

# NOISE ACTION PLAN 2019-2023

## SUMMARY



# INTRODUCTION

**As a 'major' airport (as defined by the Environmental Noise (England) Regulations 2006, as amended) we must produce 'noise maps' and publish a 'noise action plan' every five years. Noise action plans are designed with the aim of 'preventing and reducing environmental noise where necessary', and the Department for Environment, Food and Rural Affairs (defra) issues guidance to help airport operators prepare their plans.**

Under the regulations we must assess, and provide information on, how effectively we are controlling the effect of noise arising from aircraft landing and taking off. We must provide information on our performance in noise maps, together with the numbers of people and homes exposed to a range of noise levels. Since the 1970s we have had a noise-control programme to try to keep the effect noise has on local residents as low as possible.

Today, the programme includes measures ranging from restricting the use of the noisiest aircraft at night through to offering a sound insulation grant scheme. It also shows how we have performed in relation to our previous commitments to managing noise.

Many of our existing limits and targets have their origins in the planning conditions associated with our second runway, and through a voluntary but legally binding agreement under S106 of the Town and Country Planning Act 1990 and it is for this reason that some date back as far as 2001. We recognise that the age and sheer number and variety of these limits could lead to confusion and may sometimes make it difficult to understand and monitor our ongoing performance.

We therefore intend to carry out a review of all our noise related indicators and develop a revised suite of baselines, limits and targets. The review, informed by long-term traffic forecasts produced in support of our forthcoming airspace change proposal, will be undertaken working with our airport consultative committee and Environmental Health Officers from surrounding local authorities. Any amendments or additions to our package of noise measures, will be included for formal adoption, at the time of our next Noise Action Plan review.

We believe that the potential benefits afforded by airspace change and the associated introduction of new technologies and procedures, have an important role to play, in any major review of what is perhaps our most important noise control measure. We therefore believe that such a review should take place in parallel with our airspace change proposal. To enable this, we therefore intend to maintain our existing night noise policy for a further two years. The subsequent review will consider, but not be limited to, seasonal movement limits, QC point budgets and the night time scheduling of noisier aircraft types.

We believe that there could be significant potential benefit from the publication of regularly updated future aircraft noise contours for the airport. This would apply to local communities, planners and developers alike. From 2020 onwards, we will publish predictive noise contours, based upon both five-year and ten-year traffic forecasts.

Our noise monitoring system is made up of monitors which are mainly in areas immediately around the airport. A number of people have suggested that noise monitoring should be carried out in areas much further from the airport. We therefore intend to work with environmental health officers in areas further away from the

airport to identify suitable locations for portable noise monitoring equipment. We will then report the results to the Environmental Health Officers Consultative Group, possibly with a view to extending our permanent network of monitors.

We will ensure that any changes in the distribution of noise that arise due to changes in operations at the Airport, including airspace changes, are considered so that we may offer continue to offer support to those most impacted by aircraft noise. We recognise that there is growing evidence that aircraft noise poses a small but significant risk of some health effects. We are aware of a range of studies with different findings and that the evidence base is varied we look to government to consider the available evidence as it prepares its new aviation strategy, to inform our future actions. We will implement any new policy in full. Notwithstanding this, our work will be guided by our objective which is to limit and reduce, where possible, the number of people affected by noise as a result of the airport's activities.

Our noise action plan will continue to evolve, and our targets, policies and procedures will most likely change as we carry out reviews over the life of the plan. Any change will be aimed at limiting and reducing, where possible, the number of people affected by noise as a result of the airport's activities. We will carry on listening to and working with our neighbours and try to make sure that we continue to reduce the effect aircraft noise has on their quality of life.

## NOISE MAPPING

### WHAT ARE NOISE MAPS?

**In the same way that geographical maps use contours to distinguish between high ground and low ground, Noise Maps use contours to identify those areas that are relatively louder or quieter. Although Noise Maps can be used to provide information on noise levels and the number of people affected, their main purpose is to help authorities produce Noise Action Plans designed to manage noise and reduce noise levels where appropriate.**

### HOW WERE THE MAPS MADE?

Our noise contour maps have been produced by the Civil Aviation Authority, who maintain the UK's civil aircraft noise model known as ANCON. ANCON is a computer model that takes account of things such as the number and types of aircraft departing and landing, where the aircraft are flying, and the time of day or night, to estimate the noise on the ground around an airport. They were provided to the airport in an 'Action Planning Data Pack'. The contents of the Action Planning Data Pack were developed under the terms of the Environmental Noise (England) Regulations 2006 (as amended).

This update includes the details of the 2016 data pack and maps. These contours and associated data are designed to provide a description of the current noise impact of the airport on its surroundings and how it has changed since the publication of the last Noise Action Plan.

## ARE THE NOISE MAPS DIFFERENT FROM THE NOISE CONTOUR MAPPING SEEN PREVIOUSLY?

If you compare the Noise Maps with the noise contour maps previously produced for us or other UK airports, you may notice some significant differences. The Noise Maps in this document have been prepared specifically to help us produce our Noise Action Plan. Noise contour maps are produced using aircraft movements for an average summer's day (mid-June to mid-September), and it has been custom to produce separate maps for only the 16-hour day (07:00 to 23:00) and 8-hour night (23:00 to 07:00). The contours are presented in terms of the 'A-weighted equivalent continuous noise level' (LAeq). The A-weighting is designed to represent the human ear's response to sound.

Under the Environmental Noise (England) Regulations 2006, as amended, noise mapping is carried out every five years using the  $L_{den}$  noise contour – most recently in 2016 – for an annual average day (January to December) for each of the following periods.

- $L_{day}$  – the level in the day, 07:00 to 19:00
- $L_{evening}$  – the level in the evening, 19:00 to 23:00
- $L_{night}$  – the level at night, 23:00 to 07:00
- $L_{den}$  – the level over 24-hours

The  $L_{den}$  figures are produced by combining those for  $L_{day}$ ,  $L_{evening}$  and  $L_{night}$ . To take account of the fact that noise is more disturbing at night-time, before the  $L_{day}$ ,  $L_{evening}$  and  $L_{night}$  values are combined to produce the  $L_{den}$  level, a weighting of 5dB is added to the evening values and 10dB is added to the night values.

Because of these differences, the two sets of contours are not directly comparable.

We recognise that people respond differently to noise, and this makes it difficult to quantify the relationship between noise and annoyance. However, for the purposes of this Noise Action Plan, aircraft noise is considered to be affecting places near the airport if the noise mapping has indicated an  $L_{den}$  value of 55dB or more or an  $L_{night}$  value of 50dB or more. As a priority, aviation policy requires that we should consider any further measures which we could take in areas which Noise Maps show homes exposed to more than 69dB  $L_{Aeq}$  from 07:00 to 23:00. The 2016 Noise Maps showed that there were fewer than 50 properties within this contour.

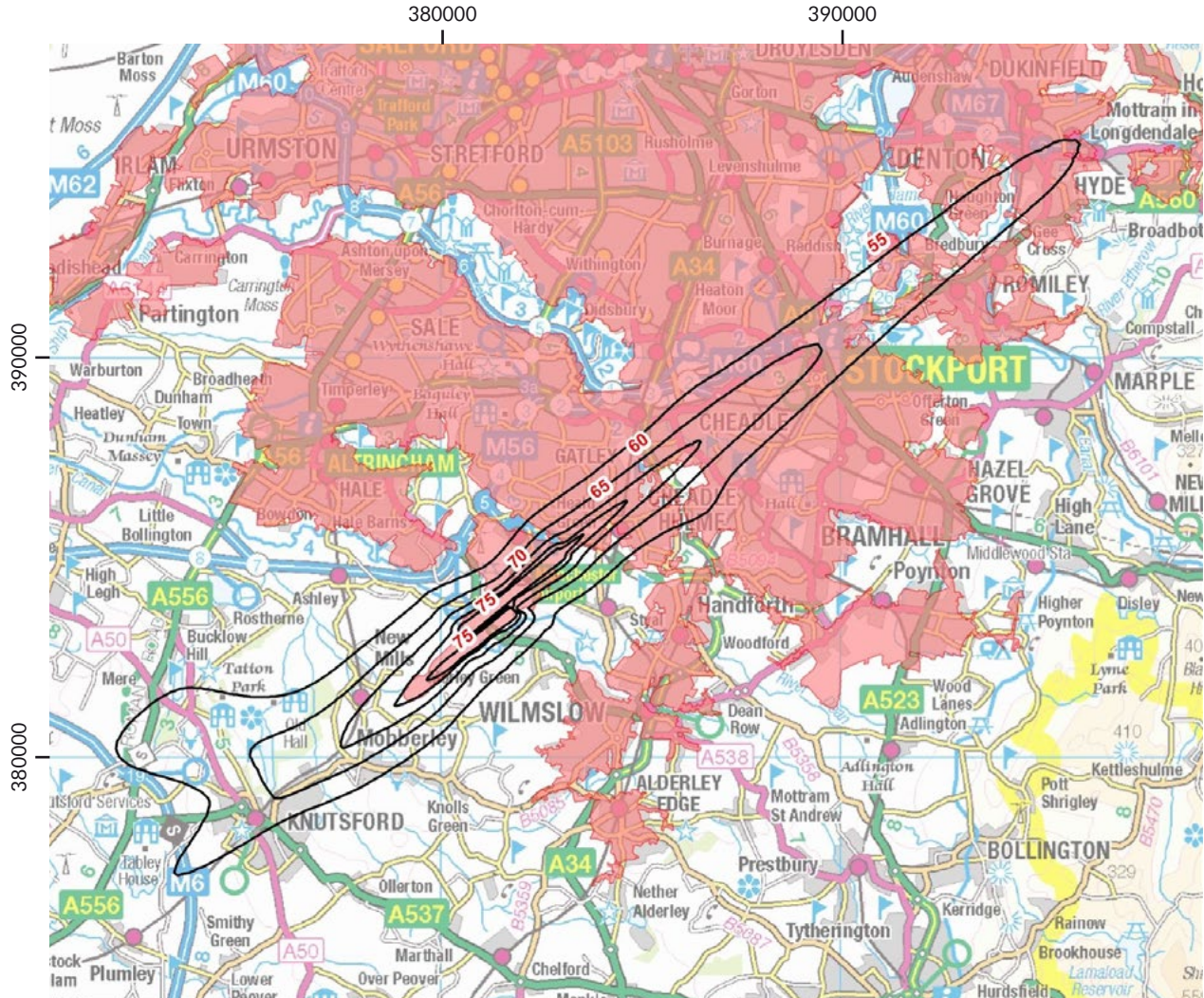
# NOISE MAPPING RESULTS

## WEIGHTED 24-HOUR CONTOUR ( $L_{den}$ )

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
24-hour L <sub>den</sub>											
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
55 or more	68.2	42500	94000	57.5	33800	73400	64.1	46250	102300	28900	8300
60 or more	27.7	13550	31000	21.3	8050	18900	24.2	13100	30000	11100	-1000
65 or more	11.2	1850	4500	8.2	900	2100	9.4	1650	3900	1800	-600
70 or more	4.6	350	800	3.2	Fewer than 50	Fewer than 100	3.9	150	300	0	-500
75 or more	2.1	Fewer than 50	Fewer than 100	1.5	0	0	1.6	Fewer than 50	Fewer than 100	0	0

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WEIGHTED  
24-HOUR  
CONTOUR ( $L_{den}$ )



Department  
for Environment  
Food & Rural Affairs

The Environmental Noise  
(England) Regulations 2006  
(as amended)  
Manchester Airport (EGCC)  
 $L_{den}$

Year – 2016

– 60 – Noise level Contour (dB)

Agglomeration

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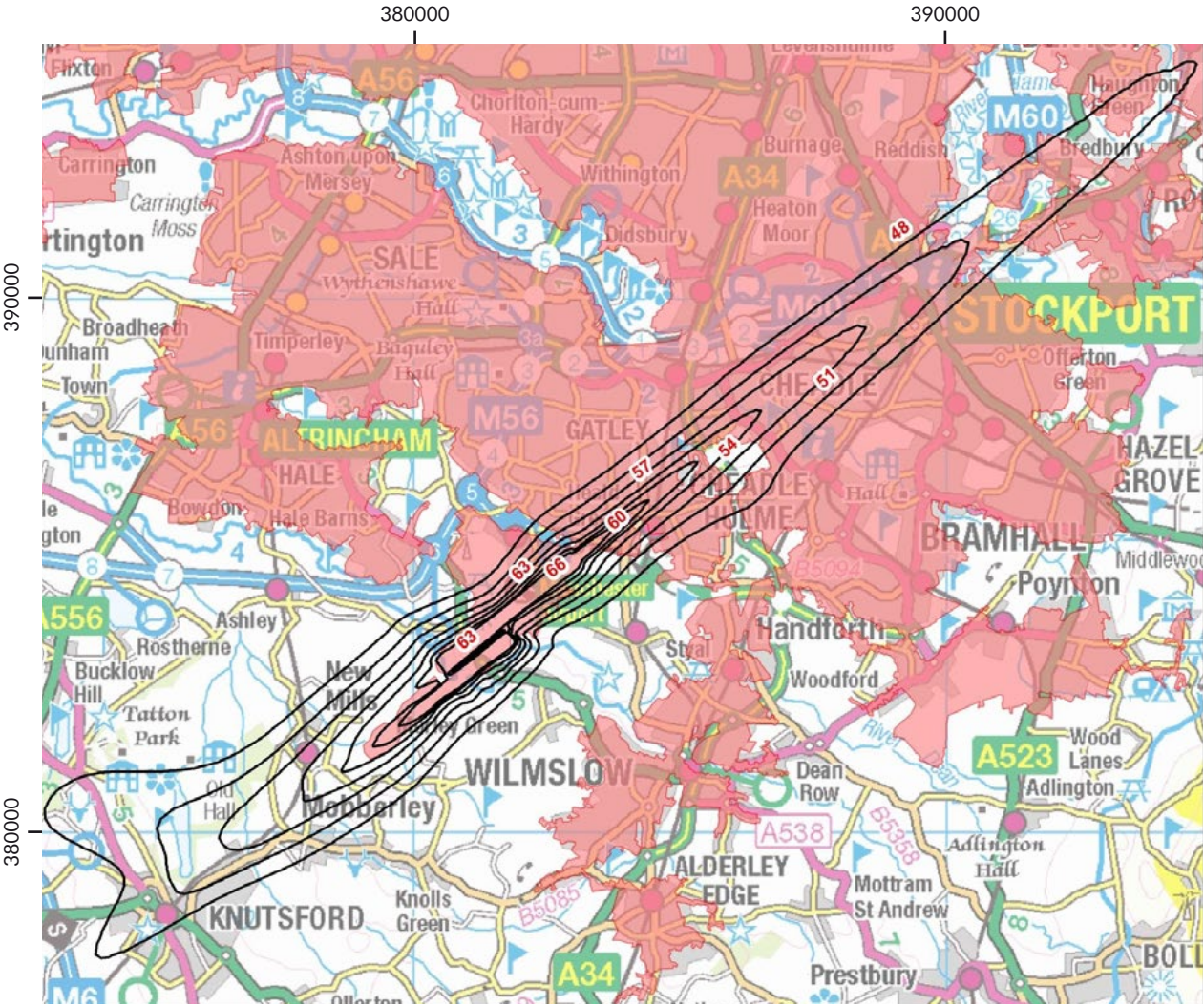
## NIGHT TIME CONTOUR ( $L_{night}$ )

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
Night time (23:00 to 07:00) L <sub>night</sub>											
	Area of Contour (km <sup>2</sup> )	Number of Homes	Number of People	Area of Contour (km <sup>2</sup> )	Number of Homes	Number of People	Area of Contour (km <sup>2</sup> )	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
48 or more	47.2	29700	65100	39.5	22100	48500	49.0	34200	74700	26200	9600
51 or more	27.2	14700	33500	20.9	9250	21300	27.0	15450	34800	13500	1300
54 or more	16	7200	17100	11.7	1950	4800	15.7	5950	14400	9600	-2700
57 or more	9.1	1500	3600	6.8	650	1500	8.7	1600	3700	2200	100
60 or more	5.3	650	1500	4	50	100	5.1	550	1300	1200	-200
63 or more	3.1	100	200	2.3	Fewer than 50	Fewer than 100	2.9	50	100		-100
66 or more	1.9	Fewer than 50	Fewer than 100	1.5	0	0	1.7	Fewer than 50	Fewer than 100	0	0

“We have a number of regulations in place to reduce ground noise at the airport.”

NOISE ACTION PLAN 2019-2023

NIGHT TIME  
CONTOUR (L<sub>night</sub>)



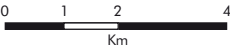
Department  
for Environment  
Food & Rural Affairs

The Environmental Noise  
(England) Regulations 2006  
(as amended)  
Manchester Airport (EGCC)  
L<sub>night</sub>

Year – 2016



– 60 – Noise level Contour (dB)  
Agglomeration



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## 16-HOUR DAY CONTOUR ( $L_{Aeq}$ )

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
16-hour day (07:00 to 23:00) L <sub>Aeq</sub>											
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
54 or more	57.5	30700	67500	46.6	22250	48900	47.5	28550	62800	13900	-4700
57 or more	33.7	15550	35200	26.3	10700	24600	27.2	13700	31400	6800	-3800
60 or more	19.8	5650	13600	14.4	2600	6200	15.5	4050	9900	3700	-3700
63 or more	11.6	1600	3800	8.2	850	2000	8.9	1250	2900	900	-900
66 or more	6.9	650	1500	4.8	150	400	5.3	350	800	400	-700
69 or more	4.1	50	100	2.8	Fewer than 50	Fewer than 100	3.1	Fewer than 50	Fewer than 100	13900	0

## DAYTIME (07:00 TO 19:00) CONTOUR ( $L_{day}$ )

Noise Level (dB)	2006 Data			2011 Data			2016 Data			Changes from Previous Years	
Daytime (07:00 to 19:00) L <sub>day</sub>											
	Area of Contour (km <sup>2</sup> )	Number of Homes	Number of People	Area of Contour (km <sup>2</sup> )	Number of Homes	Number of People	Area of Contour (km <sup>2</sup> )	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
54 or more	61.9	32700	71900	50.7	24000	52500	51.5	30350	66800	14300	-5100
57 or more	36.4	16450	37200	28.6	11600	26500	29.6	14800	33900	7400	-3300
60 or more	21.4	6400	15400	15.7	2950	7100	16.9	4700	11400	4300	-4000
63 or more	12.7	1750	4200	8.9	950	2300	9.8	1450	3300	1000	-900
66 or more	7.5	700	1600	5.2	200	500	5.8	450	1000	500	-600
69 or more	4.5	100	200	3	Fewer than 50	Fewer than 100	3.4	Fewer than 50	Fewer than 100	0	-100

## NOISE ACTION PLAN 2019-2023

### EVENING TIME CONTOUR (L<sub>evening</sub>)

NOISE LEVEL (DB)	2006 DATA			2011 DATA			2016 DATA			CHANGES FROM PREVIOUS YEARS	
Evening (19:00 to 23:00) L <sub>evening</sub>											
	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Area of Contour (km²)	Number of Homes	Number of People	Number of people in 2016 vs 2011	Number of people in 2016 vs 2006
54 or more	43.1	24700	54400	33.7	17000	37700	34.2	21200	47000	9300	-7400
57 or more	24.7	12450	28400	18.8	6500	15400	19.2	10050	23600	8200	-4800
60 or more	14.1	3650	8900	10.5	1600	3800	10.5	2350	5600	1800	-3300
63 or more	8.1	1050	2600	6	500	1200	6	750	1800	600	-800
66 or more	4.7	400	900	3.4	50	100	3.5	150	300	200	-600
69 or more	2.9	Fewer than 50	Fewer than 100	2	Fewer than 50	Fewer than 100	2	Fewer than 50	Fewer than 100	0	0

## NOISE CONTROLS

### ARRIVING AIRCRAFT

#### NAP1: low power/low drag

Aircraft approaching the airport are expected to keep noise disturbance to a minimum by using a low power/low drag procedure. We will continue to work with operators to improve compliance with the published low power, low drag procedure. This includes agreeing a metric which can be measured and reported.

#### NAP2: continuous descent approach

All aircraft approaching the airport between 22:00 and 06:00 are expected to use continuous descent Procedures. We will extend the requirement for continuous descent approach procedures to be used to 24-hour.

#### NAP3 – ILS approach

Aircraft using the instrument landing system must not descend below 2000 feet before joining the glide path.

#### NAP4 – visual approaches

Propeller aircraft whose maximum take-off weight is more than 5700 kg must not join the final approach at a distance less than three nautical miles from the landing point or at a height of less than 1000 feet.

#### NAP5 – reverse-thrust braking

To keep noise disturbance to a minimum in areas next to the airport, pilots should avoid using reverse thrust after landing.

### ON THE GROUND

#### NAP6: reduced-engine taxiing

Through our work with our Sustainable Aviation partners and through our own stakeholder groups, we will try to develop a better understanding of the impediments to reduced engine taxiing at Manchester and assess, promote and monitor take-up.

#### NAP7: APU use

We will introduce restrictions on the non-essential use of auxiliary power units.

#### NAP8: Engine testing

All engine tests above idle power must commence in the engine test bay. Engine testing is not allowed outside the engine test bay between 22:00 and 06:00 on weekdays, and between 22:00 and 07:30 on Saturdays and Sundays.

### DEPARTING AIRCRAFT

#### NAP9: 'off-track' departures

We have an annual limit of no more than 5% off-track departures.

#### NAP10: 'off-track' surcharge

We have a system of financial penalties for flights where airlines persistently fail to keep on the PNRs.

#### NAP11: non-standard departures

We have an annual limit of no more than 5% non-standard departures.

#### NAP12: preferred runway direction

Where conditions allow, we prefer aircraft to take-off in a westerly direction.

#### NAP13: using only one runway

The airport will do its best to keep the use of both runways at the same time to a minimum. Each year we will review opportunities to use just Runway 1, within operational and safety requirements.

#### **NAP14: departure noise surcharge**

To encourage departing aircraft to be flown in the quietest possible way, for flights that generate noise levels above published limits we issue the airline with a financial penalty known as a noise surcharge.

#### **NAP15: 24-hour noisiest 10%**

The average level of noise of the 10% noisiest departures will remain lower than that in 2001.

#### **NAP16: daytime noisiest 100**

The average level of noise for the 100 noisiest departures between 07:00 and 23:00 will remain lower than that in 2001.

#### **NAP17: noise related runway charge**

We will review our noise-related charges, during the course of this Noise Action Plan.

#### **NAP18: departures code of practice**

We will look at the best practice guidance contained in the Sustainable Aviation Departures Code of Practice and continue to examine how this might be rolled-out at Manchester.

## **NIGHT NOISE**

#### **NAP19: night noise policy**

We review our night noise policy every five years to make sure it continues to be appropriate.

#### **NAP20: night-time noise contour area**

The area of the night-time 60dB  $L_{Aeq}$  noise contour will remain smaller than that in 2001.

#### **NAP21: night period noisiest 100**

The average level of noise for the 100 noisiest departures between 23:00 and 07:00 will remain lower than that in 2001.

#### **NAP22: night-time noisiest 100**

The average level of noise of the noisiest 100 departures between 23:30 and 06:00 will remain lower than that in 2001.

#### **NAP23: night noise surcharge**

The noise level at which we apply a surcharge will continue to be lower during the night period (23:00 to 07:00).

#### **NAP24: seasonal QC point noise budget**

Our seasonal QC point noise budgets are:  
Summer 7000 points / Winter 3000 points

#### **NAP25: ban on QC16 and QC8**

Aircraft with a quota count of QC8 or QC16 must not take-off or land between 23:00 and 07:00.

#### **NAP26: ban on scheduling the take-off of aircraft with a quota count of QC4**

Aircraft with a quota count of QC4 cannot be scheduled to take-off between 23:30 and 06:00.

#### **NAP27: seasonal limit on night flights**

Our seasonal night flight limits are:  
Summer 10150 flights / Winter 3895 flights

#### **NAP28: night flight limit**

No more than 7% of total flights can be scheduled to take-off or land between 23:30 and 06:00.

#### **NAP29: engine testing at night**

Engine testing is not allowed outside the engine test bay between 22:00 and 06:00 on weekdays, and between 22:00 and 07:00 on Saturdays and Sundays.

#### **NAP30 – visual approaches at night**

Visual approaches will not be permitted between 23:00 and 07:00.

#### **NAP31 – non-standard departures at night**

Non-standard departures will not normally be issued between 23:00 and 07:00.

#### **NAP32 – use of Runway 2 at night**

Runway 2 will not be used between 22:00 and 06:00, unless it is unsafe to use Runway 1, or Runway 1 is closed.

#### **NAP33 – night-time contour area**

We will report annually the area of the 60dB  $L_{Aeq}$ , 57dB  $L_{Aeq}$  and 48dB  $L_{Aeq}$  8-hour contours

#### **NAP34 – night-time operations**

We will manage the operations of the airport at night to ensure that neither the average noise level of the top 100 noisiest departures or the area of the 60dB  $L_{Aeq}$  contour is worse than recorded during 2001.

## **MITIGATION AND COMPENSATION SCHEMES**

#### **NAP35: sound insulation grant scheme**

#### **NAP36: noise sensitive buildings**

We will consider offering sound insulation to noise-sensitive buildings within the 63dB  $L_{Aeq}$  noise contour

#### **NAP37: home relocation assistance scheme**

#### **NAP38: property purchase**

#### **NAP39: vortex damage repair scheme**

#### **NAP40: community trust fund**

## **MONITORING AND REPORTING**

#### **NAP41: guaranteed access**

#### **NAP42: develop our monitoring system**

We will continue to review and invest in our noise information systems, to ensure that they remain suitable, relevant and effective.

#### **NAP43: daytime noise contours**

The area of the daytime 60dB  $L_{Aeq}$  noise contour will remain smaller than that in 2001 – 25.6 square kilometres.

#### **NAP44: night-time noise contour**

The area of the night-time 60dB  $L_{Aeq}$  noise contour will remain smaller than that in 2001 – 7.8 square kilometres.

#### **NAP45: extra metrics**

We will continue to develop the ways in which we share noise related information with our local Communities.

#### **NAP46: noise complaints**

We will continue to regularly report on the complaints we receive and how effectively we respond to them

#### **NAP47: average noise levels**

Each month we will report the average noise levels on take-off, giving figures for 24-hours, daytime only and night-time only.

#### **NAP48: performance in following preferred noise routes**

We will continue to routinely report on the level of take-offs keeping to our preferred noise routes.

#### **NAP49: environmental performance indicator**

We will introduce a new indicator of the environmental performance of airlines operating at Manchester Airport.

#### **NAP50: low noise arrivals report**

We will review the current continuous descent approach (CDA) reporting procedures in light of a Sustainable Aviation 2018 'Low Noise Arrivals' study. Implement changes where agreed and report progress.

## **EFFECTIVE COMMUNICATION**

#### **NAP51: Community Relations team**

We will keep in touch with local people so that we can act on their comments and continue to respond to community concerns.

#### **NAP52: outreach centres**

We will continue to run our community outreach centres in communities around the airport.

#### **NAP53: community representatives**

We will report details of our progress against the targets we have set ourselves. We will do this through regular meetings with local community representatives.

#### **NAP54: complaints and enquiries**

We will continue to offer a range of ways for people to make enquiries or complaints about aircraft noise.

#### **NAP55: responding to complaints**

We respond to 95% of noise complaints within five working days.

#### **NAP56: Environmental Health Officers Consultative Group**

We will continue to routinely work with local authorities, through the Environmental Health Officers Consultative Group, to develop and report on policies.

