	32%	68%
2013	36%	64%
2012	27%	73%
Average	31%	69%

The runway split during 2016 was 30% easterly and 70% westerly (compared to 28% / 72% in 2015). A breakdown of runway usage over the last five years is also shown in the table, giving a historical split of 31% easterly and 69% westerly.

Night Flights

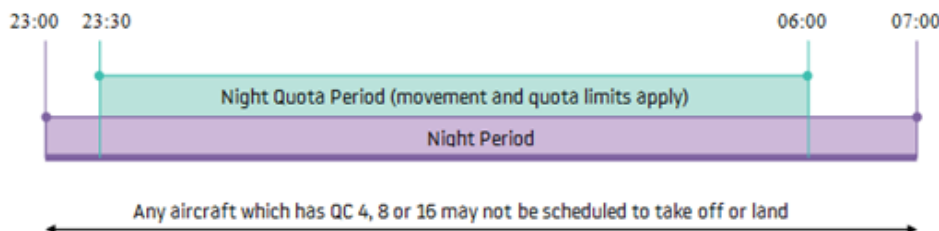


Night Flying Restrictions

As from 1st April 2015 London Luton Airport introduced new night restrictions as part of the planning conditions imposed by Luton Borough Council.

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



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 3,500.

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, A332	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 86.9	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 2016	360	133.25	250
Feb 2016	366	151.75	259
Mar 2016	396	166.50	313
Apr 2016	576	201.75	509
May 2016	745	250.75	544
Jun 2016	940	301.00	485
Jul 2016	931	309.50	556
Aug 2016	834	293.75	539
Sep 2016	801	267.00	576
Oct 2016	746	253.25	525
Nov 2016	388	156.25	296
Dec 2016	420	179.00	309
Total for preceding 12 months	7,503	2,663.75	5,161

There were no night time aircraft movements with a QC value of greater than 2 in 2016. Of the 129 QC 2 aircraft movements in 2016, 111 were departures by Airbus A300-600 aircraft.

Marginally Compliant Chapter 3 aircraft

Taking the year as a whole, of the 130,044 movements where Chapter 3 categorisation is applicable, only 52 are known to be marginally compliant. These movements were all by a single aircraft, a Boeing 737-200. A further 37 aircraft movements were by aircraft with unknown classification. These comprised 9 different aircraft; three Antonov 12s, a Boeing 767-200, three Boeing 767-300s, a Dassault Falcon 20, and a Gulfstream 3.



Day/Night ratio of movements

There were 14,749 night movements during 2016 (compared to 13,192 in 2015, an increase of 12%), an average of 40 movements per night (compared to 36 last year). Arriving aircraft accounted for 57%

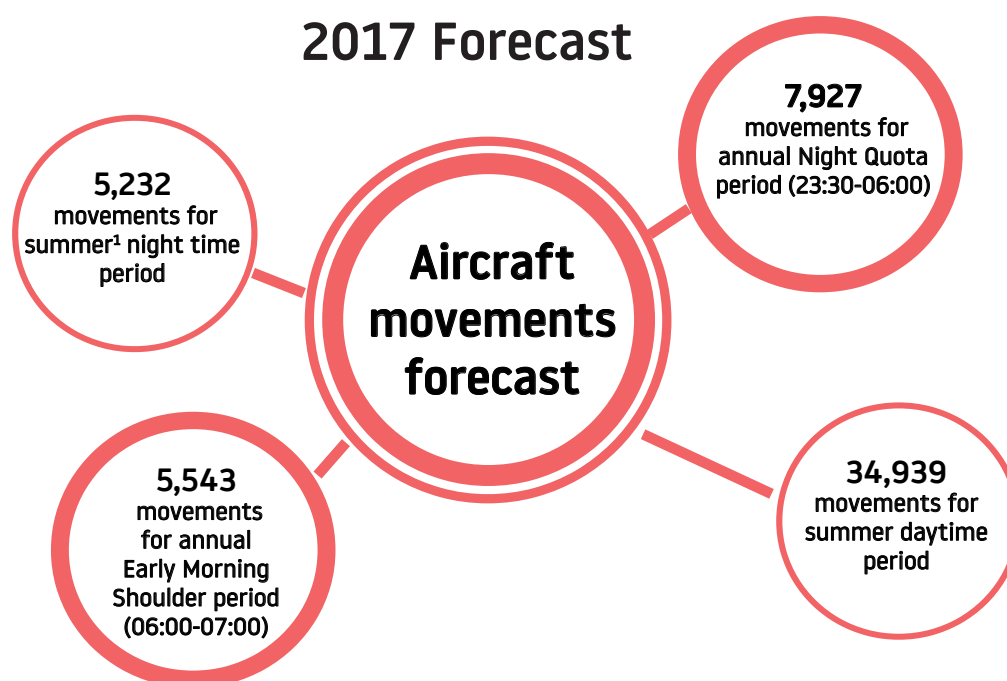
of total night movements, relating primarily to the last rotation of Luton based passenger aircraft scheduled to land back at the airport at night, between 23:00 hrs and midnight. 60% of total night

departures took off between 0600 - 0700 in the morning.

The average ratio of total aircraft movements during 2016 was 89% day / 11% night (in line with 89% day / 11% night in 2015).

2016	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	59,446	2,066	3,789	6,272
Arrivals	57,240	5,437	1,372	8,477
TOTAL	116,686	7,503	5,161	14,749

The figure below shows forecast aircraft movements for 2017, separated into daytime and night time periods.



¹ - Summer time covers period from 16th June until 15th September

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, and they are designed to avoid flying over built-up areas wherever possible.

There are four Standard Instrument Departure (SID) routes for each runway – OLNEY, COMPTON, MATCH and DETLING.

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.

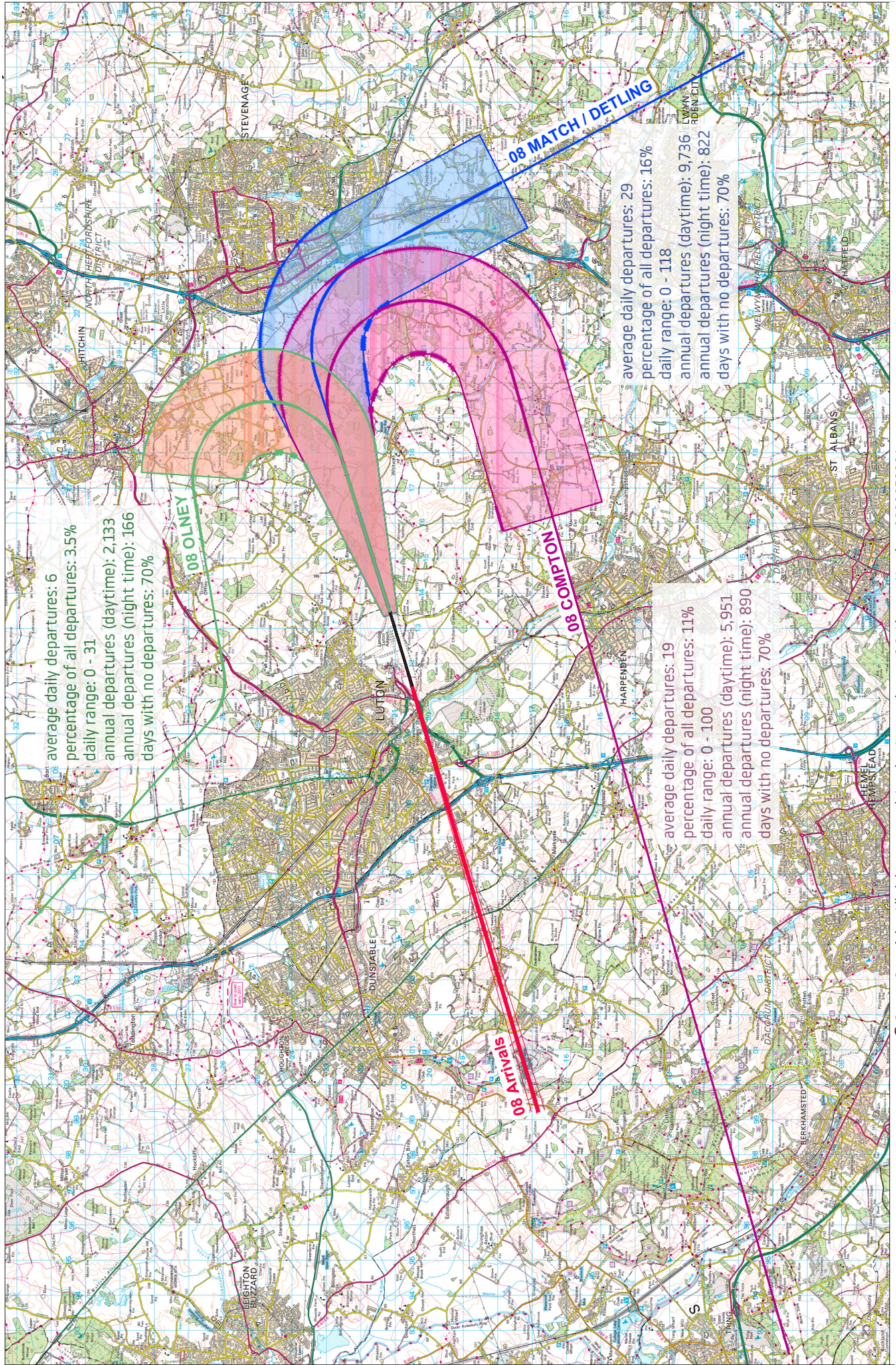
In the UK, the obligations of Noise Preferential Routings for aircraft following conventional SIDs cease when a height of 3,000ft (between 07:00hrs to 23:00hrs local time) and 4,000ft (during night time, 23:00hrs to 07:00hrs local time) has been reached. The obligations of the RNAV NPR ceases when a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

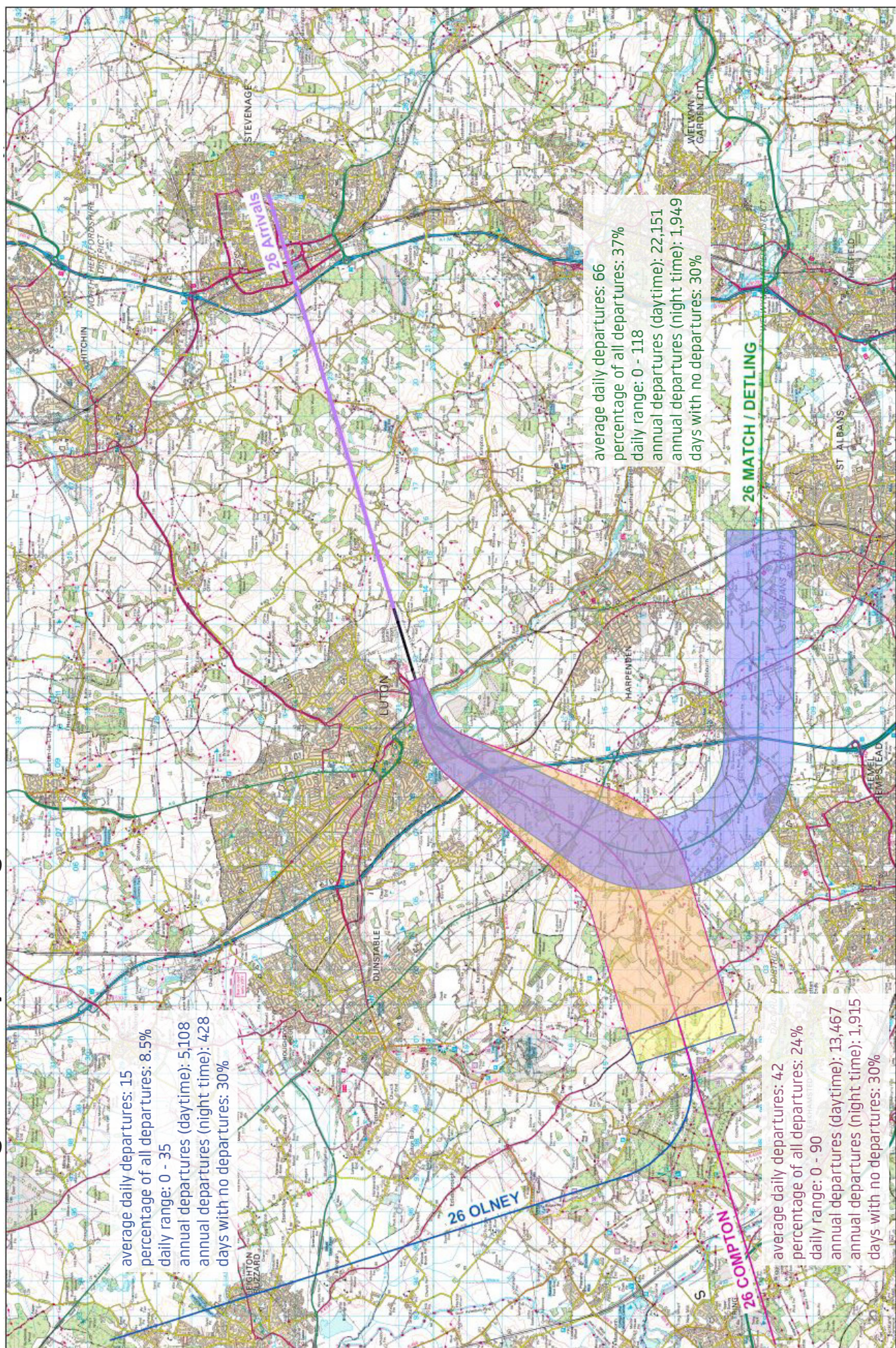
Two maps overleaf show indicative flight routes for westerly and easterly operations at London Luton Airport with detailed information about each departure route.



Plan showing Easterly (08) flight routes



Plan showing Westerly (26) flight routes



On Track performance

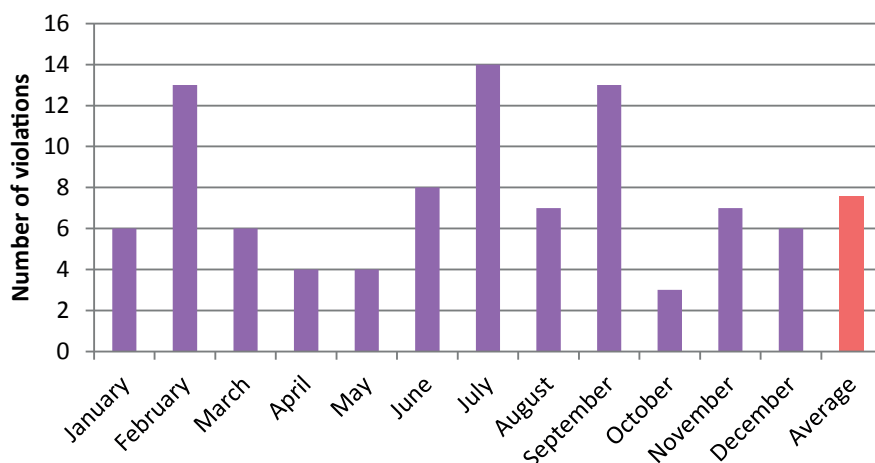
On the 1st April 2015 London Luton Airport implemented a Track Violation Penalty System as part of the noise related planning conditions. Using the airport's Aircraft Noise and Track Monitoring System, the Flight Operations Team evaluates the radar tracks and investigates them with required input from Air Traffic Control (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. This money is transferred to our Community Trust Fund which awards grants to community projects.

As always, safety is paramount 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 by month in 2016. The track keeping performance was 99.6%. This calculation includes deviations for weather, traffic avoidance and those identified as violations.

Off Track Violations



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

A/C Type	No Violations
GLF6	11
CLF4	6
GL5T	5
C25A, C56X, CL30, CL60, F2TH	20
ATP, A320, GLEX	9
A321, C550, E55P, FA7X, GLF5, LJ55, MD82	14
A333, B732, B734, B737, B738, B752, B753, B763, BE40, C500, C510, C525, C560, C650, C680, CRJ2, E35L, E50P, F50, F900, G280, GALX, H25B, LJ31, PC12, SW4	26
TOTAL	91



£75,700, 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 Team 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, there were some track adherence issues with a small number of aircraft types, which resulted in some aircraft flying further south before turning over Hemel Hempstead and others cutting the corner of the route and flying directly over Flamstead. Until we could understand the full issue at hand, these operators were stopped from using RNAV route and reverted to the conventional route until the technical issues have been resolved.

In collaboration with the operators and aircraft manufacturers, LLA found a possible solution to the issue. The RNAV flight procedure a slight amendment and validation before being submitted to the CAA for approval, and implementation. The solution has been tested to ensure that it would work for all operators and not have any negative effect on those already using the RNAV procedure. The proposal was submitted to the CAA in July 2016 and notification of approval was received in October 2016. The amended procedure will be implemented in February 2017.

The final step of the Airspace Change Process is the Post-Implementation Review (PIR). This is usually conducted by the CAA twelve months after implementation; however, as there were only 85% of aircraft using the route in 2016 and implementation of the amended procedure is scheduled for February 2017, the review was delayed. CAA will confirm timescales and a list of PIR requirements in 2017.

Next Steps in Airspace Change

Aircraft currently departing on the 26 Match/Detling route, have a number of altitude constraints due to the interaction with other neighbouring airport flight paths, London Luton Airport is planning to explore the opportunities to remove these constraints when safe and possible to do so.

LLA is still exploring options for the Required Navigation Performance (RNP) route design; the location of RNP route needs to be carefully considered and LLA will be exploring the options of RNP in conjunction with increasing the altitude of aircraft. Investigations with NATS are ongoing to understand what steps need to be taken in order to achieve this.

Following this work, the next step within our programme would be to adopt new modernised procedures on the remainder of our departure routes and also our arrival routes.

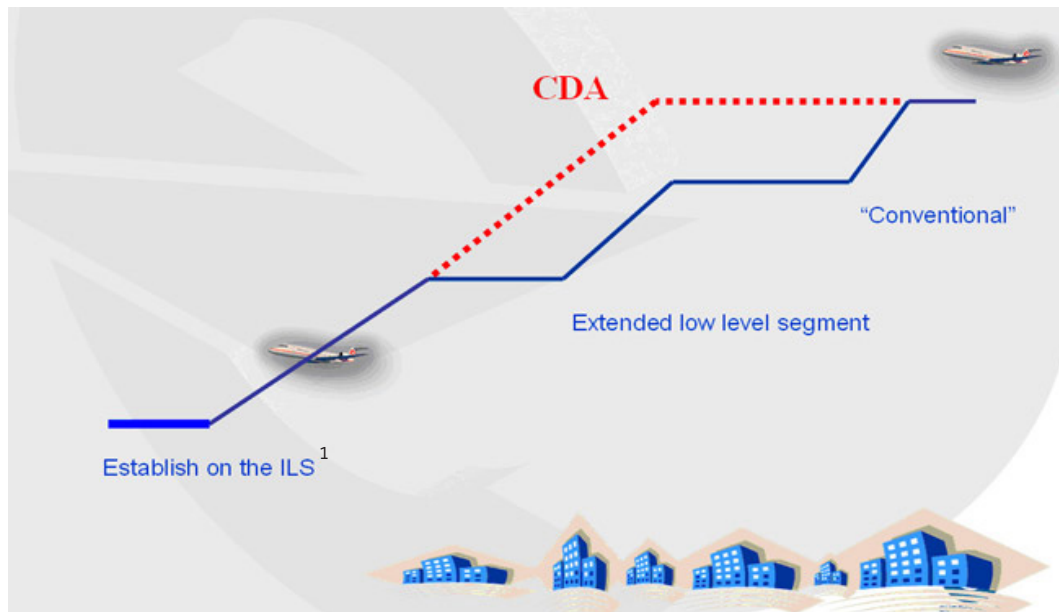
The Sky's the Limit

The London airspace is a particularly busy area and requires modernisation. The current airspace has not changed in the last 50 years despite the increase in movements from all airports. It is critical that the industry and Government now work together to deliver modernisation. In 2016, an industry campaign 'The Sky's the Limit' was set up to call on the Government to prioritise its work on airspace, noise and support industry efforts to do so. London Luton Airport strongly supports this campaign.

More information and videos regarding The Sky's the Limit campaign are available on their website which can be accessed <http://theskysthelimit.aero/>

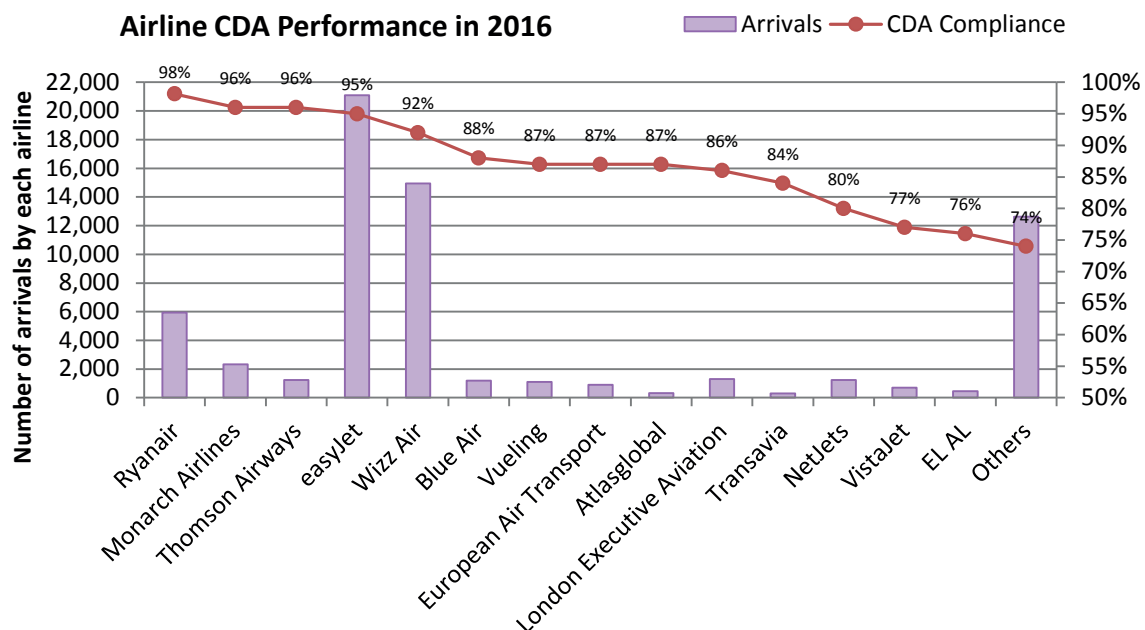
Arriving Aircraft

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 descends at a continuous rate to the runway threshold therefore reducing periods of prolonged level flight at lower altitudes. With CDA less fuel is burnt, less emissions are produced but most importantly it reduces the noise by avoiding the use of engine thrust required for level flight.

The overall CDA achievement was 90% with several major LLA operators achieving higher performance; easyJet, Wizz Air, 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 aid based on two radio beams which together provide lateral and vertical guidance to an aircraft approaching and landing on a runway.

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 2016. 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.

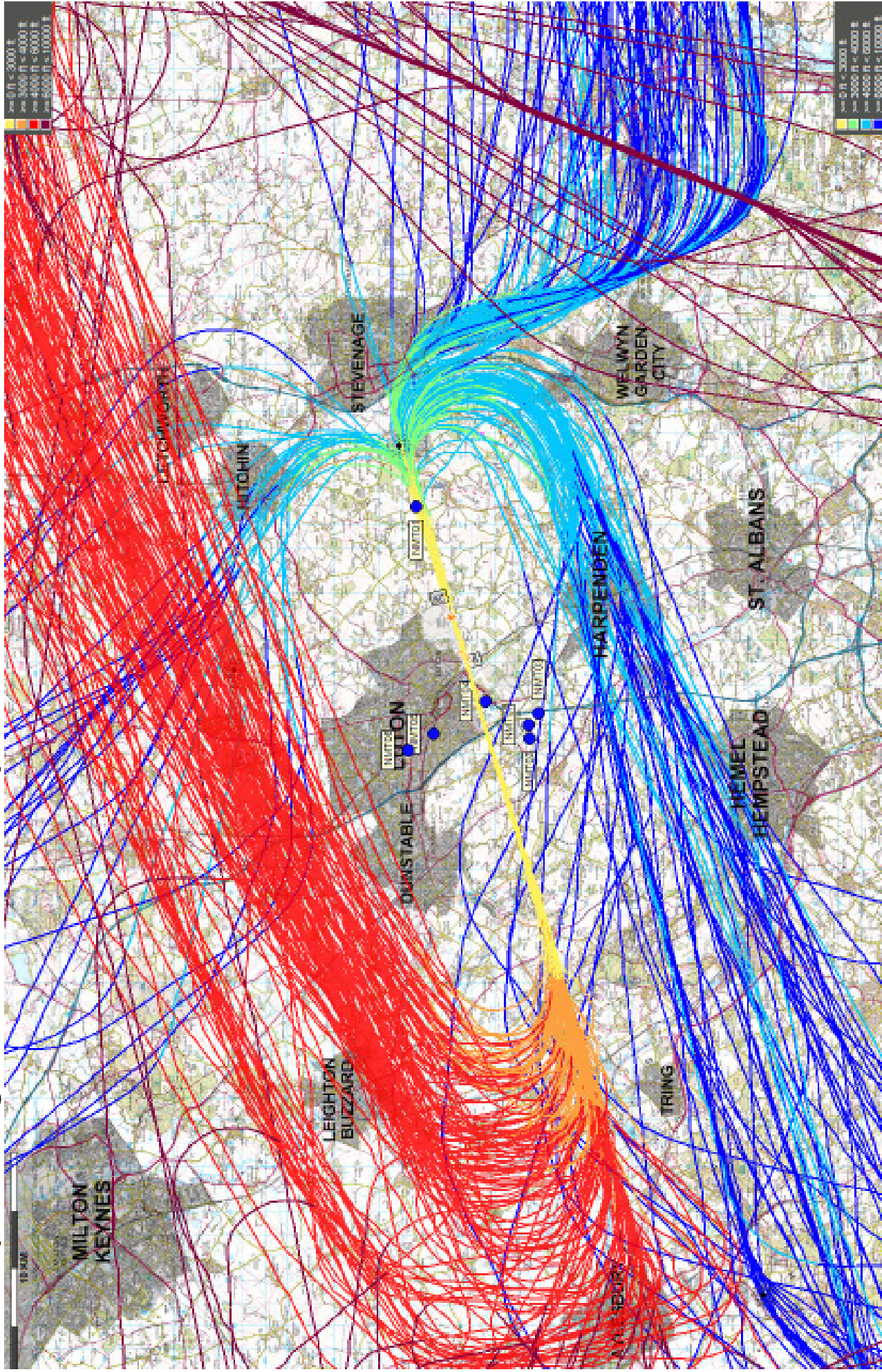
It should be noted that London Luton Airport's aircraft movements integrate with a traffic network travelling to and from other airports in the region, and the South East is one of the world's busiest sectors of airspace. However the following sample flight tracks only include operations for London Luton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



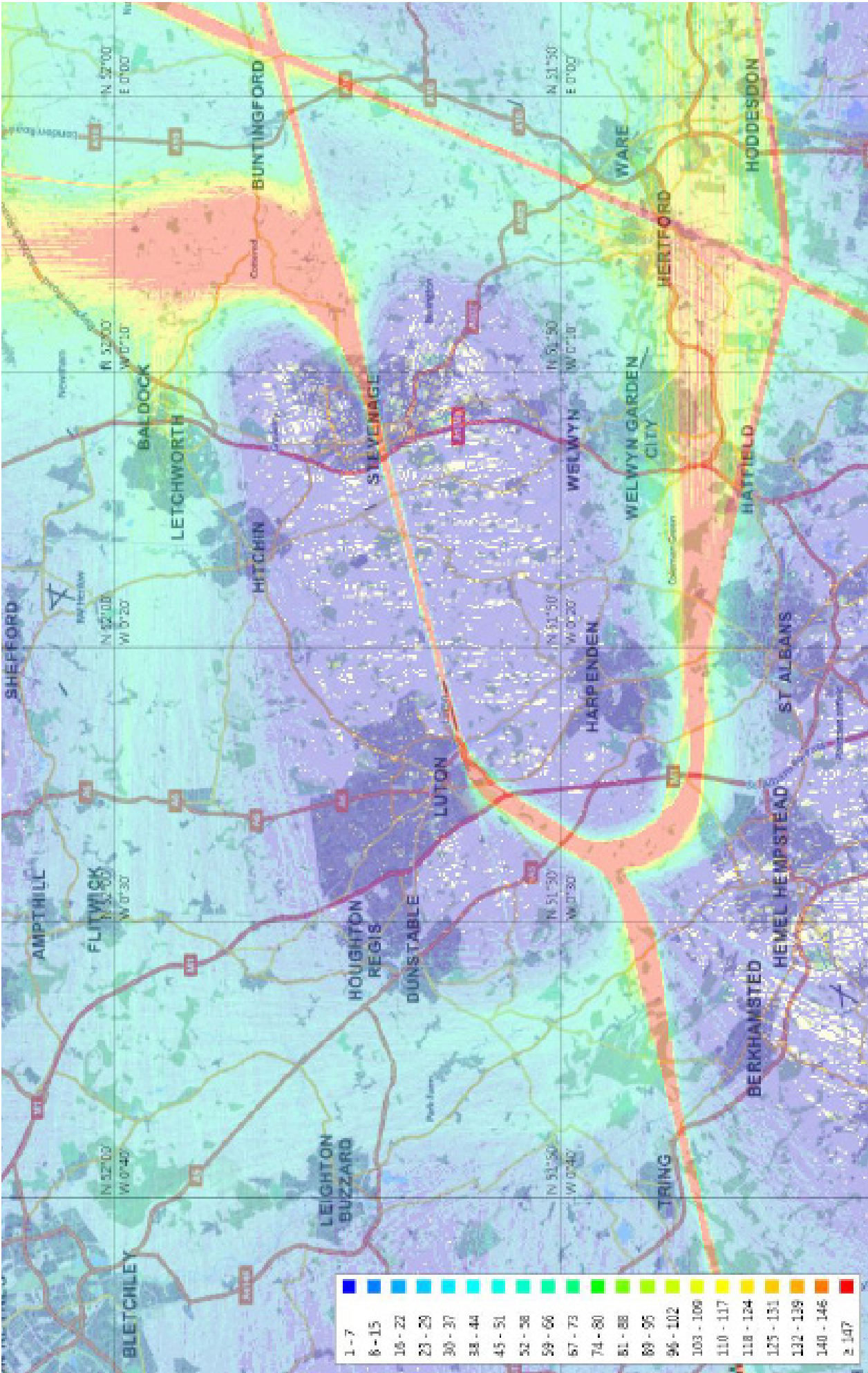
Westerly (26) Flight Routes (24 hour period)



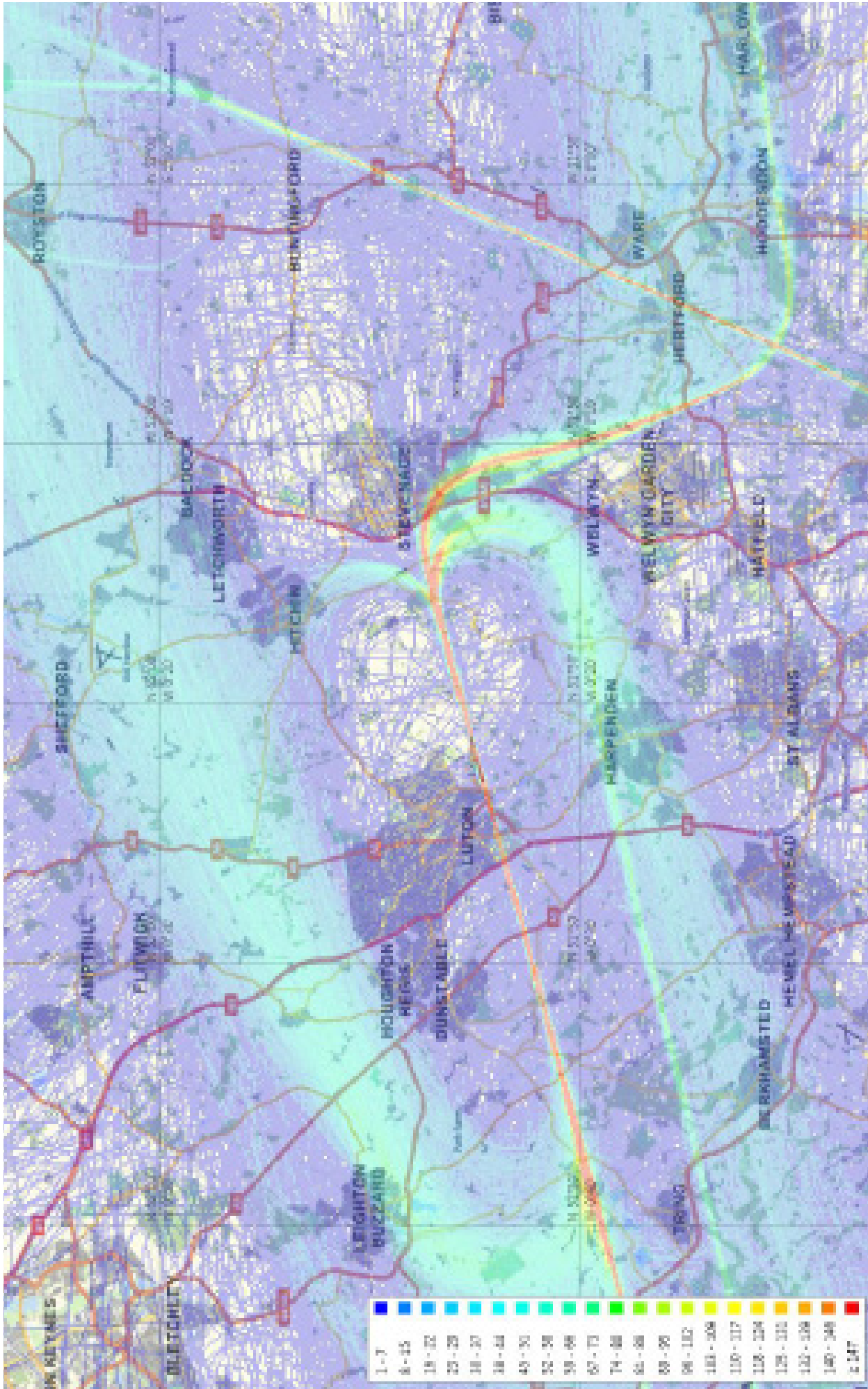
Easterly (08) Flight Routes (24 hour period)



Plot Density - 16th June - 15th September 2016 - Westerly (26)



Plot Density - 16th June - 15th September 2016 - Easterly (08)



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://travisln.topsonic.aero/>



Noise violation levels



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 and 07:00, is fined accordingly.

Number of Correlated Events	dB (A)	Daytime	NightTime	Total
	<70	5,526	653	5,879
	70	1,828	219	2,047
	71	3,557	372	3,929
	72	6,362	612	6,974
	73	9,088	881	9,969
	74	9,019	848	9,867
	75	6,434	636	7,070
	76	3,175	382	3,557
	77	1,652	288	1,940
	78	915	161	1,076
	79	393	83	476
	80	153	26	179
	81	43	2	45
	82	28	0	28
	83	8	0	8
	84	4	0	4
	85	7	0	7
	86	0	1	1
	87	0	0	0
	88	1	0	1
	89	0	0	0
	90	0	0	0

During the daytime 99% of correlated departing aircraft recorded maximum noise levels less than 79dB(A), with 87% registering below 76dB(A). Throughout the year 637 correlated daytime departures (1%) registered maximum noise levels at 79dB(A) or above.

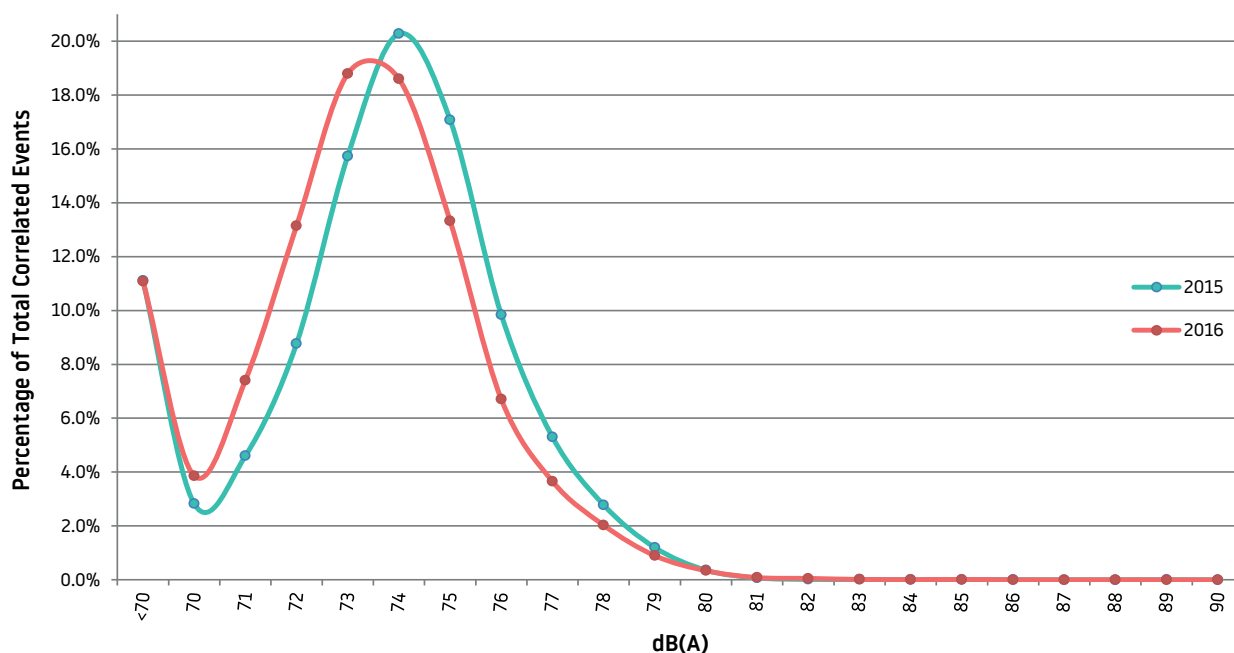
There were 21 correlated departing aircraft which recorded a maximum noise level greater than 82dB, all of these departures were fined as part of the Noise Violation Limits, these fines were added to the Community Trust Fund.

During the night 98% of correlated departures recorded maximum noise levels below 79dB(A), with 82% below 76dB(A). During the year 112 correlated night departures (2%) registered maximum noise levels at or above 79dB(A).

There were 3 correlated departing aircraft which recorded a maximum noise level greater than 80dB, all of these departures were fined as part of the Noise Violation Limits, these fines are put into the Community Trust Fund.

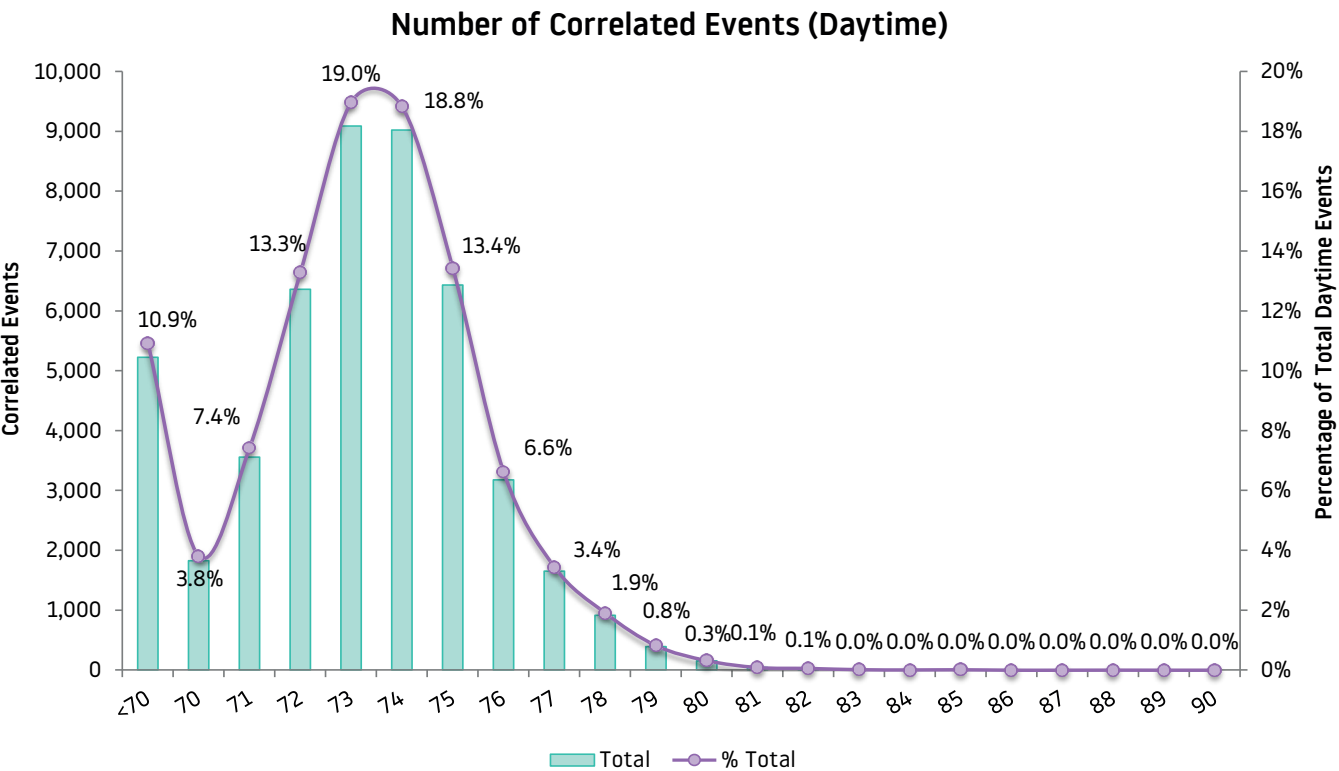
The graph below shows the year on year comparison of the correlated departure noise events.

Year on Year Comparison (Total)



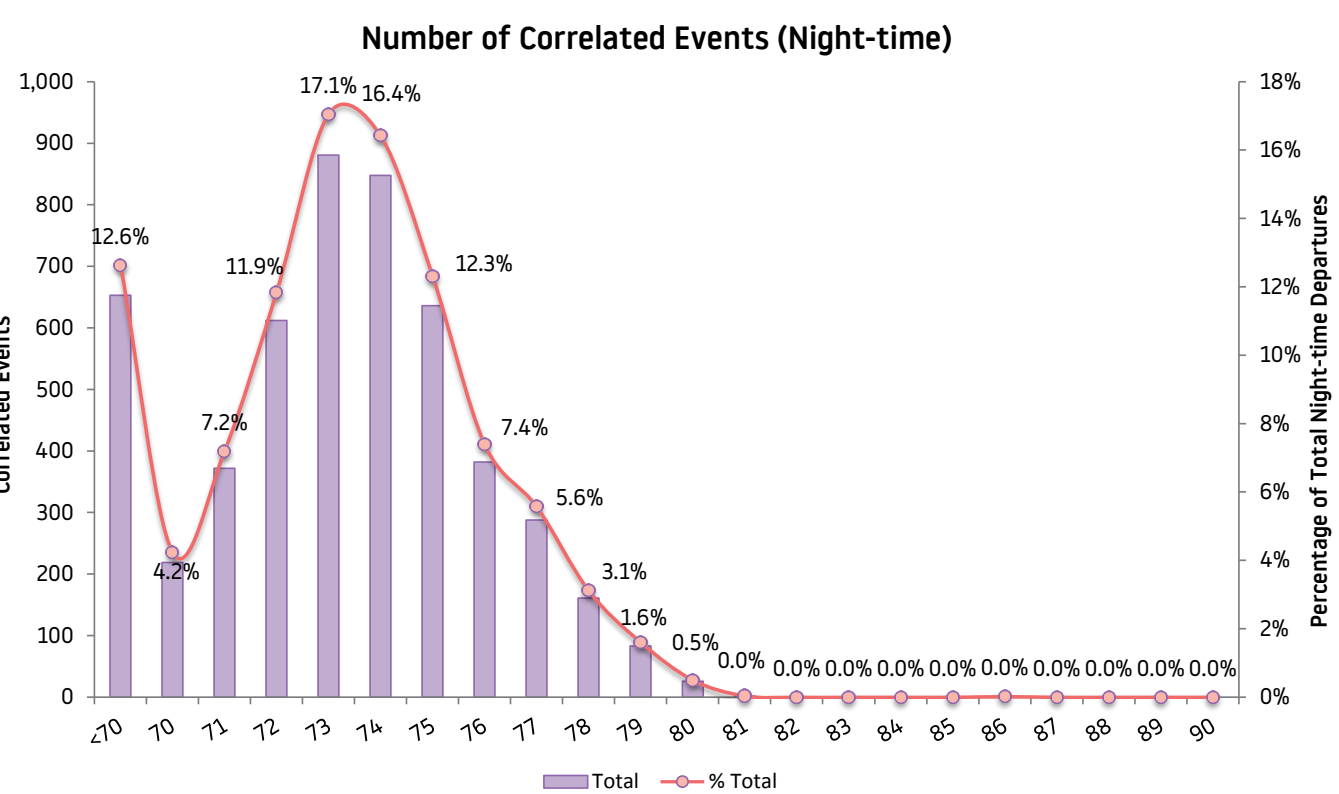
Daytime Noise

The following graph shows the number of correlated events during the daytime period (07:00hrs - 23:00hrs) compared to the total percentage of correlated events during the daytime.



Night-time Noise

The following graph shows the number of correlated events during the night-time period (23:00hrs - 07:00hrs) compared to the total percentage of correlated events during the night-time.



Noise violations during 2016

There were 21 violations of the daytime noise level in 2016, and a total of 3 violations of the 80dB(A) night noise violation level (details below), compared to 15 day-time noise violations and 9 night noise violations in 2015. Operators at London Luton Airport take these noise violation limits very seriously and in some cases these have led to changes in operating procedures in order to reduce the noise from their aircraft. Additionally, some operators have even dismissed pilots as a result of a noise violation fine.

	Date / Time (Local)	Aircraft Type	Noise Level	Penalty
Daytime	05/01/2016	Boeing 737-200	86dB (A)	£500
	17/02/2016	Boeing 737-200	84dB (A)	£100
	26/02/2016	Boeing 727-200	85dB (A)	£100
	03/03/2016	Gulfstream III	85dB (A)	£100
	07/04/2016	Antonov 12	85dB (A)	£100
	13/04/2016	Boeing 737-200	85dB (A)	£100
	13/06/2016	MD-87	83dB (A)	£100
	03/07/2016	Dassault Falcon 900	84dB (A)	£100
	14/07/2016	MD-82	83dB (A)	£100
	15/07/2016	MD-82	83dB (A)	£100
	21/07/2016	MD-82	84dB (A)	£100
	22/07/2016	MD-82	85dB (A)	£100
	25/07/2016	MD-82	83dB (A)	£100
	05/08/2016	MD-82	83dB (A)	£100
	19/08/2016	MD-82	85dB (A)	£200
	19/08/2016	Boeing 737-200	88dB (A)	£500
	16/09/2016	MD-87	83dB (A)	£100
	18/09/2016	MD-87	83dB (A)	£100
	02/10/2016	Boeing 737-200	84dB (A)	£100
	28/11/2016	Boeing 737-200	85dB (A)	£100
	30/12/2016	Boeing 737-200	83dB (A)	£100
Night-time	05/01/2016	Antonov 12	86dB (A)	£500
	27/04/2016	Airbus A300	81dB (A)	£100
	01/12/2016	Boeing 737-800	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 Insulation Scheme

In 2016 we started our Noise Insulation Scheme, which aims to assist in reducing the noise for properties in our local communities. The scheme covers both residential and non-residential properties. Depending on any existing insulation in the property, double glazing, secondary glazing and ventilation units can be provided. Rooms eligible for insulation include living rooms, dining rooms, kitchen-diners and bedrooms.

The Noise Insulation Sub-Committee selected 31 residential properties which would be prioritised for insulation in 2016. LLA contacted these 31 properties and 11 accepted the scheme.

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 2016

The table below shows the annual noise contours for summer 2016 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	2015	2016	Difference 2015-2016	2017 (forecast)
>72	1.63	1.5	0.9	1.0	+0.1	1.1
>69	2.80	2.5	1.5	1.7	+0.2	1.8
>66	4.86	4.4	2.5	3.2	+0.7	3.3
>63	9.10	7.3	4.9	6.2	+1.3	6.3
>60	17.18	11.8	9.0	10.6	+1.6	11.2
>57	31.52	19.6	17.2	19.2	+2.0	20.7

Considering the summer 2015 daytime noise contour there is an increase in area of approximately 12% when comparing the 2016 contour with the 2015. This is generally in line with what would be expected based on the increase in movement numbers.

The 2017 contours are forecast to grow by 6 to 8% compared to the 2016 contours at the lower values, and by a smaller amount at the higher values. This is largely due to a forecast 8% increase in movement numbers. At 57 dB LAeq, 16h the 2017 contour is a similar shape but slightly larger than the 2016 contour.

L_{Aeq, 8 hour} Night-time						
	1984	1999	2015	2016	Difference 2015-2016	2017 (forecast)
>72	0.79	1.1	0.4	0.4	0.0	0.5
>69	1.39	1.8	0.6	0.6	0.0	0.8
>66	2.42	3.0	1.0	1.0	0.0	1.2
>63	4.01	5.2	1.7	1.7	0.0	2.0
>60	7.06	8.3	3.0	3.3	+0.3	3.7
>57	13.05	13.2	5.7	6.3	+0.6	6.9
>54	24.48	21.6	10.8	11.5	+0.7	12.9
>51	44.92	36.0	20.2	20.7	+0.5	23.6
>48	85.04	60.6	35.3	36.5	+1.2	40.2

Considering the 48 dB LAeq,8h night time noise contour there is an increase in area of approximately 3% when comparing the 2016 contour with the 2015 contour, while some of the higher value contours, 54 to 60 dB LAeq,8h, have increased in area by around 10%. This is largely due to the increase in movement numbers, although the departure movements, which make the most noise, have remained similar, with the increase comprising mainly arrivals. The 48 dB LAeq,8h 2017 contour is forecast to grow by 10% compared to the 2016 contour. This is largely due to a forecast 8% increase in movement numbers.

The 2016 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.

Contour population counts

The population counts for this year were calculated using the CACI Ltd, 2015 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.

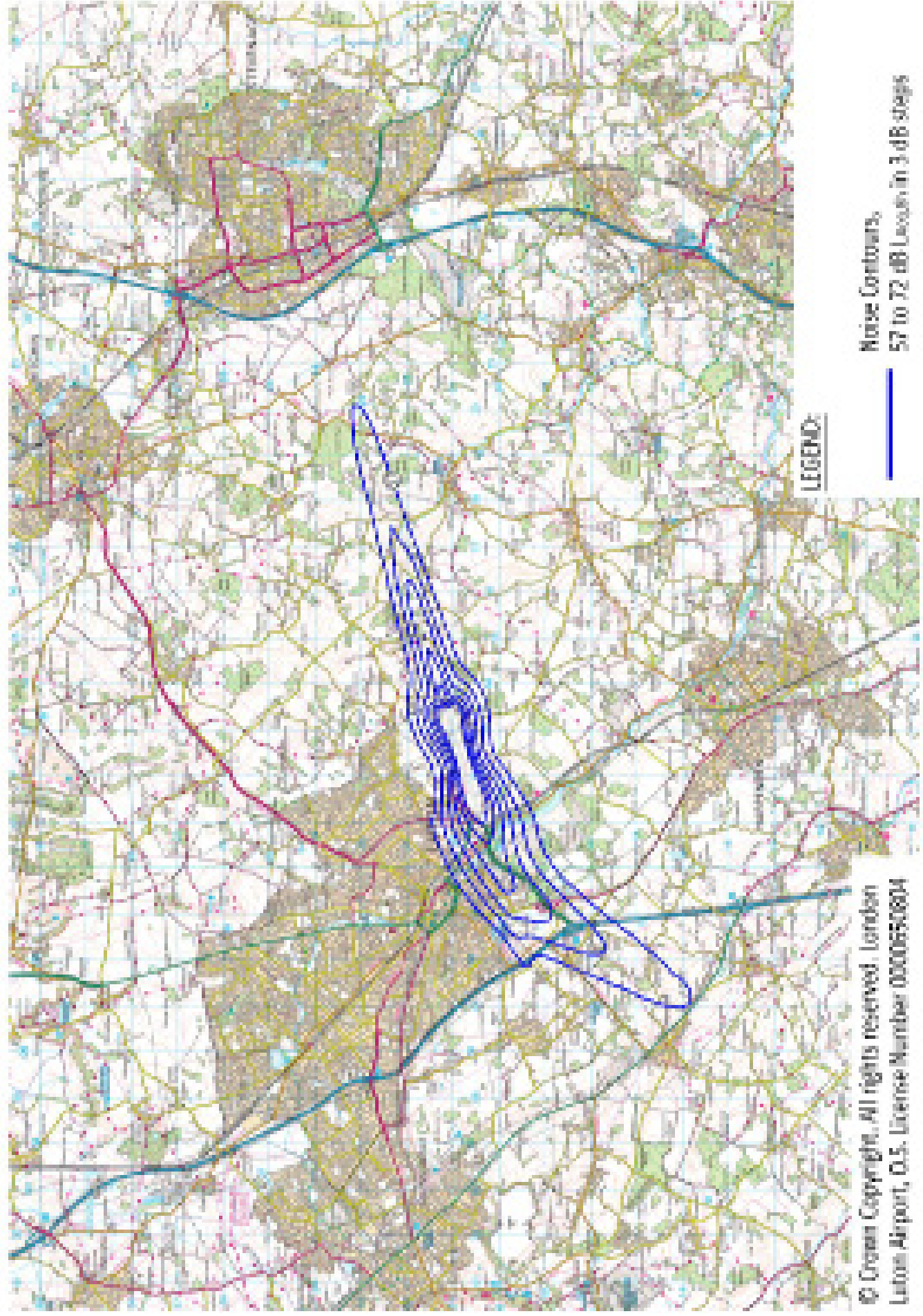
L_{Aeq, 16 hour} Daytime	2015		2016	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	250	700	700	1,800
>60	750	2,200	1,700	4,500
>57	2,600	7,100	3,600	8,900

When looking at the daytime results there are increases in the numbers of dwellings and the population within the contours when comparing 2016 with 2015. For the summer 2015 daytime contour the increase is around 40% and for the higher value contours the increase is significantly greater. This is due to the greater activity in 2016 leading to an increase in the area of the contours, which is around 12% at 57 dB. A further factor is that the population is not evenly distributed across the contour area. In particular the majority of the population is located in South Luton. The 2015 contour only included the southern edge of this area, whereas the 2016 contours extend slightly further north. This means that although the aircraft noise exposure change associated with the contour area increase is relatively small, it is enough to move a significant population from just outside to inside the contour.

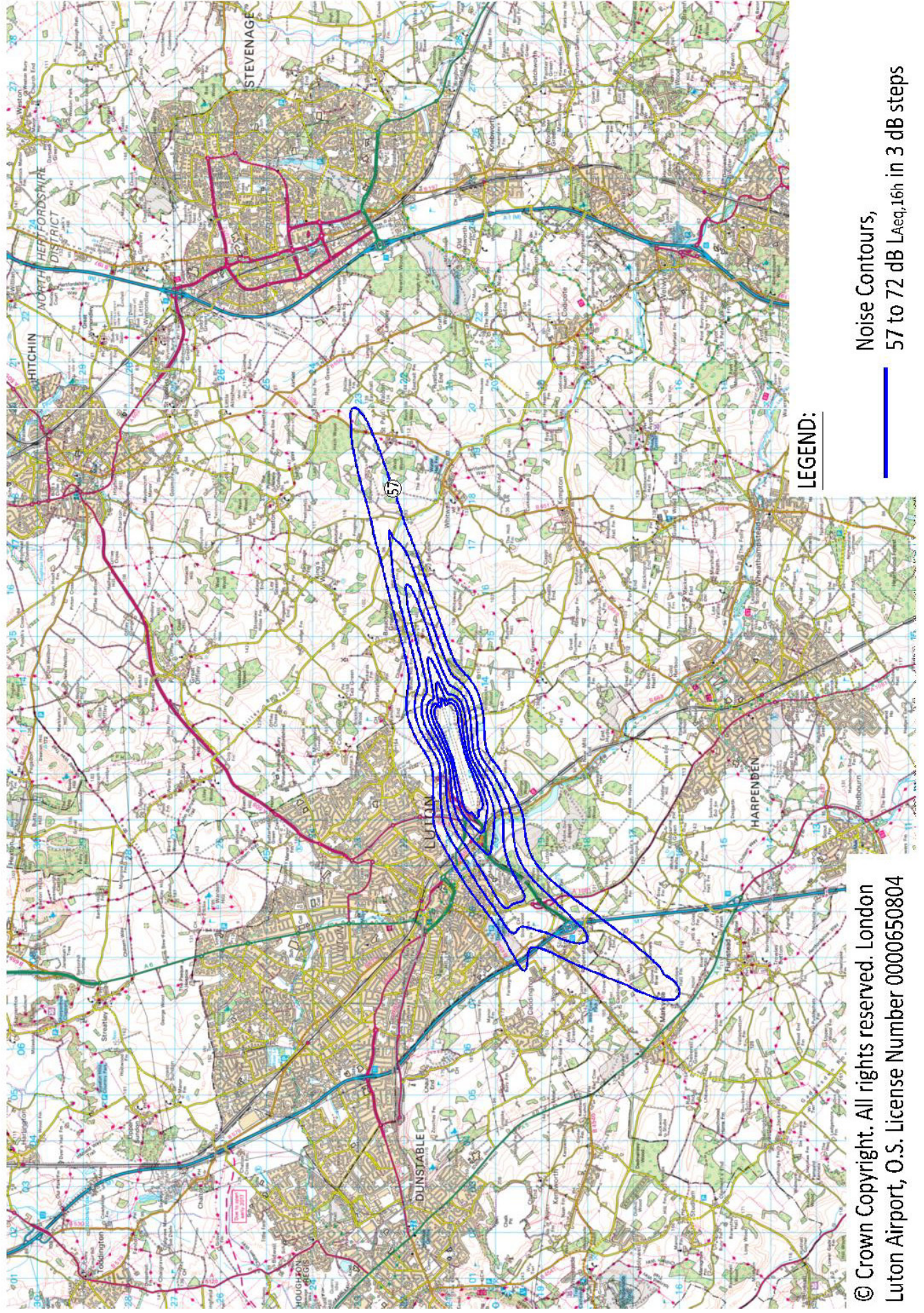
L_{Aeq, 8 hour} Night-time	2015		2016	
	Dwellings	Population	Dwellings	Population
>72	0	0	0	0
>69	0	0	0	0
>66	0	0	0	0
>63	0	0	0	0
>60	0	0	0	0
>57	400	1,200	500	1,300
>54	1,050	3,000	1,550	4,200
>51	2,850	7,700	3,250	8,100
>48	5,550	14,700	6,750	16,100

For the night-time contours there are increases in the numbers of dwellings and the population within the contours when comparing 2016 with 2015 although these are less than during the daytime, for example for the 48 dB LAeq8h contour the increase in the population is around 10%. For the daytime contours the increases are due to the greater size of 2016 contours, which is around 3% at 48 dB LAeq. The contours extend slightly further into populated areas. For example in 2015, the eastern end of the 48 dB contour is largely restricted to industrial and commercial area of Stevenage whereas the 2016 contour extends further and so includes some residential properties.

Annual Day Noise Contours Summer 2016

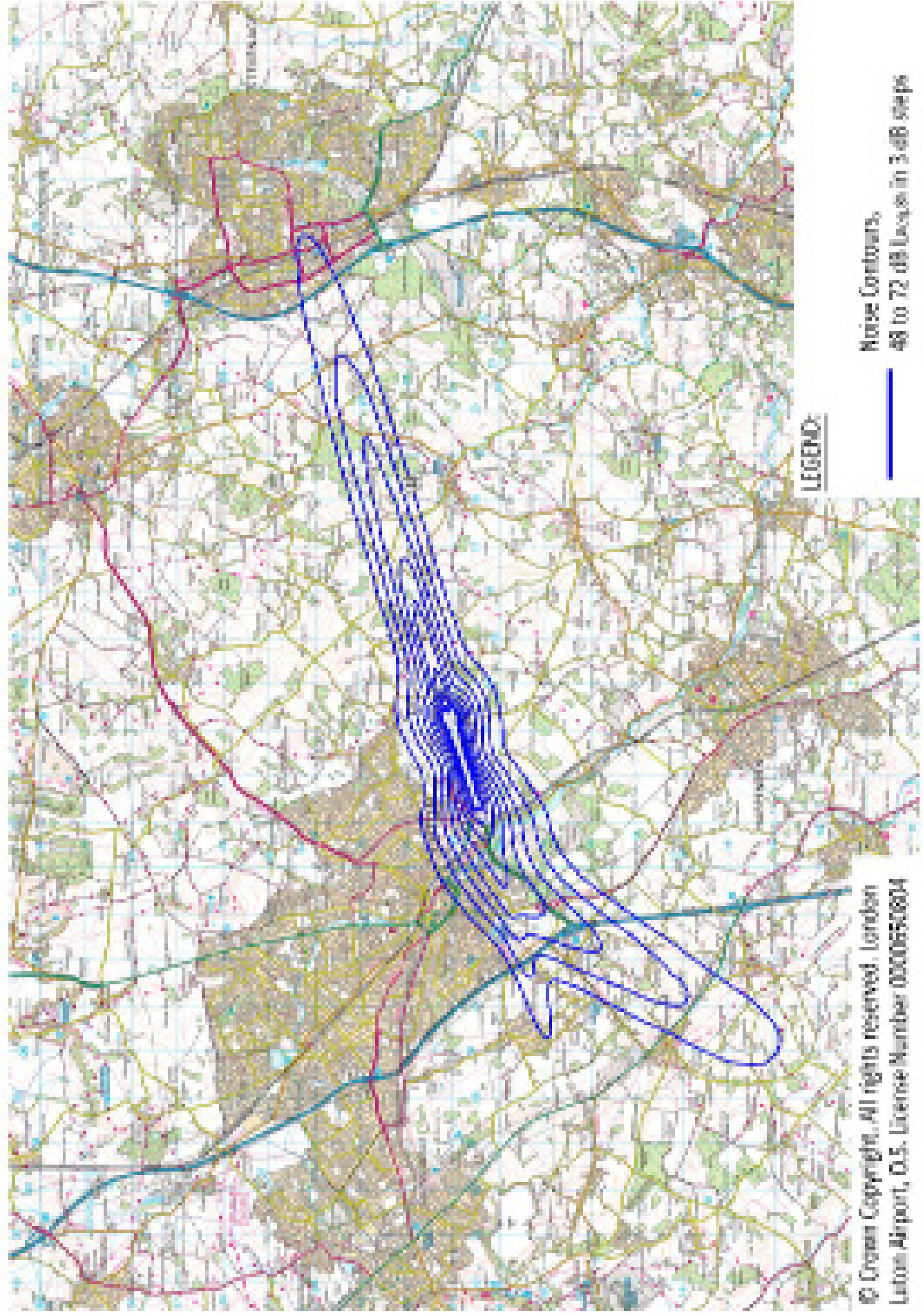


Annual Day Noise Contours Summer 2015

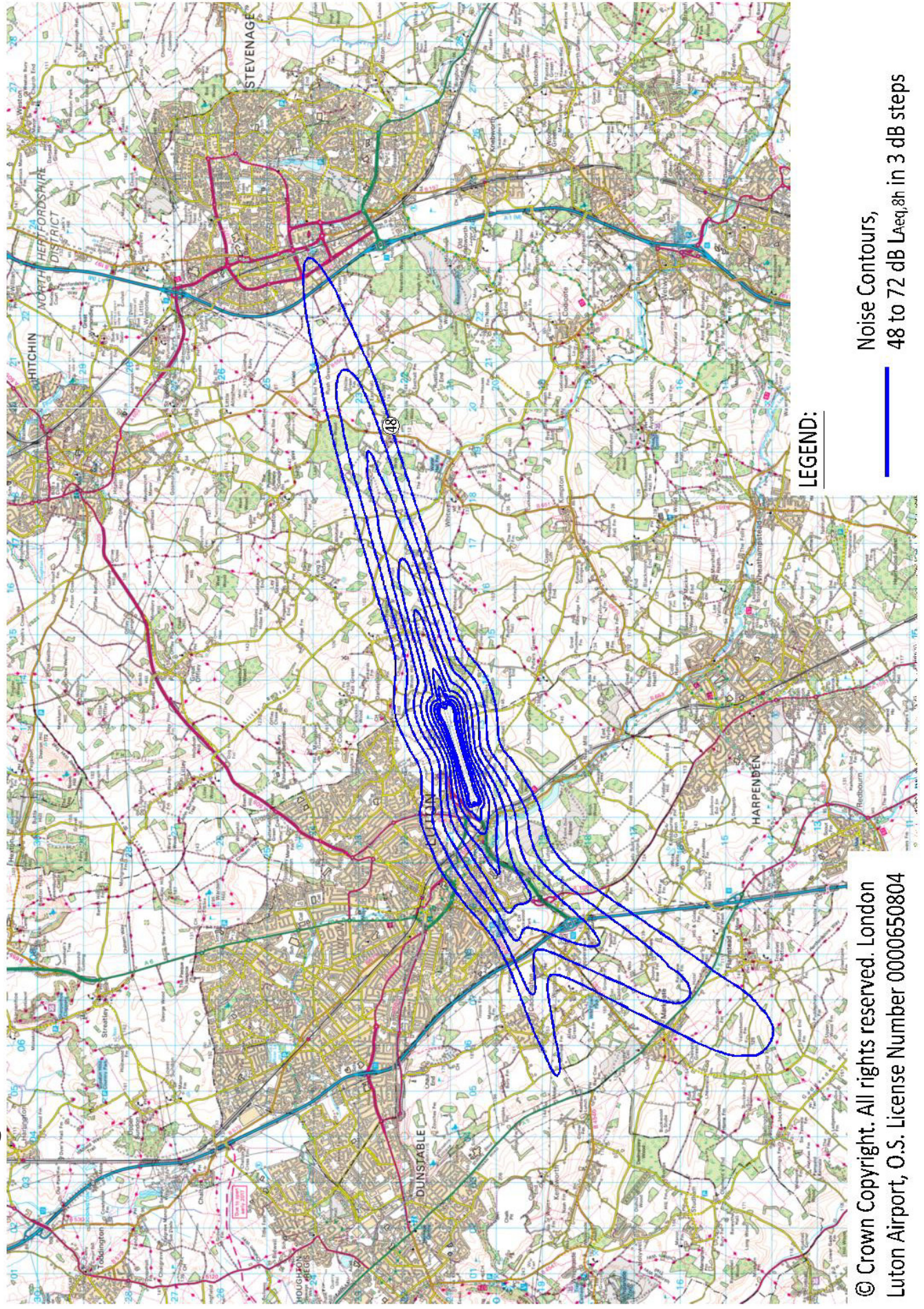


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Annual Night Noise Contours Summer 2016



Annual Night Noise Contours Summer 2015



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Annual Noise Contours 2016

The annual Lden noise contours for 2016 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 2016 noise contours Lden is an A-weighted, Leq noise level, measured for an average 24 hr day between 1st January and 31st December 2016, 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 2016.

Annual Lden Noise Contour Results

Contour Value (dB(A) L _{den})	Contour Area (km ²)		Population ¹		Dwellings ²	
	2015	2016	2015	2016	2015	2016
>75	0.8	0.8	0	0	0	0
>70	1.7	1.9	0	0	0	0
>65	4.7	5.5	500	1,100	200	450
>60	13.6	15.2	4,700	5,700	1,700	2,200
>55	35.7	39.3	14,800	17,100	5,550	7,000

Annual Lnight Noise Contour Results

Contour Value (dB(A) L _{den})	Contour Area (km ²)		Population ¹		Dwellings ²	
	2015	2016	2015	2016	2015	2016
>66	0.8	0.9	0	0	0	0
>63	1.3	1.4	0	0	0	0
>60	2.2	2.4	0	0	0	0
>57	4.3	4.7	400	500	150	200
>54	7.8	8.5	2,000	2,100	700	800
>51	15.0	16.3	5,200	6,000	1,850	2,300
>48	27.1	29.3	10,900	11,600	4,100	4,800

The areas of every Lden contour have increased except the area of the 75 dB Lden contour, which has remained the same. The increases are relatively consistent across contour bands, ranging from 10-17%, and are in line with what would be expected due to the increase in aircraft movements.

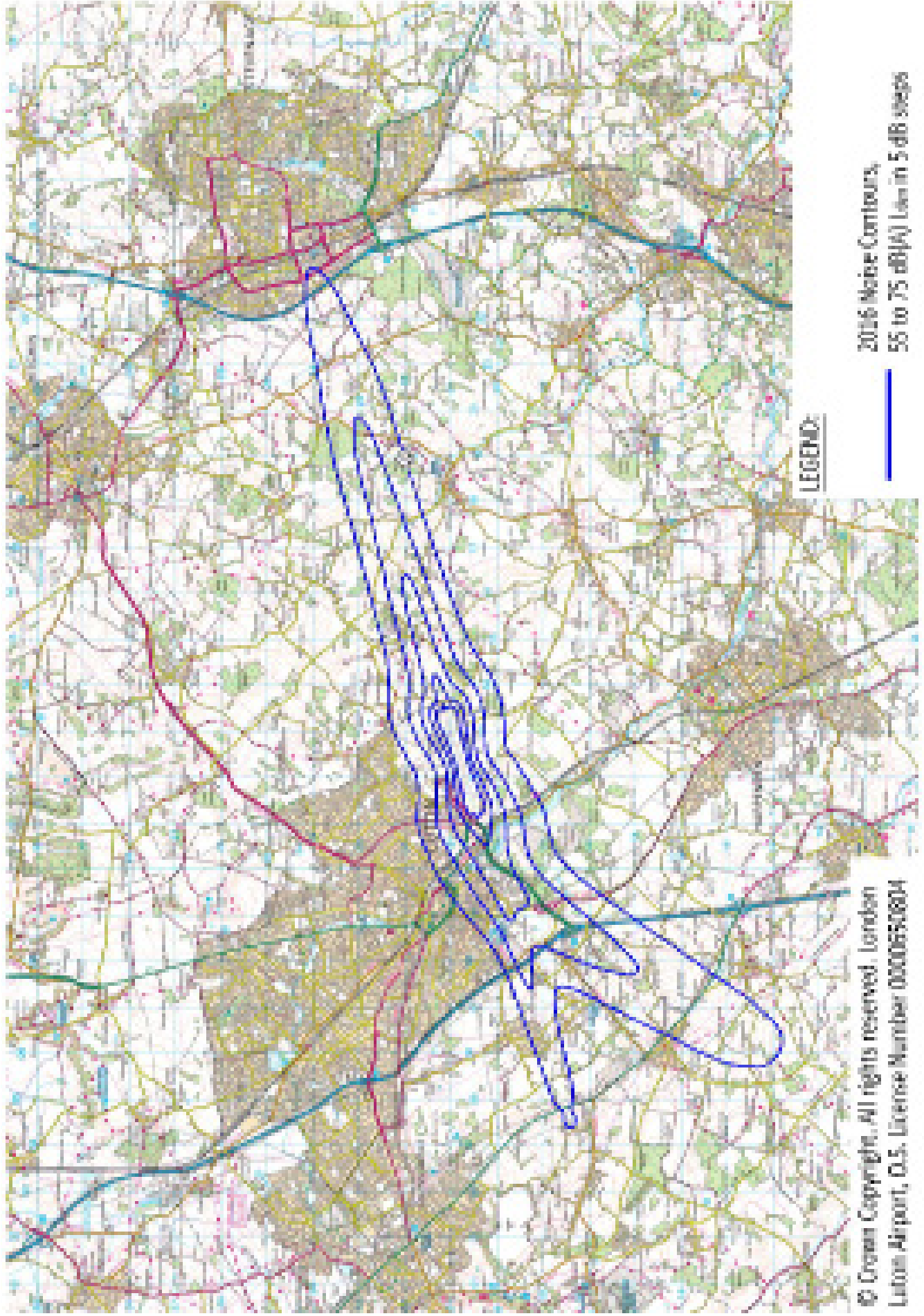
Similarly the areas of all the Lnight contours have increased by around 8-9%.

The population and dwellings within the contours has increased, due to the increasing areas. The contour shape is similar, but slightly larger in 2016.

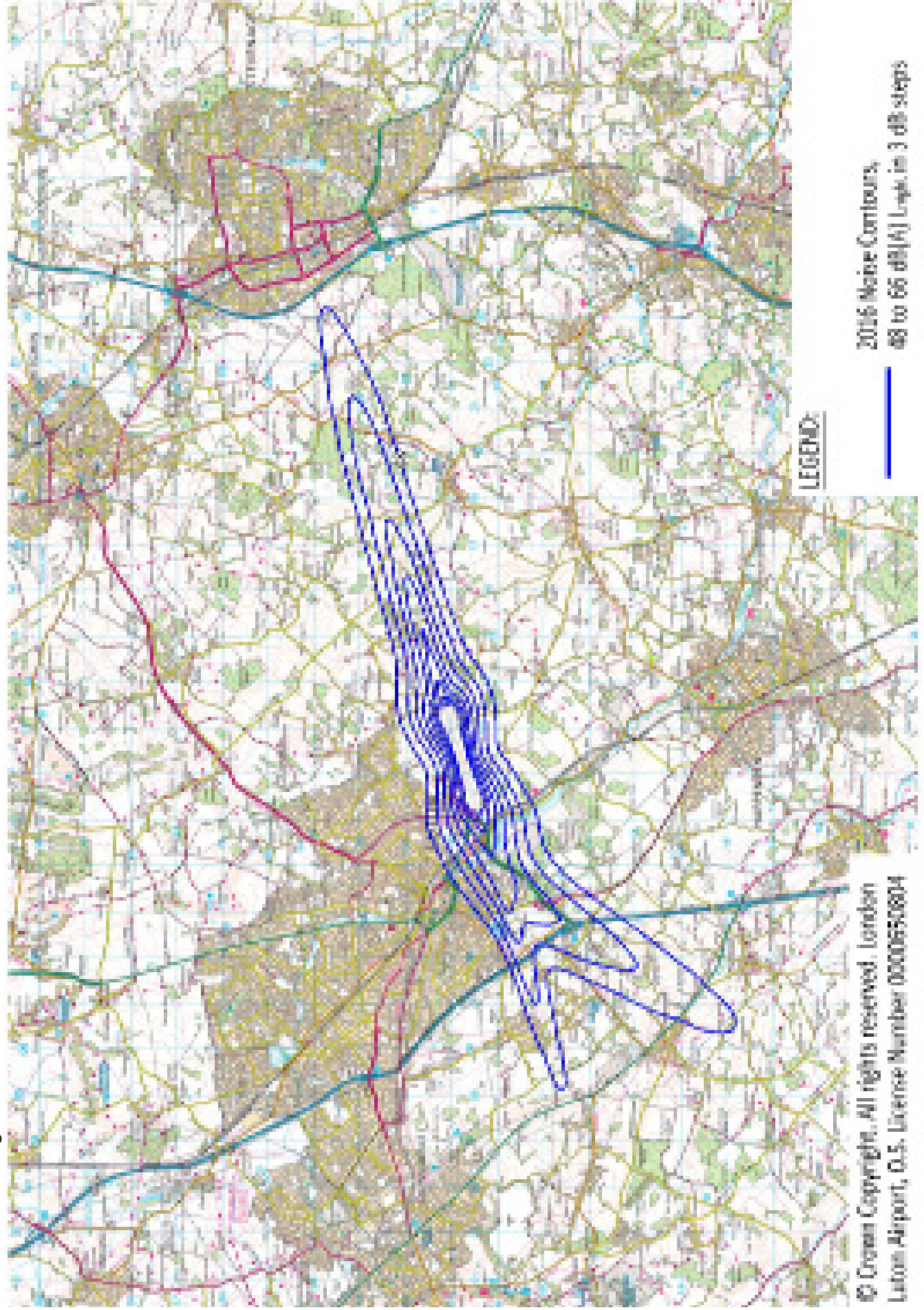
¹ - Population counts rounded to nearest 100

² - Dwelling counts rounded to nearest 50

Annual L_{den} Noise Contours 2016



Annual L_{night} Noise Contours 2016



Correspondence and Complaints

On the 1st January 2016 the airport implemented a new complaints policy. This was aimed to remove the confusion relating to the 'Events' section of the reporting. Complaints will now be reported in two forms – General disturbance and Specific disturbance. A General disturbance relates to a complaint that does not specify a time period, examples of this type of complaint includes frequency, air quality and ground noise. A specific complaint relates to a complaint which specifies the time which can be correlated to an aircraft, example complaints of this type include too low, too loud, night flight and off-track. If a single piece of correspondence contains multiple specific disturbances, this will be logged as a general complaint regarding frequency.

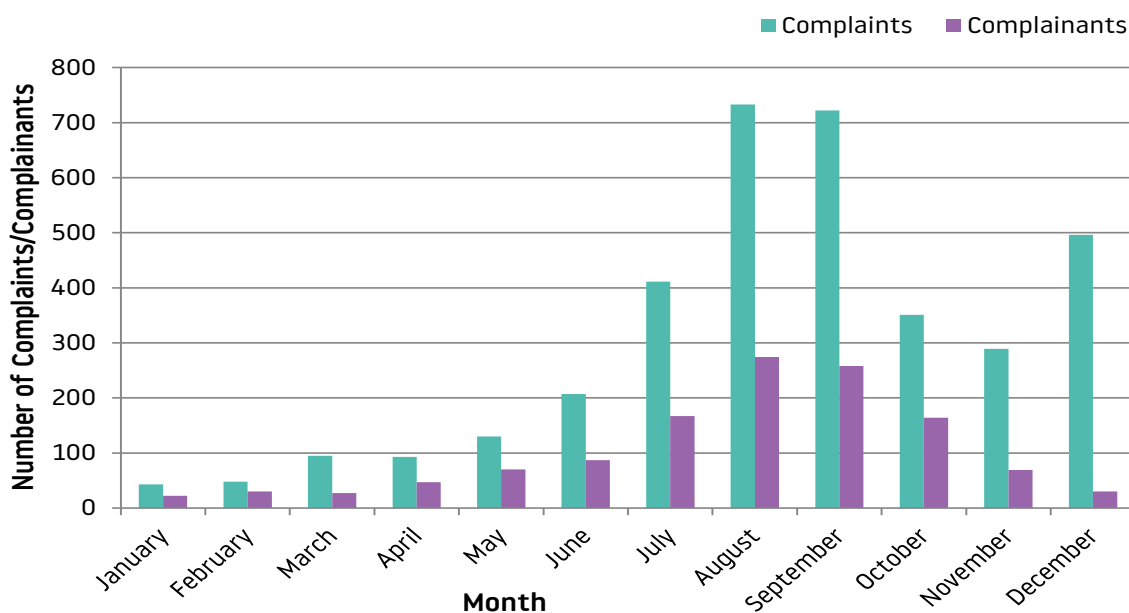
Complaint statistics can be extremely difficult to interpret as people's tolerance of noise and their perception of what causes annoyance varies widely. It is highly subjective and differs between neighbours experiencing the same levels of noise.

Total complaints relating to LLA aircraft operations

	2015*	2016**
Total No. of Complaints relating to LLA aircraft operations	-	3,612
No. of Complainants	355	814
No. of General Complaints	-	1,174
No. of Specific Complaints	-	2,438
No. of Events (eliciting a complaint)	1,098	-
Average No. of Complaints per Complainant	2.7	4.4
No. of Aircraft Movements per Complaint	121	

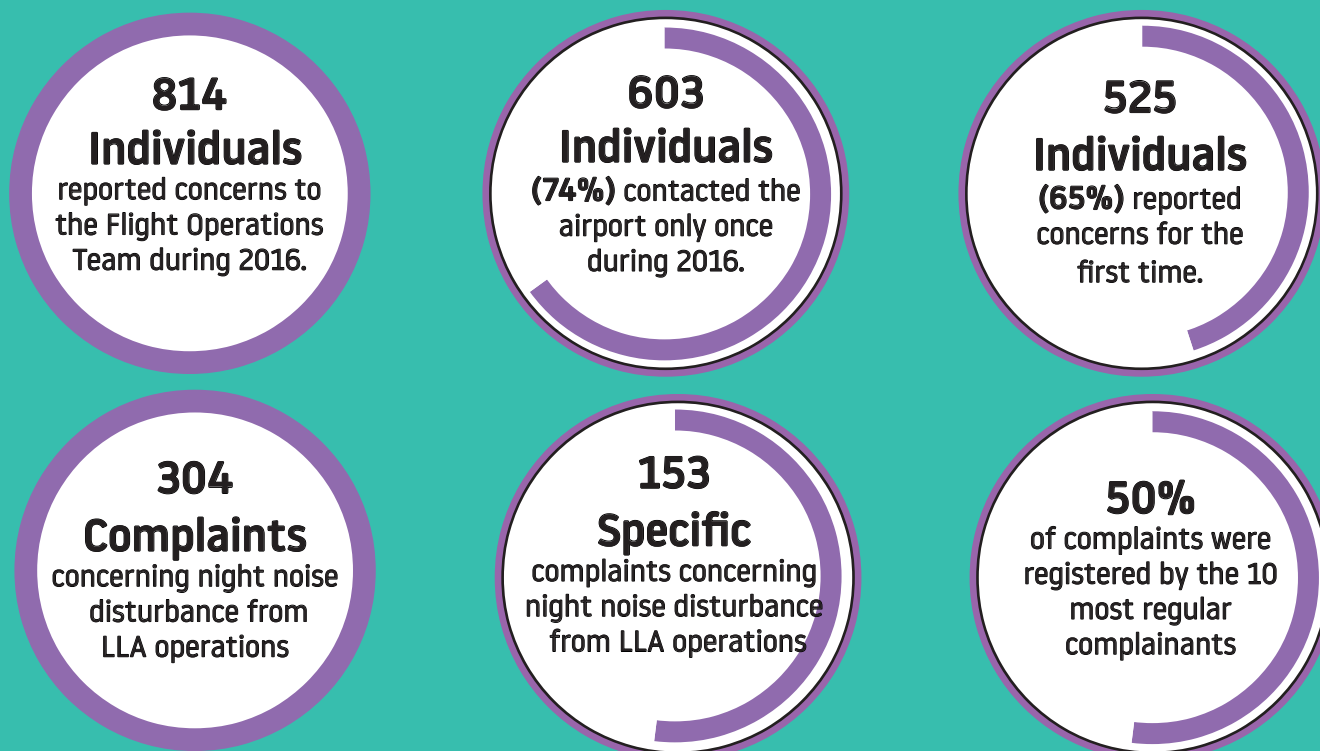
During 2016 a total of 3,612 complaints (on average 10 complaints per 24 hours) relating to LLA aircraft operations were received, compared with 1,098 events in 2015. Out of the total complaints 50% were registered by the 10 most regular complainants. A further 87 complaints received were not attributable to LLA traffic.

The figure below shows the complaints statistics throughout 2016. More complaints were received in the summer months, correlating with an increase in aircraft activity.



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

** Figures excluding 619 complaints received from one resident in St Albans.

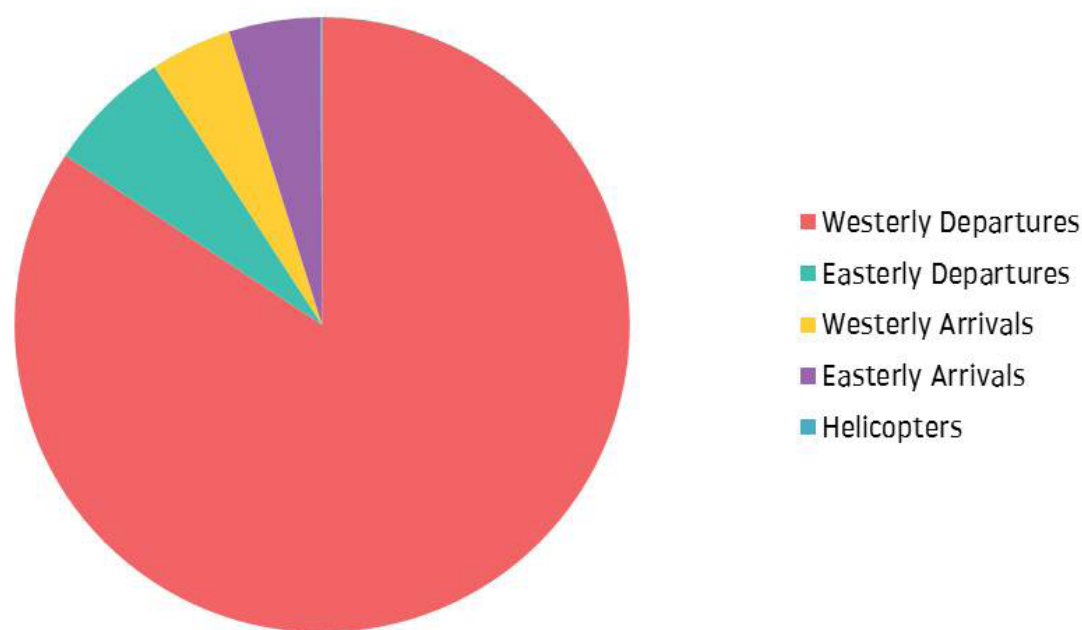


Complaints by aircraft type

Of the 3,612 complaints relating to LLA aircraft operations registered during the year 2,309 complaints (64%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature. The table below shows aircraft types generating complaints.

Aircraft Type	No. of Correlated Complaints	% of Correlated Complaints	Annual No. of Movements of Aircraft Type	Movements of Aircraft Type per Correlated Complaint
A319	276	11.95%	28,131	102
A320	1058	45.82%	45,281	43
A321	212	9.18%	6,673	31
B737-800	284	12.30%	15,471	54
A306 (Cargo)	69	2.99%	1,134	16
B737-400	85	3.68%	1,446	17
GLF4/GLF5/GLF6	20	0.87%	5,053	253
ATP	11	0.48%	476	43
B757 & B767	70	3.03%	1,671	24
B737-300	20	0.87%	394	20
B737-200	5	0.22%	52	10
Helicopter	2	0.09%	573	287
CL30/CL60	24	1.04%	2,480	103
GLEX/GL5T	29	1.26%	476	43
Other Private Aircraft	81	3.51%	17,927	221
Other Cargo Aircraft	5	0.22%	28	6
Other Passenger Aircraft	58	2.51%	839	14

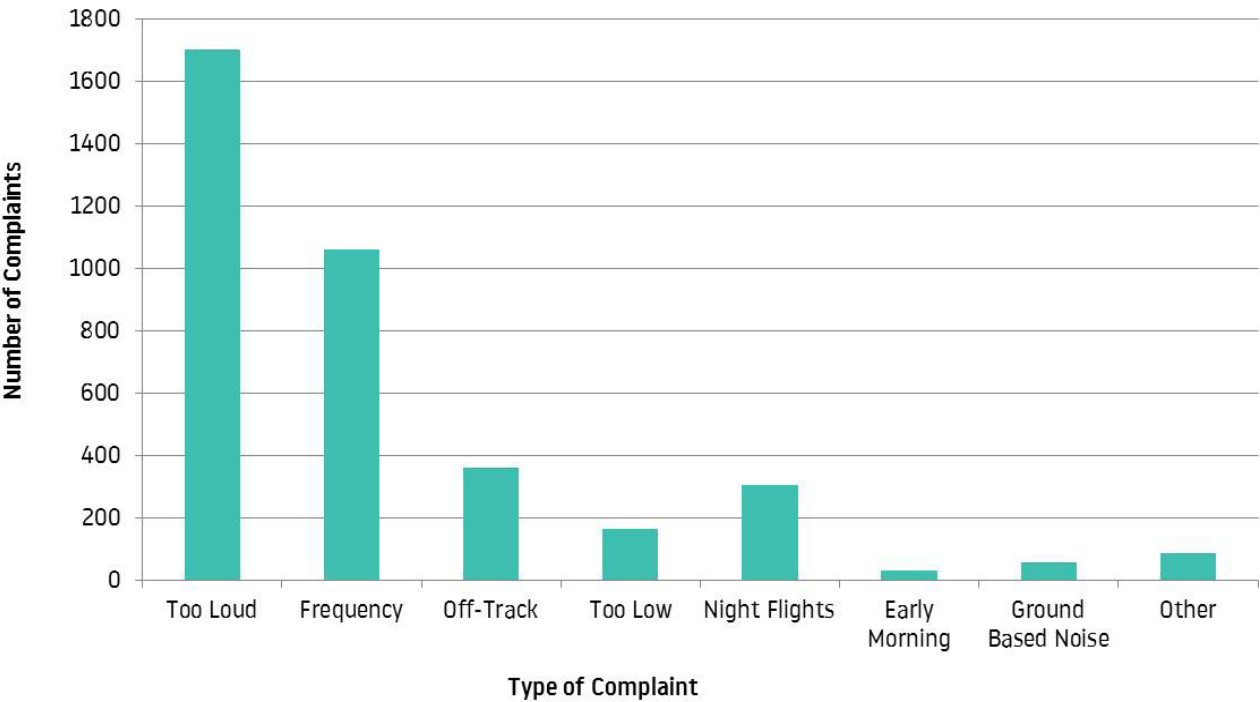
Nature of Disturbance



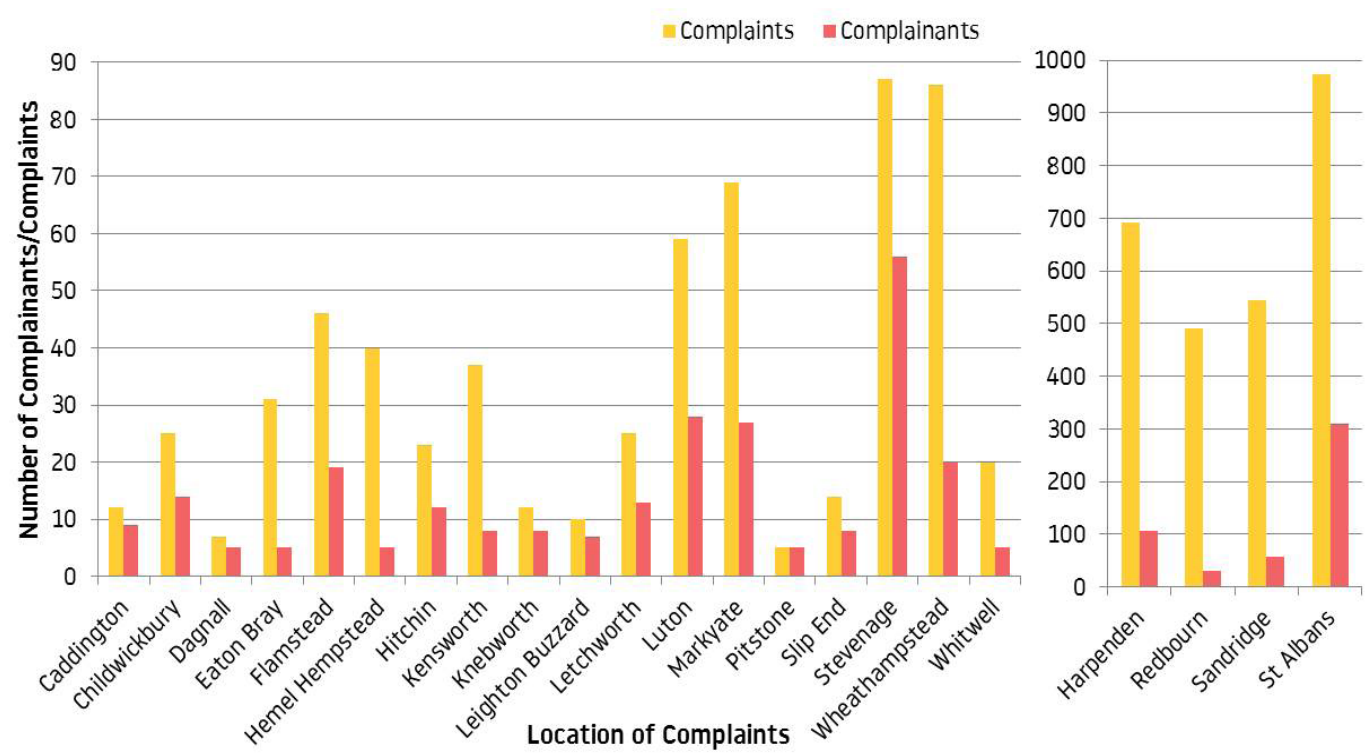
Within the 1,946 specific complaints correlated to aircraft movements concerning westerly departures, 1,898 reported specific aircraft following the Match/Detling route, 33 related to aircraft on the Compton route and 8 related to aircraft following the Olney heading.

Seven other complaints involved positioning flights following off-airways flight routes. Of the 151 complaints specifically attributed to easterly departures 112 related to aircraft following the Compton heading, 14 related to aircraft on Olney flight route and 18 to aircraft on the Match/Detling heading.

A further 7 complaints involved positioning flights following off-airways flight routes. Out of the total 2,309 complaints correlated to specific aircraft, 99 related aircraft arriving at the airport during westerly operations and 111 complaints related to easterly arrivals.



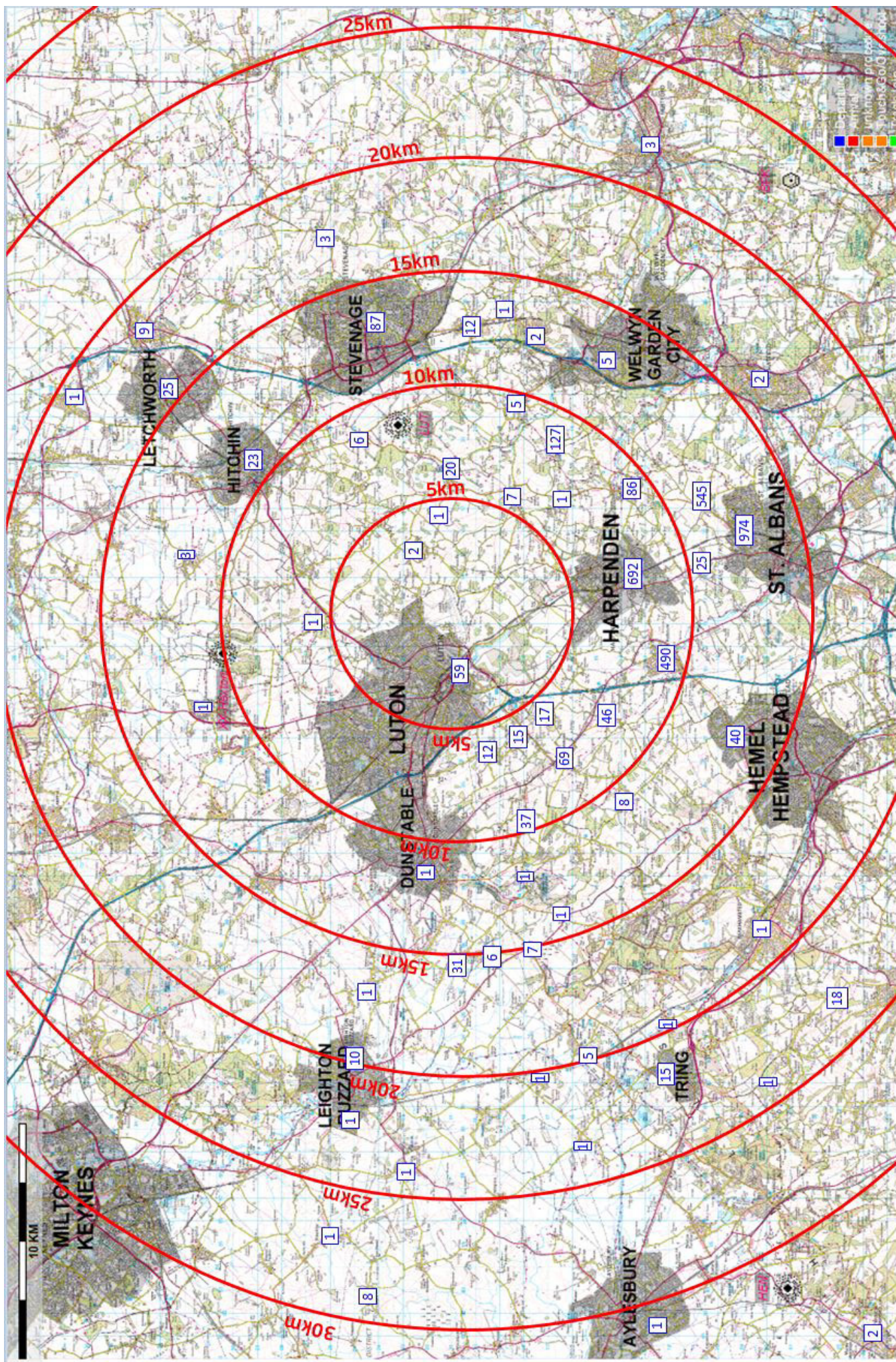
Location of Complainants (5+)



The map on the following page shows the location of complaints compared to distance from airport.



Location of Complaints 2016



Communication method

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

Communication Method	% of Total Complaints
TraVis	59%
Email	30%
Telephone	10%
Letter	1%

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

Complaints analysis

During 2016 there was an increase in complaints compared to 2015; this is thought to be due to a number of reasons:

- The airport has grown considerably during 2016, in line with the redevelopment plans. This will have caused an increase in the number of movements on all routes.
- A large number of complaints were generated by a small number of people. The 10 most regular complainants in 2016 created 50% of total complaints.
- High numbers of complaints were recorded from specific locations, for example Harpenden, Redbourn, Sandridge and St Albans. Complaints from these areas accounted for 78% of total complaints. In these areas there is a heightened awareness of aircraft, particularly in relation to the recent growth and RNAV implementation in 2015.
- Upgrades to TraVis at the start of 2016 means it is now easier for residents to complain about more than one aircraft. This is less time consuming than the previous process.
- As winds dictated westerly operations for 70% of the time, the largest percentage of complaints related to aircraft operations during westerlies.

Noise Action Plan

The table below provides an update on the actions in the Noise Action Plan.

	Action	Timescale
1	Operate and maintain a noise and track-keeping system to monitor aircraft operations, reporting statistics quarterly to the LLACC (via NTSC)	Ongoing
2	Produce Lden noise contours annually, based on an annual average 24 hour period and present to LLACC (via NTSC).	Ongoing
3	Undertake regular analysis of aircraft activity and noise to identify where a review of procedures may help minimise disturbance	Ongoing
4	Monitor % compliance of Continuous Descent Approaches (CDA) both day and night, reporting quarterly to the LLACC (via NTSC)	Ongoing
5	Undertake community visits with a portable handheld noise monitoring device, on request.	Ongoing
6	Present quarterly night contours to the LLACC (via NTSC)	Ongoing
7	Investigate, log and respond to all complaints relating to London Luton Airport aircraft activity, reporting in-depth statistics quarterly to the LLACC (via NTSC)	Ongoing
8	Quarterly Monitoring Reports to be available to view on the London Luton Airport website as well as the LLACC website	Ongoing
9	Monitor helicopter operations to/from London Luton Airport to ensure they avoid, where possible, the most densely populated areas	Ongoing
10	Calibrate noise and track-keeping system and INM noise contour model on an annual basis	Ongoing
11	Monitor the track-keeping compliance and follow up with operators, as necessary	Ongoing
12	Monitor the number of marginally compliant Chapter 3 aircraft	Ongoing
13	Monitor and report progress against Noise Action Plan actions to LLACC (via NTSC), providing statistics annually in the Annual Monitoring Report	Ongoing
14	Review the voluntary Night Noise Policy in consultation with the LLACC (via NTSC)	2015
15	Encourage daytime operations through higher landing fees at night	Ongoing
16	Fine any departing aircraft exceeding noise limits, to encourage airlines to operate the quietest aircraft types	Ongoing
17	Discourage residential development close to the airport boundary or areas affected by aircraft noise, in liaison with Local Authorities	Ongoing
18	Divert all noise violation limit penalties from airport operations to support the noise management programme and Community Trust Fund. Penalties will be reported to LLACC via NTSC on a quarterly basis.	Ongoing
19	Liaise regularly with airline operators via a 'Flight Ops' Committee to ensure adherence to existing standard procedures and encourage innovation	Ongoing
20	Review operational procedures in relation to noise with support of the 'Flight Ops' committee and NTSC	Ongoing
21	Work with operators to encourage the voluntary phase out of noisiest aircraft	Ongoing
22	Continue to review procedures for helicopter operations with the support of air traffic control	Ongoing
23	Work with operators on the voluntary phase out of marginally compliant Chapter 3 high aircraft i.e. hushkitted aircraft	2014
24	Explore with the 'Flight Ops' Committee/NTSC penalties for flying off track after the introduction of RNAV-1 departure routes	2015
25	Work with airlines, air traffic control, NATS and other stakeholders to introduce new technologies and environmental improvements	Ongoing

	Action	Timescale
26	Review the Engine Ground Running policy to minimise disturbance during the night and late in the evening	Ongoing
27	Operate within planning limits	Ongoing
28	Actively participate and support the work of the industry and Airport Operators Association with respect to its 'Sustainable Aviation' programme	Ongoing
29	Liaise with London Heathrow and other airports with respect to non-London Luton overflying traffic, where necessary	Ongoing
30	Work with the LLACC (via NTSC), the 'Flight Ops' committee and NATS to identify airspace improvements which will improve the noise environment	Ongoing
31	Agree key performance indicators and targets for noise 'actions', where appropriate, with the LLACC (via NTSC)	Ongoing
32	Assess the impact of London Luton Airport traffic on the Chilterns AONB and explore potential for operational improvements	Ongoing
33	Attend public meetings on request, where appropriate, to discuss the airport's operations	Ongoing
34	Provide an information pack to first time complainants and those wishing to relocate into the area	Ongoing
35	Formally engage with air traffic control and airline/other operators to help improve noise management/track keeping	Ongoing
36	Host visits from local residents and MPs to discuss community concerns and to demonstrate the Noise and Track-Keeping system	Ongoing
37	Prepare an Annual Monitoring Report, in conjunction with Luton Borough Council, incorporating detailed statistics on all aspects of the airport's operations including passenger throughput.	Ongoing
38	Provide information in the Annual Monitoring Report on progress made on actions set out in the Noise Action Plan	Ongoing
39	Establish a committee with Environmental Health Officers of Local Authorities (Herts, Beds and Bucks) to discuss the impact of the airport's operations and the Noise Action Plan	Ongoing
40	Continue to offer email, telephone and website as options for complaints and enquiries	Ongoing
41	Invite members of the public to visit LLA to review noise and track information	Ongoing
42	Engage effectively and proactively with the LLACC and NTSC	Ongoing
43	Engage with local planning authorities to ensure they are informed about noise matters	Ongoing
44	Review communication material, the noise information pack and the London Luton Airport website with respect to noise/noise management	2015/2016
45	Hold community surgeries to give local people an opportunity to discuss issues in person with representatives from the Community Relations and Flight Operations Department	Ongoing
46	Improve communication with transient and non-based operators/users to ensure environmental and operational procedures are understood and adhered to	Ongoing
47	<p>Develop and implement a Noise Control Scheme to control the noise of aircraft both during the day (0700 – 2300) and night periods (2300-0700), including a Noise Quota System for the night period (2330 -0600) to include:</p> <ul style="list-style-type: none"> • Sanctions in relation to operators of aircraft which land or take off in breach of the QC System • Exclusion of aircraft movements with a QC value in excess of QC2 during the night time (2300-0700) • Details of the procedures to be adopted and measures with the purpose of phasing out night time (2300 to 0700) operations by aircraft with a QC value greater than 1 on either departure or arrival. 	Ongoing

	Action	Timescale
47	<p>(continued)</p> <p>For the Night Quota Period (2330 – 0600) this shall have the following limits incorporated into the scheme:</p> <ul style="list-style-type: none"> • 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 3,500 which, using all reasonable endeavours, shall be reduced at each review until it reaches a point where it does not exceed 2,800 by 2028. <p>For the Early Morning Shoulder Period (06.00 – 07.00) this shall have the following limit incorporated into the schemes:</p> <ul style="list-style-type: none"> • Total annual movements by aircraft in any 12 month period shall be limited to 7000. <p>Review the Noise Control Scheme no later than the first and fourth year after introduction, and every subsequent five years.</p>	Ongoing
48	Report actual and forecasted aircraft movements for the preceding and next twelve months every three months to Luton Borough Council.	Ongoing
49	Implement a progressive reduction in the daytime maximum noise violation limit (NVL) in line with the requirements of the planning conditions	2015
50	Develop a strategy to be submitted to Luton Borough Council for their approval which defines the methods to be used by London Luton Airport Operations Ltd (LLAOL) or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2km ² for the area exposed to >57dB Leq16hr (0700-2300) and above and for night time noise to 31.6 km ² for the area exposed to >48dB Leq8hr (2300-0700) and above.	Ongoing
51	Report forecasted aircraft movements and consequential noise contours (Day, Night and Quota Period) for the forthcoming calendar year annually, which shall utilise the standard 92 day summer contour. Where the area enclosed by the 57-72dB(A) Leq16hr (0700-2300) contour could exceed 19.4 sq km for daytime noise, or the area enclosed by the 48-72dB(A) Leq8hr (2300-0700) contours could exceed 37.2 sq km for night-time noise, an action plan will be put in place to ensure this level isn't breached.	Ongoing
52	<p>Develop a Noise Control Monitoring Scheme and submit to Luton Borough Council for approval, to include:</p> <ul style="list-style-type: none"> • Details of the fixed noise monitoring terminals and track keeping system (vertical and horizontal) • Details of the complaints handling system • Sanctions to be imposed on infringements by aircraft in respect of noise limits and track keeping • Arrangements for the verification of the submitted information <p>Review the Noise Control Monitoring Scheme no later than the first and forth year after introduction, and every subsequent five years.</p>	Ongoing
53	<p>Develop a Ground Noise Scheme and submit to Luton Borough Council for approval, to include:</p> <ul style="list-style-type: none"> • Measures to limit the ground running of aircraft propulsion engines between 2300-0700 • Preferential use of stands and taxiways between 2300-0700 • Steps to limit the use of auxiliary power units (including the provision of fixed electrical ground power to stands and or suitably quietened ground power units) • No ground running of aeroplane engines for testing or maintenance purposes between 2300-0700, and designated areas for such testing between 0700-2300. <p>Review the Ground Noise Scheme no later than the first and forth year after introduction, and every subsequent five years.</p>	Ongoing
54	Develop a Noise Insulation Scheme for residential as well as non-residential buildings.	2016
55	Reduce the night time noise violation limit to 80 dB(A) by April 2015	2015

Community Relations

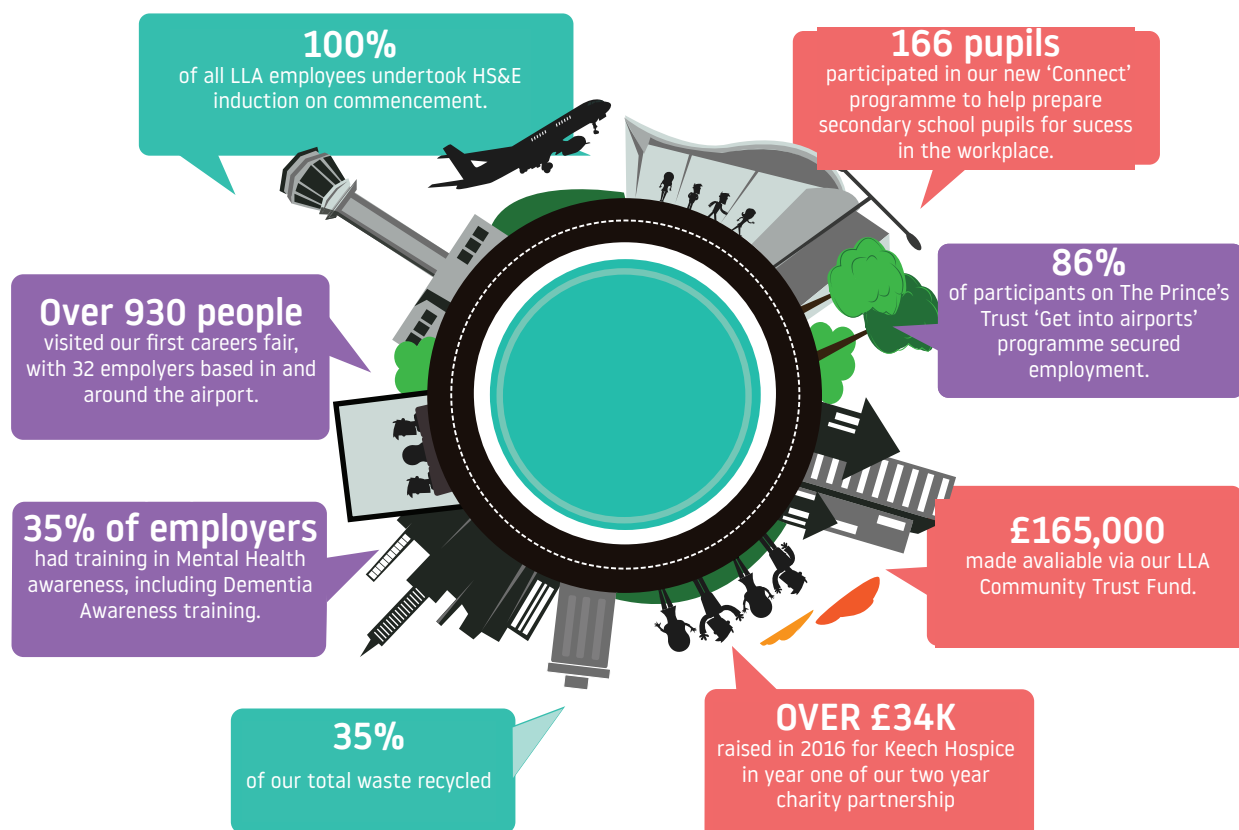
Through the London Luton Airport Consultative Committee (LLACC), which meets every quarter, London Luton Airport maintains a close working relationship with representatives of its local authorities and resident groups. Information on the Consultative Committee including meeting minutes and its representatives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

In 2016, the Flight Operations Team continued the Public Surgery programme. These drop-in events allow local residents to talk to the team face to face to discuss any concerns regarding the impact of LLA's operations. Public Surgeries were held in Flamstead, Breachwood Green, Sandridge, Knebworth, Harpenden and Stevenage, along with an engagement day intended for those communities along the new RNAV Match/Detling route on the 6th October 2016. These will continue to be scheduled in 2017.

The Flight Operations team, also held regular meetings with Ann Main MP, Andrew Selous MP and Stephen McPartland MP. The team also welcomed in local councils from both St Albans and Caddington to discuss the airports noise and track monitoring system and airport tours. Furthermore, the team regularly conducted hand held monitoring in the community.

Community engagement strategy achievements

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 2016 we made ten commitments to ensure that we continued to play a positive role in our local community. We achieved 6 of these commitments, another 3 commitments are a work in progress and we did not meet one of the commitments, we continue to strive towards this. The graphic below summarises the progress made towards these commitments during the year or more details can be found in the Community Engagement Annual Report found on our website [here](#).



Employment

Employment at and surrounding London Luton airport contributes significant economic benefits to Luton as a whole and to the sub-region. A large number of businesses are based in Luton due to the presence of the airport. Thus, any analysis of the airport's impact upon the locality needs to contain an economic perspective, and this includes employment. An analysis of employers within and around the airport boundary has been conducted, the results of which are summarised below.

The methodology used for this year's survey was the same as for the 2015 survey. The Inter Departmental Business Register (IDBR) was used as the main administrative data source - this Office for National Statistics (ONS) dataset is a comprehensive list of UK businesses that is used by government for statistical purposes. It provides a sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR combines administrative information on VAT traders and PAYE employers with ONS survey data in a statistical register comprising over two million enterprises, representing nearly 99% of economic activity. Analyses that are produced as part of this service are at the same level at which business statistical surveys are conducted. (Source: ONS website www.statistics.gov.uk).

An initial list was received from London Luton airport of companies within its boundary. The listing was matched against the IDBR. Companies outside the airport boundary were identified by the street names/areas as follows:

- ❖ Spittlesea Road
- ❖ Part of Frank Lester Way
- ❖ President Way
- ❖ Wigmore House
- ❖ Part of airport Way
- ❖ Barratt Industrial Park
- ❖ airport Executive Park

A handful of Companies who appeared on the list but not the IDBR had imputed estimates from analysis of the size of the enterprise and information from the airport.

Total employment in and around the airport

Employment was measured using main section headings from the Standard Industrial Classification 2007 (SIC 2007). Data has been rounded to the nearest hundred, as per ONS guidelines.

Standard Industrial Classification 2007, Section Names	Total Employees
Accommodation and Food Service Activities	500
Administrative and Support Service Activities	1,300
Financial and Insurance Activities	<100*
Manufacturing	1,100
Professional, Scientific and Technical Activities	<100*
Public Administration & Defence; Compulsory Social Security	<100*
Real Estate Activities	<100*
Transportation and Storage	5,700
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	400
Grand Total	9,300

* - Figures have been suppressed where there are less than three companies in a given Section and/or employment in that sector is less than 100 in accordance with the regulations covering the use of IDBR data.

Due to confidentiality issues Luton Borough Council is bound by Office for National Statistics protocols to round to the nearest 100 when reporting IDBR figures. This will mean that any changes in reported figures will be in multiples of 100 and therefore lie within that range.

The table illustrates that there are an estimated 9,300 employees in and around the airport. This has decreased by 200 on the previous year, a fall of 2%.

Employment by working pattern

The IDBR provides employment figures by full and part time working pattern. The total full time figures (where a breakdown by full/part time was provided) was 7,900 employees. This was a decrease of 300 on the previous year's figures. The figure for part time employees was 1,400 which was an increase of 100 from last year's figures.

The percentage split of full/part time employees found at the airport compared to that found in Luton as a whole is as follows:

	Full Time Employees	Part Time Employees
Vicinity of LLA	85%	15%
Luton UA	70%	30%

Source for Luton UA Figures: Business Register & Employment Survey 2015, latest data. Figures are percentages of those in employment.

Full and part time working patterns in the vicinity of the airport differs from that found within Luton as a whole, with the airport having a higher proportion of full time workers.

Time series

The following figures from 2011 to 2016 show the estimated employment levels in the vicinity of the airport.



Source: AMR Employment Surveys 2011- 2016

There has been small drop in employment between 2015 and 2016 around Luton Airport. There are approximately 9,300 employees working in the vicinity of the Airport which is a 2% decrease on the 2015 estimate.

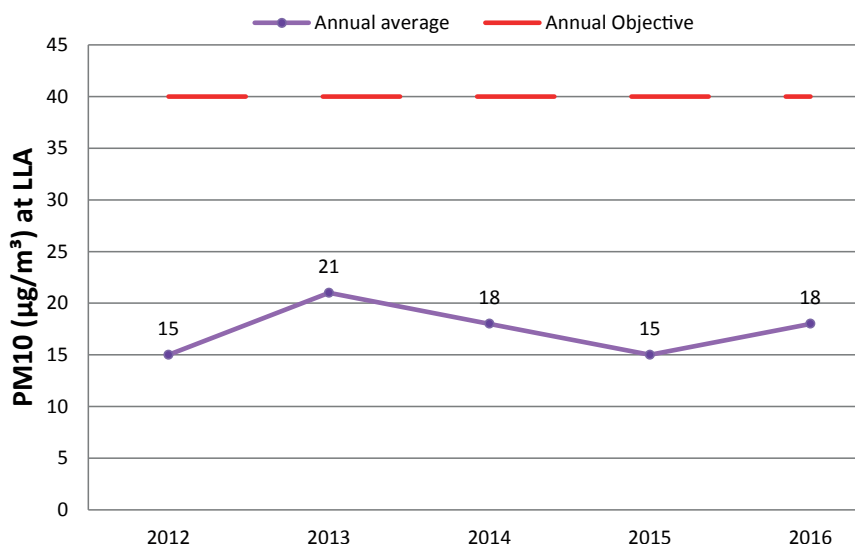
Air Quality

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 <http://www.airqualityengland.co.uk> The parameters we measure are PM₁₀ and NO₂.

PM₁₀ (Particulates measuring 10µm or less)

PM₁₀ is one of the main contributors to reduced ambient air quality. Particulate matter is made up 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.

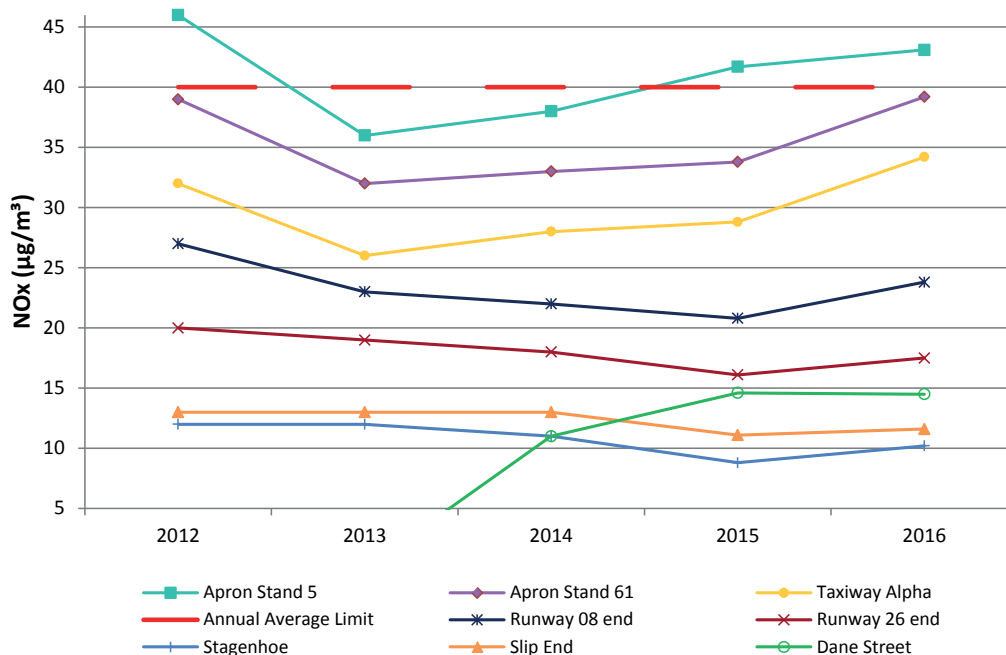
PM₁₀ is monitored from one location in the middle of the airport site. The graph shows that the readings have remained well within the annual mean local air quality objective of 40µg/m³.



Nitrogen Dioxide (NO₂)

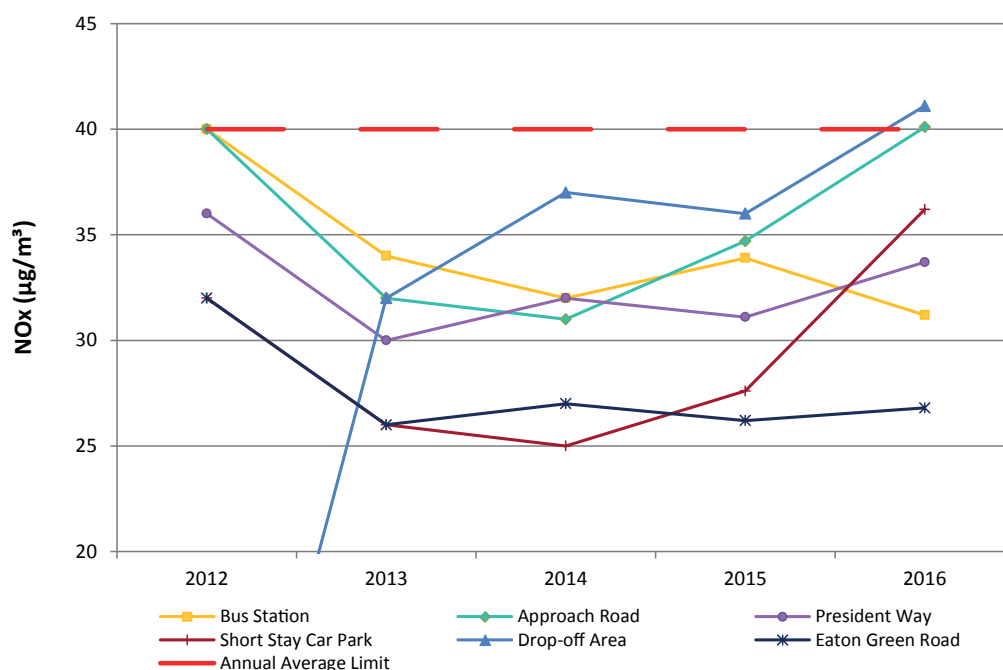
NO₂ in high concentrations can cause a wide variety of health and environmental impacts. The gas is produced from the combustion of fuels such as diesel and aviation fuel. NO₂ is currently measured from 14 locations around LLA, and the results have a bias-adjustment factor applied using national database factors. The annual mean local air quality objective of 40µg/m³ also applies to NO₂.

Airport apron, runway and under the flight paths



NO₂ 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 a location on the main apron and the drop off zone slightly exceeding 40 µg/m³. A significant redesign of the roads and car parks on the approach to the terminal has reduced traffic congestion throughout 2016 and this work is ongoing. A project is also 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 the terminal, 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 2011-2015. The CAA statistics suggest that 31% of airport passengers chose to use public transport in 2015. LLA aims to achieve 40% by

2017. Improving the bus station, and lobbying the rail operators to improve services to Luton Airport Parkway have been the main mechanisms through which LLA hope to achieve this.



%	2011	2012	2013	2014	2015
Drop Off	27	27	28	25	27
Car Park	23	23	23	28	27
Rail	15	17	16	14	16
Bus/Coach	16	16	16	15	15
Taxi	18	17	17	17	16

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 an 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

%	2010	2012	2014	2016
Drive alone	66	66	62	68
Car share	12	8	11	7
Taxi	1	1	0	1
Motorcycle	1	1	1	1
Rail	5	5	10	7
Bus/Coach	7	9	8	9
Cycle	2	2	2	2
Walk	5	6	7	5

Road Traffic and Car Parks

The information contained in this section is based on traffic counts conducted at 8 sites during the period 29th September to 5th October 2016. This period is comparable with previous summer traffic counts and avoids any periods when significant changes in traffic characteristics can occur.

The table and graph below show an increase in 12hr/5day traffic flows between 2015 and 2016 on 4 of the 8 monitored roads, but Vauxhall Way North declined marginally and there is no data for the other three roads in 2016. Looking at trend it is likely that those three roads nevertheless all sustained increases to 2016. From the available data

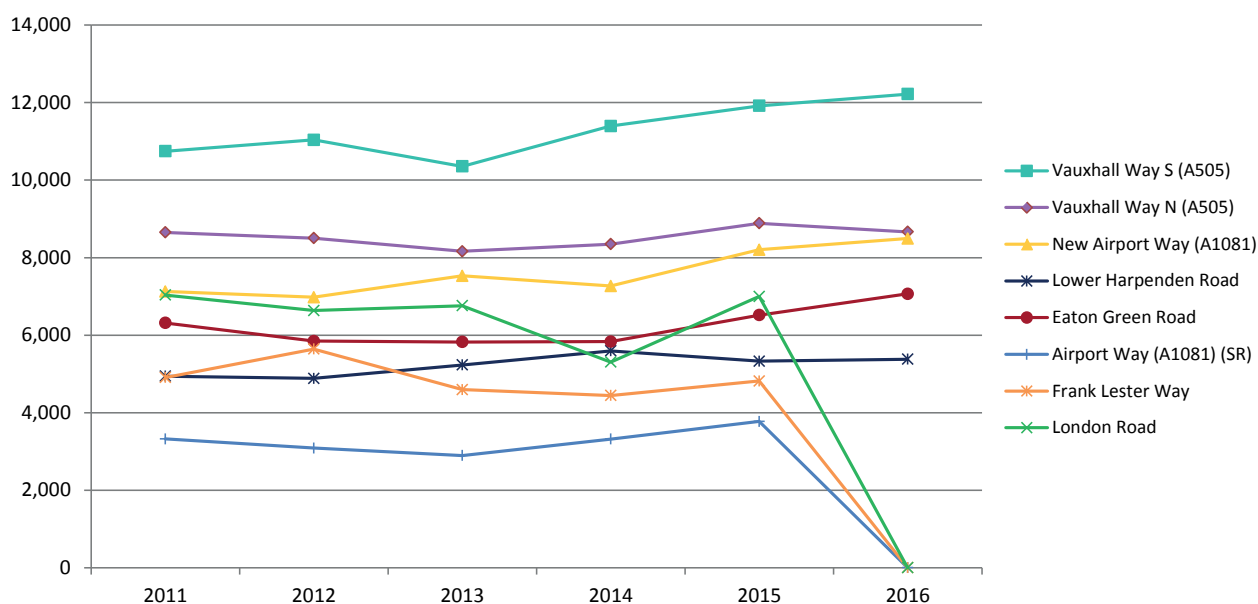
the highest increase on the 4 roads being +551 (+8.5%) on Eaton Green Road. The decrease in traffic was -223 (-2.5%) on Vauxhall Way North Road. It should be noted that the J10a improvement completed and opened in 2016, and so trends previous to its construction, may resume.

Summer 2011 - 2016 Traffic Counts (Average 12 hrs/5 day)

	Map ref	2011	2012	2013	2014	2015	2016
Airport Way (A1081) (SR)	599	3,323	3,088	2,897	3,319	3,775	no data
New Airport Way (A1081)	925	7,127	6,979	7,532	7,268	8,204	8,495
Frank Lester Way	445	4,908	5,642	4,597	4,445	4,818	no data
Sub-total		15,358	15,709	15,026	15,032	16,797	

	Map ref	2011	2012	2013	2014	2015	2016
Vauxhall Way South (A505)	520	10,746	11,039	10,355	11,395	11,917	12,219
Vauxhall Way North (A505)	603	8,652	8,505	8,164	8,348	8,889	8,666
Eaton Green Road	677	6,317	5,849	5,826	5,835	6,517	7,068
Lower Harpenden Road	106	4,942	4,885	5,232	5,594	5,331	5,379
London Road	393	7,037	6,634	6,759	*5,307	7,000	no data
Sub-total		37,694	36,912	36,336	36,479	39,654	
Total		53,052	52,621	51,362	51,511	56,451	

Summer 2011 - 2016 Traffic Counts - average 12 hrs/5 day



* - Site impacted by J10a works

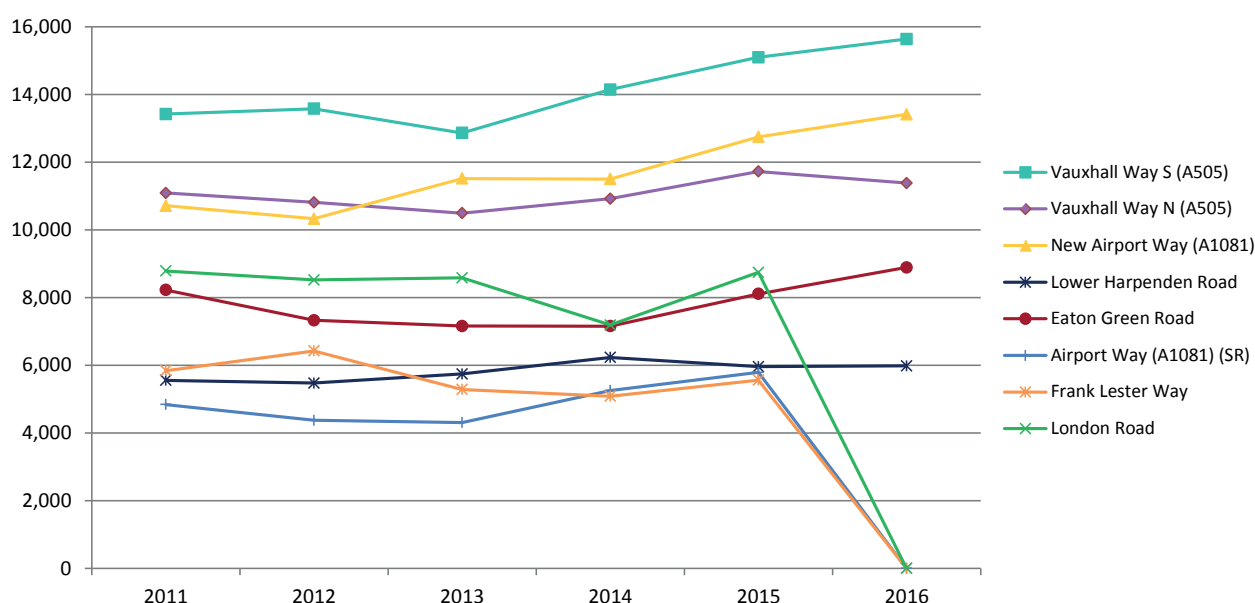
For the 24-hour week (24/7), the table and graph below reveal similar patterns to the 12hr/5day traffic counts where data is available. The highest increase in traffic is +781 (9.6%) on Eaton Green Road, while a decrease in traffic is -340 (-2.9%) on Vauxhall Way North.

Summer 2011 - 2016 Traffic Counts (Average 24 hrs/7 day)

	Map ref	2011	2012	2013	2014	2015	2016
Airport Way (A1081) (SR)	599	4,840	4,374	4,309	5,256	5,791	no data
New Airport Way (A1081))	925	10,714	10,330	11,518	11,503	12,751	13,416
Frank Lester Way	445	5,842	6,426	5,289	5,086	5,564	no data
Sub-total		21,396	21,130	21,116	21,845	24,106	

	Map ref	2011	2012	2013	2014	2015	2016
Vauxhall Way South (A505)	520	13,421	13,582	12,865	14,146	15,101	15,637
Vauxhall Way North (A505)	603	11,093	10,813	10,496	10,924	11,726	11,386
Eaton Green Road	677	8,226	7,330	7,161	7,155	8,109	8,890
Lower Harpenden Road	106	5,555	5,475	5,746	6,232	5,959	5,984
London Road	393	8,788	8,523	8,582	*7,190	8,747	no data
Sub-total		47,083	45,723	44,850	45,647	49,642	
Total		68,479	66,853	65,966	67,492	73,748	

Summer 2011 - 2016 Traffic Counts - average 24 hrs/7 day



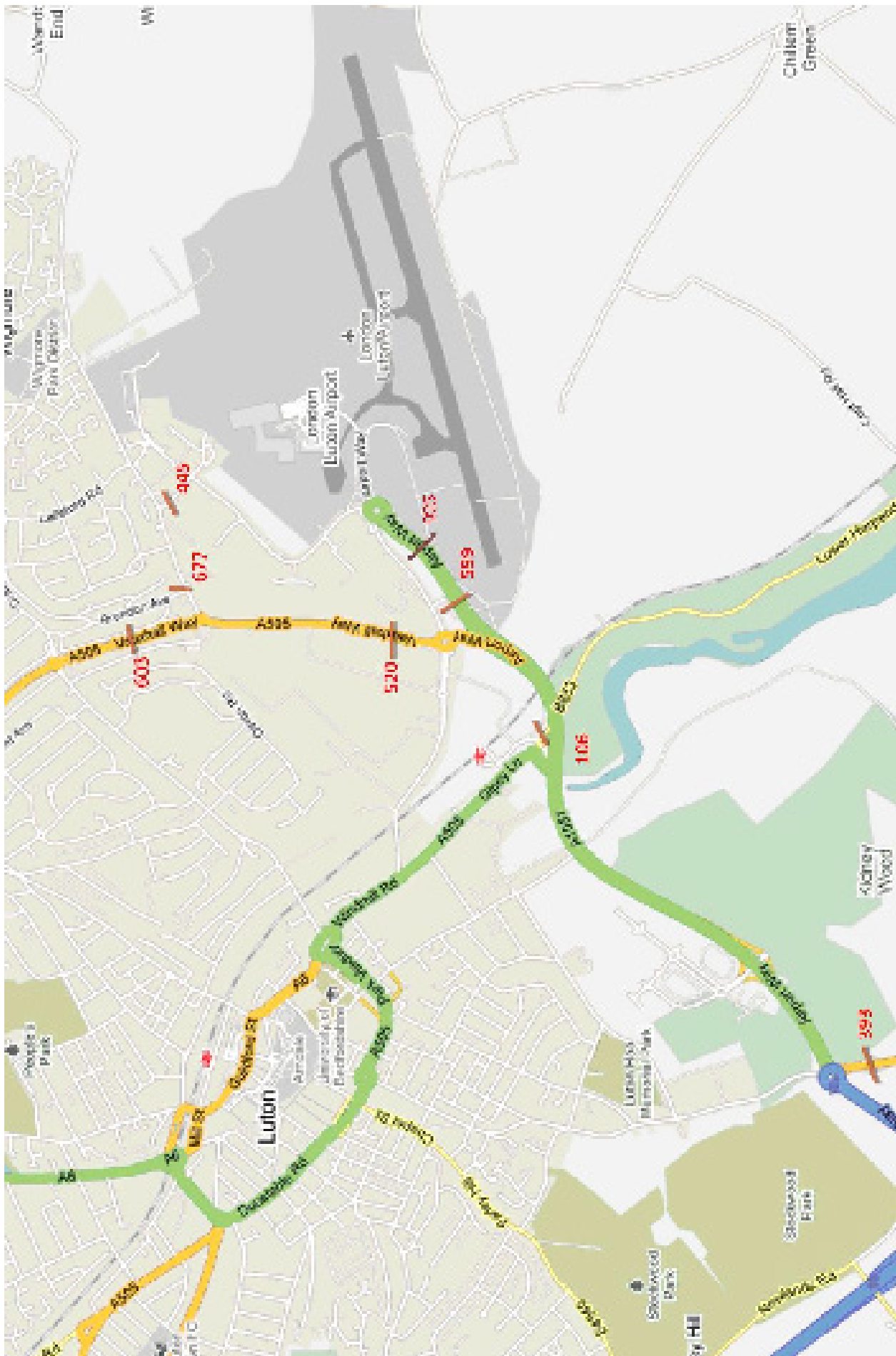
Traffic flow along Airport Way (SR) decreased over the five years to 2013 but increased in 2015 and is likely to again in 2016, as it is now part of the Luton Dunstable Busway route to the terminal and as the M1 J10a improvement works have completed in 2016.

The available data and likely trend indicates that Vauxhall Way axis continues to accommodate the highest traffic volumes in this vicinity. This is due to its strategic location and connectivity to other district and arterial roads into and out of Luton. It is likely that the completion of East Luton Corridor engineering operations and increased activities in and around London Luton Airport have resulted in significant redistribution of traffic flow in the area.

The map overleaf indicates location of these observation points.

* - Site impacted by J10a works

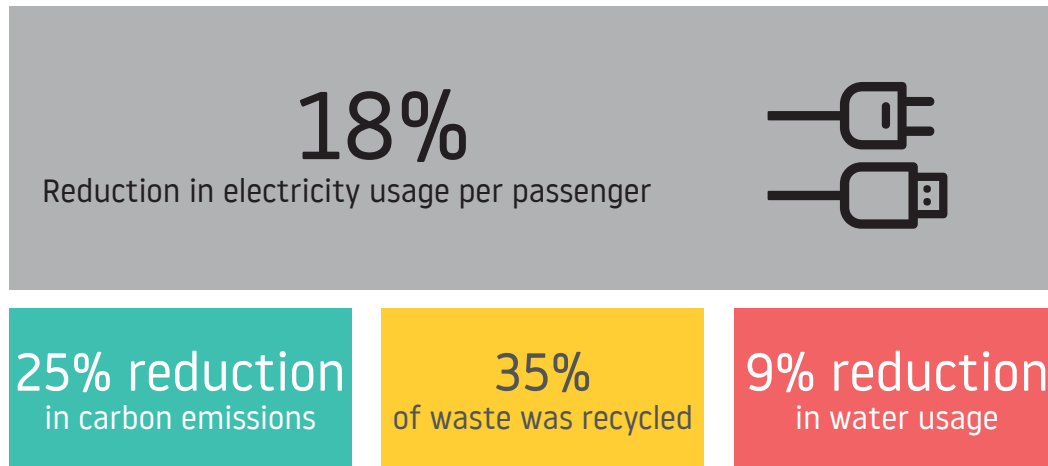
Local Highway Network



Sustainability

London Luton Airport 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 2016 the following was achieved:



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

Sustainable Travel Improvements during 2016

During 2016 a new bus interchange was opened at LLA, providing 7 additional stands and improving safety and access for passengers. Construction works were also undertaken to redevelop the road network, taxi and drop-off facilities at the terminal entrance, and a new multi-storey car park opened providing additional parking near the terminal. Further information on these upgrades can be found under 'Planning and Development'.

Plans for a mass passenger transit system operating between Luton Airport Parkway station and the airport terminal were unveiled during 2016. The MPT system will be a fully-automated, two-way, 24-hour, guided light rail people mover covering a distance of 2.2km. Once complete, the rail link will provide a direct journey between London St Pancras and the airport within 30 minutes. Not only will this encourage passengers to travel by train rather than car, but it will also remove the need for the buses that currently transport passengers between the station and the terminal every 10 minutes. The scheme, being run by London Luton Airport Ltd, is anticipated to be operational by 2021.

Overnight rail services from Luton Airport Parkway began at the end of 2015, making rail a viable transport option for 2-3 million more airport passengers per year, and an uplift in passengers using the trains has been seen during 2016 as a result. LLA have also been lobbying to ensure 4 stops per hour are scheduled at Luton Airport Parkway as part of the refranchising of the East Midlands line due in 2018, providing additional fast services into London.

A staff travel survey was undertaken, along with a report looking into the feasibility of improving coach services to the airport from Northampton. Both reports have been shared with transport operators in order to facilitate transport planning.

Planning and Development

Through its local transport plan, Luton Borough Council (LBC) sets 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.

Planning Applications

On 3rd December 2012, LLA submitted a planning application to LBC for:

“Full planning application for dualling of Airport Way/Airport Approach Road and associated junction improvements, extensions and alterations to the terminal buildings, erection of new departures / arrivals pier and walkway, erection of a pedestrian link building from the short-stay car park to the terminal, extensions and alterations to the mid-term and long-term car parks, construction of a new parallel taxiway, extensions to the existing taxiway parallel to the runway, extensions to existing aircraft parking aprons, improvements to ancillary infrastructure including access and drainage, and demolition of existing structures and enabling works. Outline planning application for the construction of a multi-storey car park and pedestrian link building (all matters reserved)”

The application is a hybrid application, with full details submitted for all of the development except in relation to the multi-storey car park and pedestrian link building, where all matters are reserved for subsequent determination. The application was accompanied by an Environmental Statement (ES), with a scoping request having been made in August 2012 and Luton Borough Council (LBC) having provided its scoping opinion in November 2012 (ref 12/01400/FUL).

The scheme involves the following works within the existing Airport boundary:

- Dualling of the road from the Holiday Inn Roundabout to the Central Terminal Area;
- Safeguarding an extension to Airport Way so as to provide an access route to facilitate the development of Century Park;
- Improvements of the public transport hub adjacent to the terminal;
- Construction of a multi-storey car park and pedestrian link to the western side of the existing short-term car park;
- Extension to the mid-term car park and long-term car park;
- Improvements to the terminal building involving internal reorganisation and minor extensions and building works;
- Construction of a new pier (Pier B);
- Construction of a new taxiway parallel to Taxiway Delta; and
- Taxiway extensions and rationalisation of aircraft parking area with new stands replacing and improving existing stands.

This application seeks to increase the capacity of London Luton Airport to 18mppa from a current capacity of approximately 12mppa.

Airport planning and development

Following on from London Luton Airport's planning consent for a £110m development that was granted by Luton Borough Council in 2014, a number of key milestones have been reached in 2016.

New Temporary Entrance

In April 2016 a temporary entrance was installed to make way for the terminal extension which has made a good progress during the year.

Multi-Storey Car Park

In December the new 700 space multi-storey car park was opened, along with a covered pedestrian walkway.

Aelia Duty Free

The new duty free store opened for business in April. The 1,700sqm flagship walkthrough store has proved very popular with passengers.

In addition to these changes the airport introduced free wi-fi, Auto Bag Drop terminals, additional e-Passport gates and removed the charge for plastic bags in security.

During 2017 the terminal extension is expected to be completed along with a new aircraft pier, dual carriageway access road and the first of two new taxiway extensions.

Below are two images showing an artist's impression of the airport after redevelopment.

Hotel developments

The area around the airport proves to be attractive to hotel developers and operators. The following sites have valid planning permissions for such development –

Site address	Current status of application	Number of bedrooms
Express by Holiday Inn	Implemented	147
Hotel Ibis	Implemented	162
Premier Inn (The Brache)	Implemented	131
Napier Park/Stirling Place	A revised scheme was approved subject to the completion of a S106 legal agreement	200
Hampton by Hilton, 42-50 Kimpton Road	Opened January 2013	188
Ramada Encore, Airport Way	Opened July 2012	124
Airport Way/ELC	Approved February 2011, not yet commenced.	171
Former Mondi Packaging site, Airport Way	Approved April 2013, not yet commenced	156
Former Mondi Packaging car park site, Airport Way	Approved subject to the completion of a S106 legal agreement	120
	Total rooms	1,399

It is envisaged that the demand for hotel accommodation in Luton will grow as the number of passengers travelling through the airport increases.



National Aviation Policy

The Government's White Paper "The Future of Air Transport" which was published in December 2003 was replaced by the Aviation Policy Framework (APF) in March 2013. The APF sets out the Government's objectives and principles to guide plans and decisions at the local and regional level.

In the short term, to around 2020, the APF proposes a strategy based on a suite of measures, namely:

- "making best use of existing capacity to improve performance, resilience and the passenger experience;
- encouraging new routes and services;
- supporting airports outside the South East to grow and develop new routes; and
- better integrating airports into the wider transport network."

The APF makes a number of references to the role that LLA plays in the UK. In paragraph 1.41 it states:

"The demand for aviation in the UK is concentrated in the South East, a densely populated region whose economy comprises multiple high-value sectors including finance, professional services, technology, media and fashion. This drives consistently high demand for aviation in the region, so that the five main South Eastern airports (Heathrow, Gatwick, Stansted, Luton and London City) account for nearly two-thirds of passengers at UK airports and nearly half of all air transport movements."

In terms of the role that LLA could play in global connectivity paragraph 1.79 states: "To improve connectivity at an international level and to help make better use of existing infrastructure at London's congested airports, we announced in 2011 that we would consult on extending the UK's existing regional fifth freedoms policy to Gatwick, Stansted and Luton. The granting of fifth freedoms would allow a foreign airline to carry passengers between these three London airports and another country as part of a service that begins or ends in the airline's home country. For example, a Singaporean airline would be able to operate a service from Changi Airport in Singapore to Gatwick Airport and then on to JFK Airport in the US, picking up passengers at Gatwick Airport and carrying them to New York."

The Government's overall policy on aviation noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise. This is consistent with the Government's Noise Policy for England, which aims to avoid significant adverse impacts on health and quality of life. To this end the Government recognises the International Civil Aviation Organisation's (ICAO) 'balanced approach' which seeks to identify the noise problem at an airport and then assess the cost-effectiveness of various measures to reduce noise. The four main elements are: reduction at source (quieter aircraft); land-use planning and management (including use of conditions and legal agreements to mitigate and reduce to a minimum adverse impacts); operational procedures (how aircraft are flown and their routes to limit noise impacts); and operating restrictions (preventing noisier aircraft from flying to airports).

Local Planning Policy

Luton is preparing its Local Plan 2011 to 2031 and in the summer 2014 consulted on a draft Local Plan (Regulation 18 of the Town and Country Planning (Local Planning) Regulations 2012). In the summer of 2015 the Plan was published for Pre-submission consultation (Regulation 19) and then in the spring 2016 the Borough Council submitted to the Secretary of State for examination with hearings scheduled over 3 separate stages examining the 'Duty to Cooperate' (July 2016), Development Strategy (September 2016) and Development Management Policies (December 2016 and January 2017). The Inspector has been invited to make modifications to the plan to remedy any soundness issues and a Main Modifications consultation is anticipated in March/April 2017. The Submitted Local Plan includes policies to regulate London Luton Airport's growth and environmental performance and to facilitate economic generation and infrastructure delivery via the combined Strategic Allocation comprising Century Park, Wigmore Valley Park and London Luton Airport.

Local Transport Plan for Luton 2011-2026 (LTP3)

The Council was required to submit the third Local Transport Plan (LTP3) to the Government by the end of March 2011 setting out how it would deal with transport matters in and around the town. Whereas the first and second LTPs covered Luton, Dunstable and Houghton Regis, the third plan only covers Luton. The LTP3 comprises two main parts.

The first sets out the long-term Transport Strategy covering the period up to 2026; consistent with the then joint Core Strategy and the Sustainable Communities Strategy. The Council consulted a wide range of partners and stakeholders, including London Luton Airport Operations Limited (LLAOL), in developing this part of the Plan.

Based on recent trends in both passenger throughput and airport employees at Luton, and taking account of recent changes in government policy relating to other London airports, the LTP3 strategy sets out anticipated passenger numbers of between 15.5mppa and 18 mppa by 2026, together with an additional 3000 employees over the same period.

The second part of the LTP3 is the Implementation Plan that sets out local transport schemes and initiatives the Council propose to introduce over the period up to 2014/15. Key elements of the Implementation Plan of relevance to the airport include:

- a focus on smarter choices and travel by more sustainable modes (walking, cycling , public transport supported by employee travel plan initiatives (e.g. car share database)
- implementation of a new northern entrance to Luton Airport Parkway Station
- improvement of M1 Junction 10a, and
- extension of Airport Way to serve planned employment sites east of the airport