

# *Heathrow Third Runway Project*



## **Environment Impact Assessment**



**Version No:** Iteration Three

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## Table of Contents

1. Introduction .....	3
2. Description of the Development.....	3
3. The Need for New Runway .....	4
4. The Main Alternatives.....	4
5. The Construction Process .....	4
6. The Environmental Statement.....	4
Carbon Emissions .....	4
Noise .....	5
Air Quality .....	5
Biodiversity .....	6
Water Quality and Flood Risk .....	6
7. References .....	6

## 1. Introduction

If we start with the nature of the development at Heathrow, we understand that Heathrow has been running at almost full capacity now for several years, and there is a pressing need for growth at the Airport to accommodate this expansion. Heathrow ranks number 6 on the world's busiest airport list supporting just under 75 million passengers in 2015.

Its location and size, Heathrow is situated in west London 14 miles away from the centre of the City of London, it has two parallel runways located to the south and the North of the main terminals facing east-west. The total coverage of the site is about 12 square kilometres. So, by this we can tell that this development is going to have a significant impact in the environment.

Heathrow's plan for expansion, was recommended by the Airport Commission in 2015, after it being previously identified by the department of Transport in 2000. Several revisions to the plan have been made following a consultation with various stakeholders through the Airport Commission process. Issues concerning the local communities, both regionally and nationally have been addressed, the number of houses to be purchased has been reduced, and new green spaces and flood mitigation will be introduced as a result.

## 2. Description of the Development

Originally designated 'London Airport', London Heathrow Airport (LHR) officially opened in May 1946 after it had been transferred from military to civilian control in January of that year.

London Airport was constructed at Heathrow on a site which was originally selected during the war for conversion into an RAF aerodrome. At that time, it was intended that there should be three runways forming a triangle, all to the south of the Bath Road. Work was begun but not completed when the war ended and the aerodrome was not in fact used by the RAF. As early as 1943, before the development of the site was begun, the department of Civil Aviation of the Air Ministry realised that Heathrow would be a suitable site for the construction of London's major civil airport, in place of Heston which was no longer thought to be satisfactory.

A layout plan was subsequently set up and reported in 1946, this proposed three main stages in the plan of development. Stage I covers the completion of the runways begun for the RAF, with temporary terminal buildings on a site between the triangle of runways and the Bath Road. Stage II allows maximum air traffic capacity south of the Bath Road, with the use of six runways. Such portions of the permanent terminal buildings as are needed to meet requirements will be completed and all the areas allocated for aircraft maintenance will be available for development. Stage III, the final stage, includes use of land north of the Bath Road, the road itself being diverted north of the airport. There will then be nine runways. The three stages were originally expected to be completed in 1946, 1949 and 1953 respectively. The construction of the last three runways on the land north of the Bath road, under Stage III, involves diverting the road itself some distance to the north and demolishing several houses. It was agreed that, as alternative accommodation for the present occupants has first to be provided, the runways cannot be completed for many years.

Considering the long-term plan, Heathrow plans to have two main passenger terminals and transport hubs, Heathrow West and Heathrow East. An overhauled cargo facility with double its current capacity, new land set aside proposed for new offices and hotels. Up to 740,000 flights per year with the addition of a third runway, that is enough for Heathrow to compete with Charles de

Gaulle Paris, Frankfurt, Amsterdam, and stop worrying about expansion again until 2040. Heathrow is expecting 30 million more people by 2030, will be travelling to Heathrow on public transportation, so the rail capacity needs to go up from 5,000 to 15,000 per hour.

### **3. The Need for New Runway**

The leading reason for new expansion at Heathrow is to enhance the economic growth of the UK. Heathrow is a major hub airport in the UK, and it is able to attract many passengers through direct or transfer flights. It is one of the world's busiest airports, based on number of international passengers. Heathrow's location helps London compete with other countries for business investment, which in turn boost the economy for the rest of the UK. If Heathrow is not expanded the UK risks falling behind other European competitors and the economy will shrink.

Heathrow is on the brink of reaching its maximum capacity, which mean that the future can only be met with increased flight delays, and more disruption. The government estimates that building a third runway will bring an estimated 5.5bn boost to the economy between 2020-2080. But every year that the decision is delayed cost the economy £30bn. Even though the number of passenger decline in the 2008 global recession, demand and increase rose quick after the economic recovery.

By adding a third runway at Heathrow interconnection flights in the UK could be improved, also its attractiveness to large airlines has dropped due to limited space. Heathrow could be more resilience to disruption, and so waiting times for aircraft to land will be reduced. With HS1 proposed to be joining with Heathrow more passenger will be funnelling into the airport putting addition pressure on its capacity.

### **4. The Main Alternatives**

#### **Rail alternative**

In a case against the expansion at Heathrow, travelling by rail has a much lower carbon emission recording per passenger than a flight with the same number of passengers. Some of the most popular destinations people use Heathrow for such as Amsterdam at 27 flight per day can be served by fast rail links, including other destinations such as Manchester, Paris, Edinburgh, Glasgow, and Lyon.

### **5. The Environmental Statement**

#### **Carbon Emissions**

One of the largest single sources of carbon dioxide emissions comes from the exhaust fumes on aeroplane. Currently it represents 6.4 percent of UK carbon dioxide emissions, 3.1 percent of this is the responsible of Heathrow, which is about 18 million tonnes of carbon dioxide per year. With the expansion of Heathrow with the third runway in place it is expected that the carbon emission will go up to 25 million tonnes an increase of 32 percent. The government say that emission from aviation can rise if other sectors compensate by cutting down their emissions. The carbon assessment

considered by the Airport commission considers the impact of carbon on the increased airport capacity, ground movements and airport operation and the construction of a new facility.

The report assesses the carbon impacts of aviation using the Committee on Climate Change (CCC) carbon limit of 37.5 Million tonnes per year of Carbon Dioxide (37.5MtCO<sub>2</sub>). One of the biggest flaws I believe in their assessment is their need only to calculate ground movements and leave out air movements, meaning that a critical portion of environmental damage is missing. Another method used to misrepresent carbon damage is carbon emission trading where richer countries can buy extra carbon allowance to meet specific targets, reasoning that they are utilizing poorer countries carbon allowance.

Mitigation of this problem does not give any satisfaction to climate change believer, because the report say that even if we were to build a second runway at Gatwick the carbon emission will be equivalent to that of Heathrow's based on their portions.

## **Noise**

Noise is another big environmental issue at the development at Heathrow, and the commission approached this task by developing a noise soundcard, which splits the appraisal of noise into separate time allotments, spanning from 7:00am – 11:00pm, 11:00pm – 7:00am and the full 24 hours. The assessment not only recognised the intensity of the noise level but also the number of flights that are experienced due this allotted times. For the purposes of specifics day noises were measured to see if the 57-decibel level metric used by the government was exceeded and if so by how much. Night noise were measured against 48 decibel level and for the full 24 hours, noise levels were measured against 72-decibels. These tests were conducted again using European standards, which puts more weight on noises that occur during the evening time over ones that occur during the day. They say that noise should be around 55-decibels, and not exceed 75-decibels.

Local communities around the site of the existing development at Heathrow have put significant pressure on the government to reduce the noise around their dwellings. Studies conducted say that excessive noise can contribute to sleep disturbance, which in turn can increase risk of hypertension, and sleep disorder.

So, the government is considering how they might mitigate or address these issues. They say that aviation noise is predicted to go down because as new fleet of aircraft are built they will incorporate new more quieter engines, and they will be capable of steeper take-offs and landings which reduce the amount of time the aircraft flight low.

## **Air Quality**

Proper assessment of the air quality impacts of an airport expansion scheme is important to enable an understanding of that scheme's likely impacts on human health. Moreover, limits on air quality are enshrined in domestic and European legal frameworks; the delivery of any scheme would be dependent upon compliance with these frameworks

In respect of the Heathrow Airport Extended Runway scheme, the Commission notes that even assuming that all the quantified mitigating actions were effective, it would not be possible to state reliably that NO<sub>2</sub> concentrations on the Bath Road would be lower than those on the Marylebone

Road by 2030. In order to render the scheme compliant with the Directive, it may be necessary to consider more dramatic mitigating actions, above and beyond those which the Commission believed it was credible to assess at this stage.

## **Biodiversity**

The scheme is expected to take up land where bird and animals reside, in their natural habitat. These biodiversity impacts could all be mitigated to a degree through good design and operations, and for all of the schemes an Appraisal of Sustainability (for which the Commission's analysis may provide a valuable foundation) and new public green space being proposed by Heathrow Airport Ltd, while not having a strong biodiversity impact itself, could help to reconnect areas of high biodiversity, allowing populations to move between these areas and not become isolated.

## **Water Quality and Flood Risk**

The quality of water we drink and the risk of destruction by flood, is an important environment issue to many of the occupants in and around Heathrow and its developments. That is why the need to mitigate these issues are apparent. The development at Heathrow would require the diversion of more than one natural watercourses, which could inhibit the quality of water that Heathrow can get access too without importing it from other sources. Heathrow does have experience does these kind of work before, when it successfully rivers so as to build Terminal 5, and it is expected that they will work alongside the Environment Agency, the regulators of water quality to deliver this changes.

In respect to flood risk, almost the same rules apply. Heathrow will need to build bigger and longer culvert when diverting these rivers to plan for extra water coming through its drains it times of heavy rainfall.

## **6. References**

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