



Community Noise Monitors – Update

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Heathrow

Key messages

- Heathrow is able to resume deployment in 2023
- We propose to immediately deploy three noise monitors in line with 2020 recommendations
- We propose to form a new task & finish group in NACF to agree a process to accept new applications and determine new locations for deployment in 2024

What is Heathrow required to do?

- Heathrow has three obligations for monitoring and measuring aviation noise:
 - It must monitor compliance with noise limits set by the DfT for aircraft that are departing from the airport
 - It must have a noise track keeping system (NTK)
 - It must undertake noise assessments in line with the Government's noise action planning process



Departure noise limits

- Aircraft departing from Heathrow are subject to individual noise limits set by the UK Department for Transport (DfT). The current limits were introduced in 2001. There are three limits in place – one each for the day, shoulder and night-time periods.
 - Day (07:00 – 23:00 hours) **94dBA L_{max}**
 - Shoulder (23:00 – 23:30, 06:00 – 07:00 hours) **89dBA L_{max}**
 - Night (23:30 – 06:00 hours) **87dBA L_{max}**
- L_{max}, or Maximum Sound Level, is a noise level descriptor representing the highest sound level measured during a single noise event (such as an aircraft passing by), in which the level changes value as time progresses.
- Heathrow has 12 permanent noise monitors which are used to monitor adherence. The limits assume that the noise monitors are exactly 6.5km from the start of the point from which the aircraft commences its take-off roll on the runway and at the same elevation as the airfield. In practice, this is rarely possible and so adjustments are made to the limits to take account of any variances in the monitor's position. These adjustments are set by the DfT.

Departure noise limits

- In the event that an airline infringes one of the limits, they are charged a noise supplement with all proceeds going to the Heathrow Community Trust (HCT), which funds community projects in areas affected by the airport's operations.
- Details concerning the allocation of funds can be found at www.heathrowcommunitytrust.org
- Noise fines are charged based upon the table below:

Period	Time	Decibel Limit	Fine per Decibel
Day	7am to 11pm	94	£500
Shoulder	11pm to 11:30pm & 6am to 7am	89	£1,500
Night	11:30pm to 6:00am	87	£4,000

- In 2021 and 2022 there were 3 noise infringements in each year. Historically the number of annual infringements were much higher and this reflects the trend towards quieter aircraft types. Further details can be found on our website: <https://www.heathrow.com/company/local-community/noise/making-heathrow-quieter/departure-noise-infringement-fines>

Noise Maps & Noise Action Plan

- The Department for Environment, Food and Rural Affairs (Defra), working in conjunction with the Department for Transport (DfT), oversees the UK's legal obligations under the Environmental Noise Directive (END).
- The END requires certain civil airports, including Heathrow, to produce noise maps and action plans at least every five years. Heathrow commissions the CAA to produce noise contour maps annually under a commitment in its Noise Action Plan. Heathrow also commissions CAA to produce the strategic noise maps every five years to support noise action planning and then it submits draft action plans for adoption to Defra.
- The action planning process uses the mapping results and is designed to manage noise issues and effects arising from aircraft departing from and arriving at those airports. Heathrow is required to publicly consult on proposed actions to manage its noise impacts in line with the Government's stated noise policy objective.
- The END operates in five-yearly cycles. The current cycle is from 2019, using data from 2016. Heathrow is now consulting with stakeholders on the next cycle, which will result in a new action plan being submitted to Defra in September 2023. It is then published within 28 days of Defra's adoption.

What needs to be included?

- The action plan must be drawn up for places near the airport which are affected by noise from airport operations as shown by the results of the noise mapping and meet a number of requirements set out in the Regulations.
- These include (but are not limited to):
 - a summary of the results of the noise mapping, including an evaluation of the estimated number of people exposed to noise
 - identification of problems and situations that need to be improved
 - any noise reduction measures already in force and any projects in preparation
 - actions which the airport operator intends to take in the next five years

How do airports achieve the requirements?

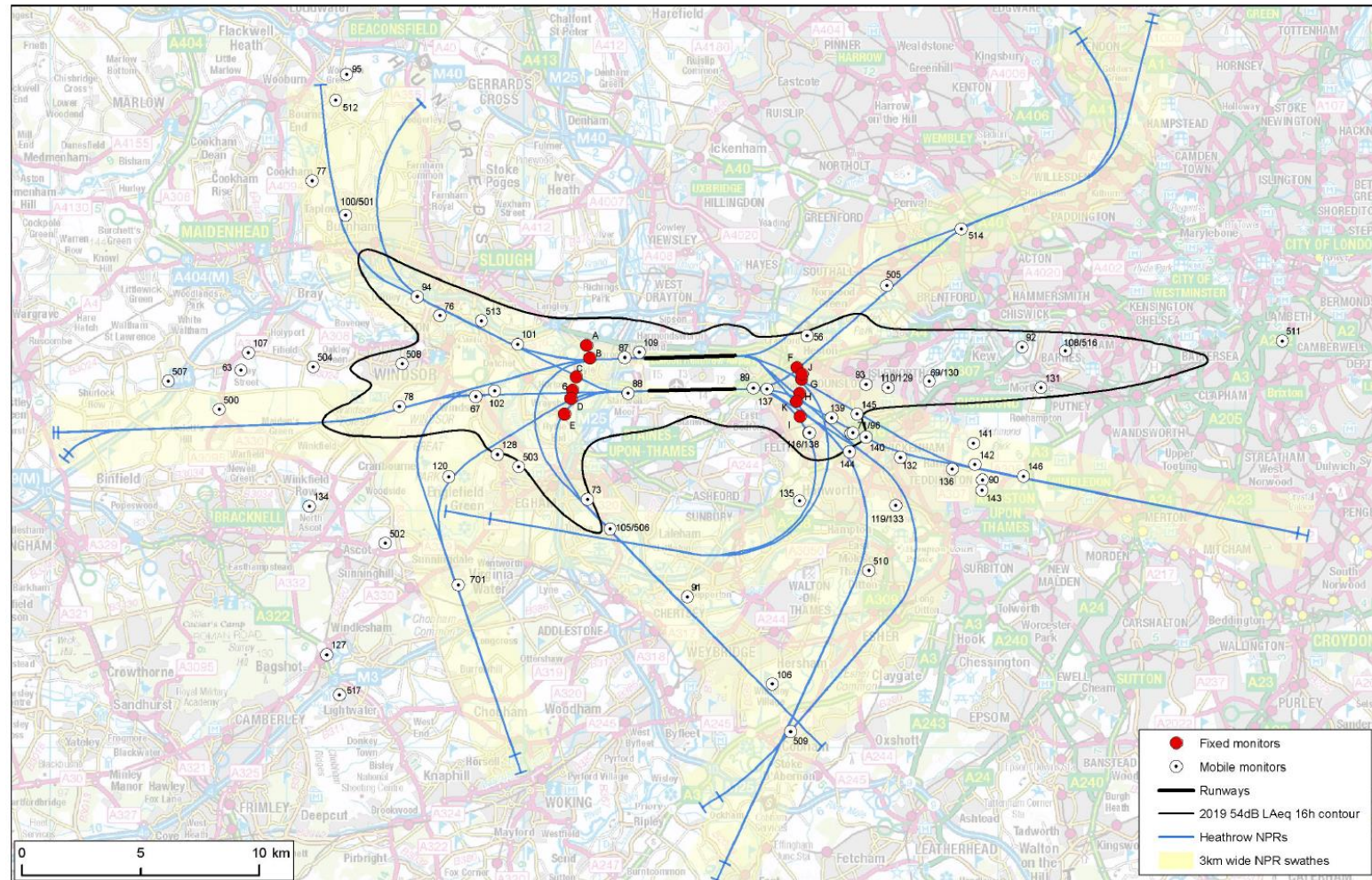
- It is important to understand that while there are maximum noise limits set for occupational noise exposure, there is no limit defined for environmental noise, including aviation noise.
- The Government expects that action plan requirements set out in the END are instead achieved through noise mitigations and other noise control measures that support its overall policy objective to, “limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.”
- These include initiatives such as:
 - Planning conditions or agreements to constrain operations (noise contour limits, noise limits on departure, aircraft movement limits)
 - Noise insulation schemes for residential premises exposed to noise levels greater than 69 dB $L_{Aeq,16h}$
 - Aircraft noise abatement procedures (AIP)

How do noise monitors help?



- The data obtained from noise monitors assists in producing noise maps. This helps airports to understand the impact of their operations on their surroundings. Noise maps show the number of people and dwellings that lie within the various contour bands. They may also provide information about other noise sensitive premises such as hospitals, schools other premises or specific types of land use depending on local circumstances and priorities.
- Noise maps for Heathrow are produced by the Environmental Research and Consultancy Department (ERCD) of the Civil Aviation Authority. The noise exposure contours are generated by the UK Civil Aircraft Noise Contour model (ANCON), which calculates the emissions and propagation of noise from arriving and departing aircraft.
- To validate the noise mapping, ERCD collects noise measurements from Heathrow's monitors to produce standard average summer day $L_{Aeq,16h}$ noise contours. It uses the 12 fixed (permanent) noise monitor sites and additional mobile monitors deployed at more distant locations to measure the noise of specific operations, for example to study departure noise along a specified route.
- There is no requirement to have noise data at any distance outside summer day $L_{Aeq,16h}$ contours, so the CAA states that generally noise measurements at UK airports tend to be restricted to locations within and just beyond the 54 dB contours. However, Heathrow places monitors well outside these boundaries.

Where are the monitors positioned (CAP1149)?

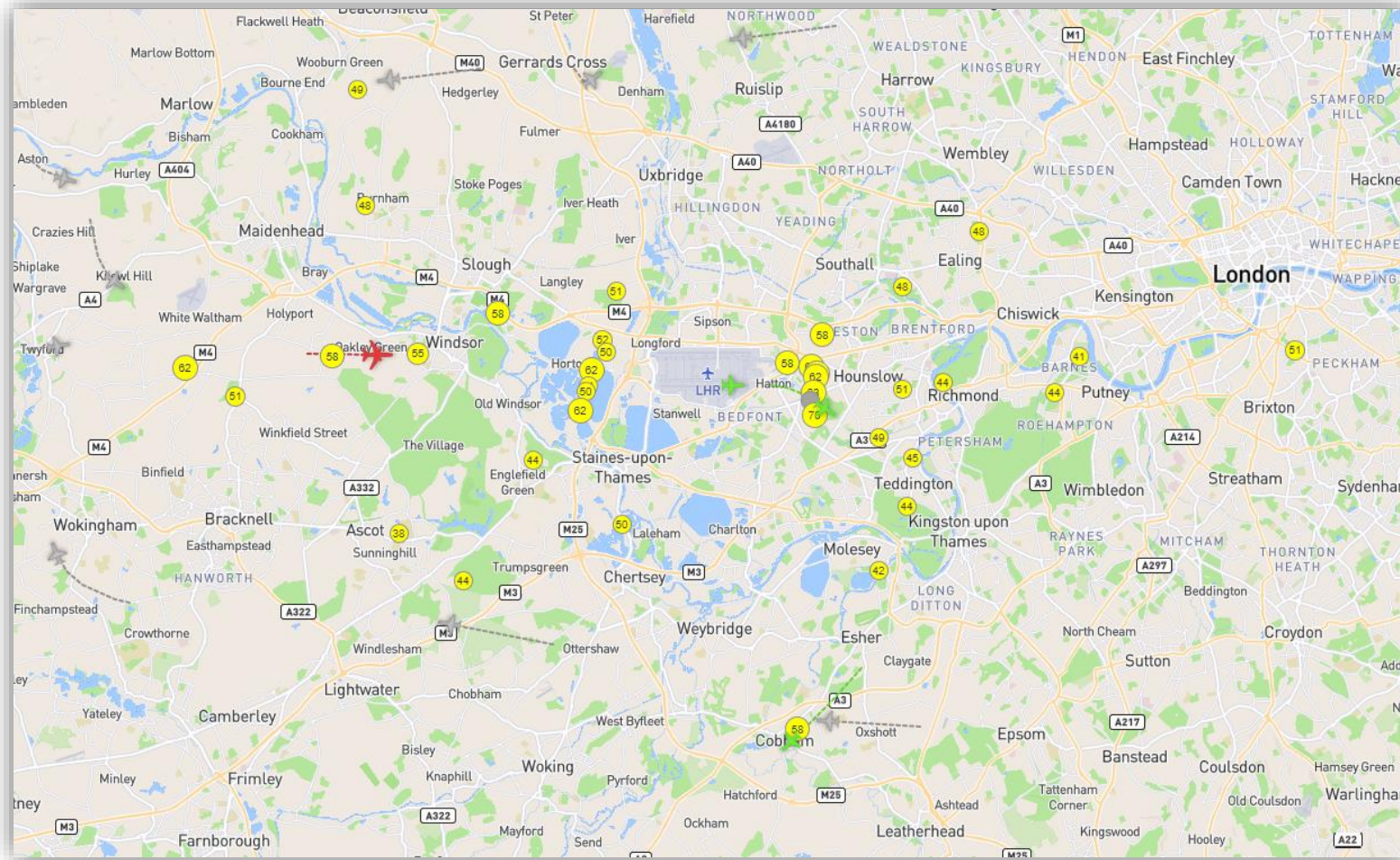


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CAP1149

Ed.8 March 2022

Where are the monitors positioned (WebTrak)?



WebTrak

What are they used for?

Monitor array and purpose as at Sep 2019:

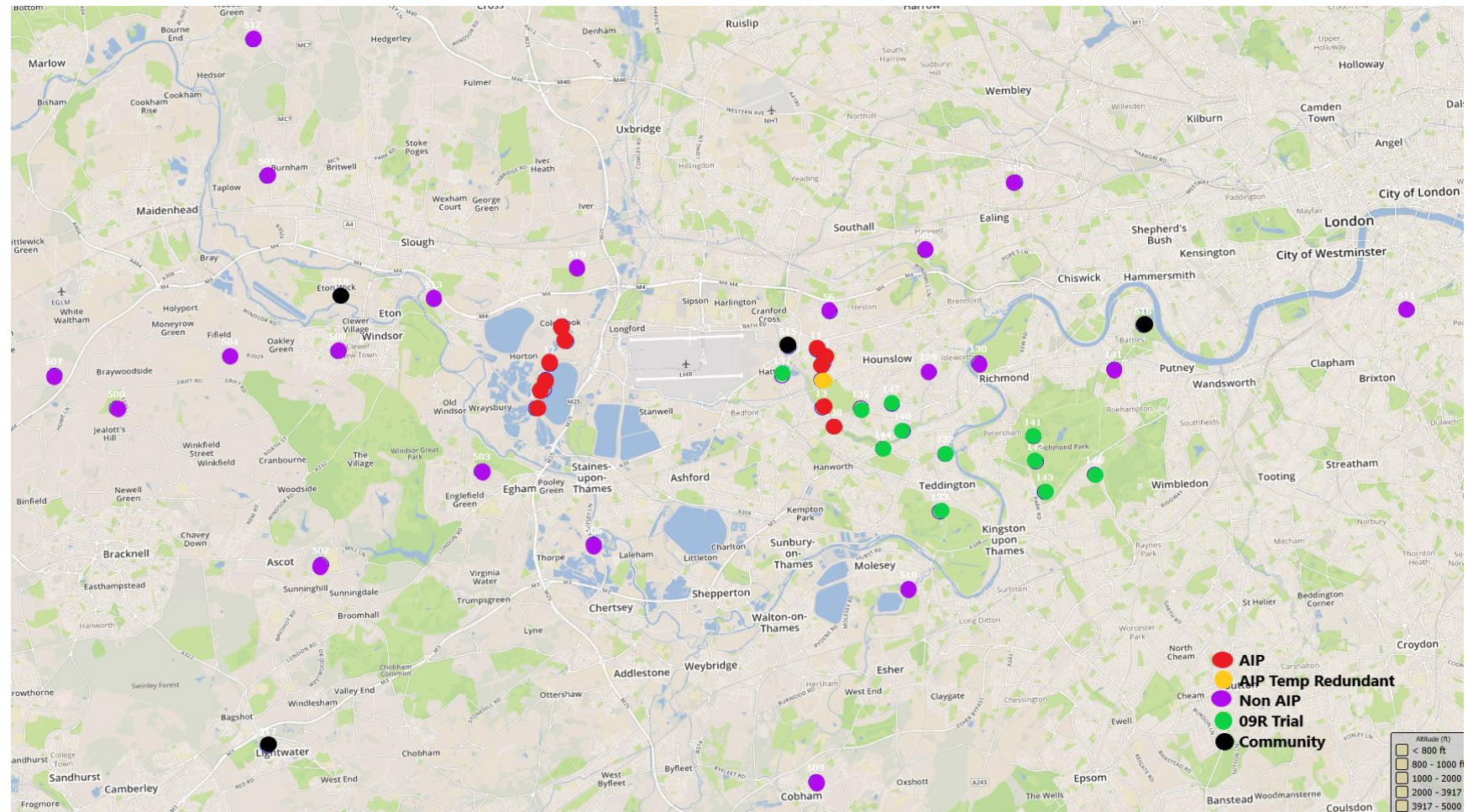
RED – AIP regulatory fixed monitors (Orange temporarily redundant)

GREEN – airspace trials (09R Steeper Departures)

PURPLE – Heathrow NTK data, various deployment periods

BLACK – Community Noise Monitors 2019 x 4

47 total



Note that some spares are kept in inventory to allow maintenance, repair, replacement and factory recalibration.

What about community noise monitors?

- Noise monitors at Heathrow are either referred to as fixed (or permanent), or mobile. Fixed monitors measure departure noise limits. Mobile monitors assist annual noise contour mapping and air traffic management improvement initiatives, and they tend to be placed under arrival and departure routes.
- It is important to understand that mobile monitors are not a strict requirement beyond assisting the mapping process, nor is the determination of their number and location.
- Since 2017, the term “community noise monitors” has become more widespread. Under Heathrow’s Noise Action Plan, each year the airport has offered a limited number of monitors (usually four) to be placed in community locations where requests have been received. This is a voluntary commitment.
- Each year, following data collection and reporting, the monitors are moved to new areas if possible where further requests have been received – depending on priorities and resource.

What does the Noise Action Plan say?

- Following a commitment to communities as set out in our Noise Action Plan, we have provided additional noise monitors at locations further away from the airport to assist our understanding of aircraft noise and to help us shape future policy commitments, which remain in place.
- We suspended community deployment due to the impacts of Covid-19 but we are able to resume offering a limited number of monitors in 2023.
- Since 2017, the locations have been agreed through the Heathrow Community Noise Forum (HCNF). HCNF changed its name to the Noise and Airspace Community Forum (NACF) in 2022, when an independent chair became appointed. This collaborative work determines a process for how the small number of available mobile monitors can be used in different community locations.

What will we do in 2023?

- The **Wentworth** monitor was deployed immediately prior to the onset of the pandemic and has remained in place since then. We propose to deploy the remaining three monitors in **Kiln Green**, **Stanwell Moor** and **Walton on Thames**.
- We will need to determine and secure suitable sites (landowner agreements, contracts, servicing).
- We propose that NACF members form a 'task & finish' group to receive applications and determine locations for 2024 onwards.

What is the process?

- Requests may be received through the NACF, or to Heathrow directly via the Airspace and ATM Performance Team.
- The request is validated by a working group of the NACF. The WG is comprised of a balance of industry and community members.
- The data gathered by noise monitors should be prioritised where it can be used to support strategies that improve ATC and airline operating procedures, noise abatement procedures, identification of new noise initiatives, or other projects that support the Government's noise policy objective.
- The requested zone or impact area will be assessed to determine the number and types of properties and dwellings affected, to benefit as many people as possible.
- Deployment needs to take into account the availability of assets and resource, landowners' permission, required timescales, and the priority and benefit of the monitor versus the limited resource availability.

Heathrow