4. The Need for Additional Runway Capacity in the Midlands

4.1 Midlands Forecasts under National Policy Scenarios

The potential need for a new runway in the Midlands was identified in both the RAS study for the Midlands and the subsequent RASCO study.

This work indicated that:

- passenger demand at Birmingham airport is forecast to exceed the capacity of a single runway before 2030 under all the National Policy Scenarios set out in Section 3.1, with the exception of the UK-wide Constrained scenario.

- under the UK-Wide Constrained scenario terminal capacity at all UK airports, including Birmingham, is constrained to current planning constraints. This means the existing runway at Birmingham would not be fully utilised as it could serve many more passengers than the available terminal facilities would allow.

- the existing runway at East Midlands Airport would be likely to be able to serve forecast levels of passenger and freight traffic to 2030 under all our National Policy Scenarios, with the exception of the South East Constrained scenario.

- pressures on the existing runway at East Midlands would be particularly acute if capacity at the main London airports was severely constrained and no new runway was provided at Birmingham.

4.2 The Part 3 Study for the Midlands

As outlined in Section 4.1, the results of the RASCO appraisal suggested there was a case for examining the potential for developing additional runway capacity to serve the Midlands, focusing on Birmingham and East Midlands airports. In order to address this issue, a Part 3 Study was undertaken to examine long-term runway capacity in the region. The study also examined options for an entirely new airport to serve the Midlands. This part of the study is covered in Section 5 of this summary.

The runway capacity study was carried out in two parts:

Part A: Optioneering – This produced an initial long list of potential runway options for Birmingham and East Midlands airports. These were evaluated, taking into account a wide variety of criteria – including capacity, land use and planning implications, environmental impacts, operational considerations and safety.

Part B: Appraisal – Shortlisted options produced by Part A were then taken forward for full appraisal. As part of this process the passenger and freight forecasts for each option were refined. The study assessed in detail the impacts on:

- the economy;
- people;
- the natural and built environment;
- regional planning;
- surface access; and
- safety.

For the purposes of the Part 3 work, we have appraised options under two of our National Policy scenarios, the RASCO Reference Case (RRC) and South East Constrained (SEC) scenario. These two scenarios were selected in order to examine the implications for the Midlands if capacity in the South East was provided to meet demand or, alternatively, if capacity in the South East was constrained.

4.3 Potential Airport Capacity Options

This section sets out the runway options identified for Birmingham and East Midlands and summarises our analysis and appraisal of those options.

The box below provides a summary of our options at existing airports in the Midlands:

Maximum Use – the maximum use of existing runways at Birmingham and East Midlands (with the provision of additional terminal and associated facilities).

Birmingham Close-Spaced – a close-spaced second runway at Birmingham situated 400m south west of the existing runway with new passenger terminal, air cargo and maintenance facilities.

Birmingham Wide-Spaced – a wide-spaced second runway situated 1035m south west of the present runway with the expansion of existing passenger and cargo traffic. This would be able to serve considerably more traffic than a new close-spaced runway, as it could be operated independently of the existing runway.

East Midlands Wide-Spaced – a wide-spaced second runway to the South of the village of Diseworth. This would give similar additional capacity to the Birmingham wide-spaced option.

4.4 Overview of Impacts

This subsection presents our analysis of core forecasts and impacts by option.

MAXIMUM USE

Table 3: Airport Traffic with Maximum Use Option

	2000 actual		2030 RRC		2030 SEC	
	Pax (mppa)	Freight (mt)[1]	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)
Birmingham	7.5	0.01	21	0.1	22	0.1
East Midlands	2.2	0.18	15	2.6	20	3.1
Midlands Total	**9.7**	**0.19**	**36**	**2.7**	**42**	**3.2**

[1] Million tonnes of freight.

Birmingham

- Passenger demand for Birmingham airport is strong with growth forecast to be high in the short- and long-haul scheduled markets.

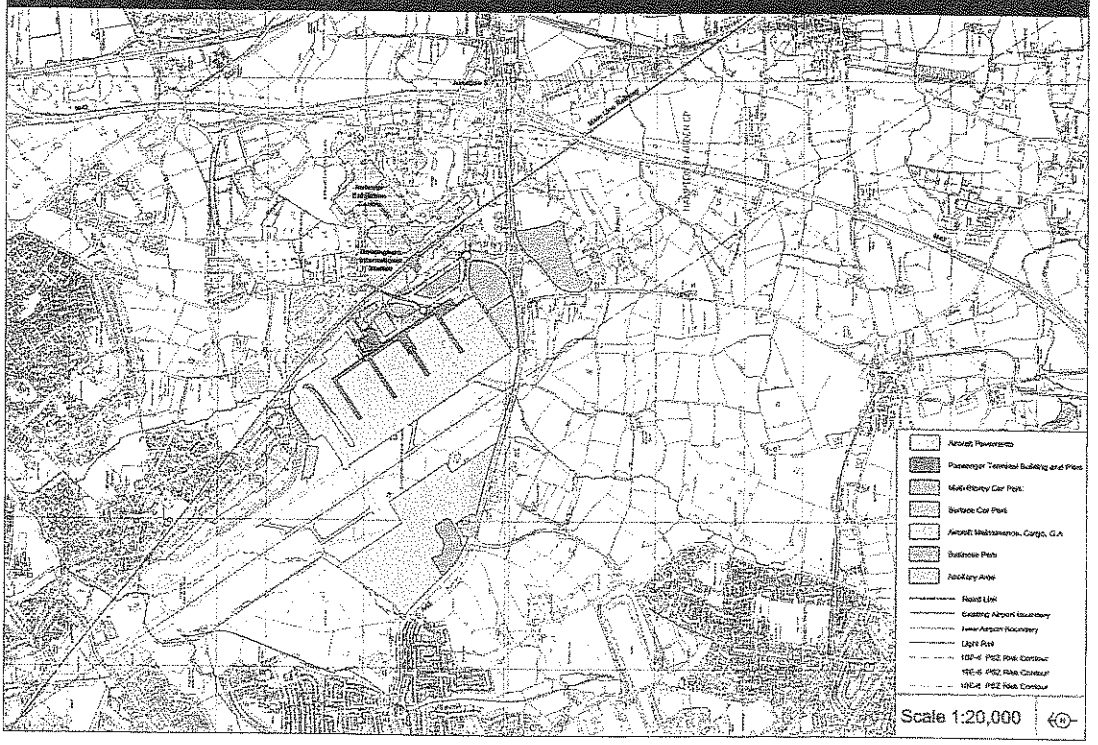
- In the RASCO Reference Case (RRC) the existing single runway at Birmingham would reach capacity sometime in the early to mid 2020s and a little earlier in the South East Constrained scenario (SEC).

- The benefits to the Midlands economy and the number of jobs generated by the airport and its air services would be fewer than those created by new runway options. However, benefits would still be substantial relative to the current situation, with around twice as many jobs at the airport itself than there are today.

- Impacts on people and on the natural and built environment, including ecology, heritage and local air quality, would not be significantly greater than at present. However, exposure to aircraft noise would be significant, with around 80,000 people forecast to live within the 57 dBA contour (the commonly accepted noise level at which aircraft noise can cause annoyance to the community). Also, green belt land would be taken for a new terminal facility.

- The growth in passenger numbers relative to the current situation would place pressures on local transport infrastructure, in particular on the road network, with severe congestion forecast on the A45 and B4438. Improvements to the public transport system, such as the West Coast Main Line upgrade, would be needed to increase the share of passengers travelling to and from the airport by public transport.

Figure 4: **Birmingham Maximum Use Option**



East Midlands

- The existing runway at East Midlands would be sufficient to serve our forecasts for passengers and freight in 2030 under the RRC.

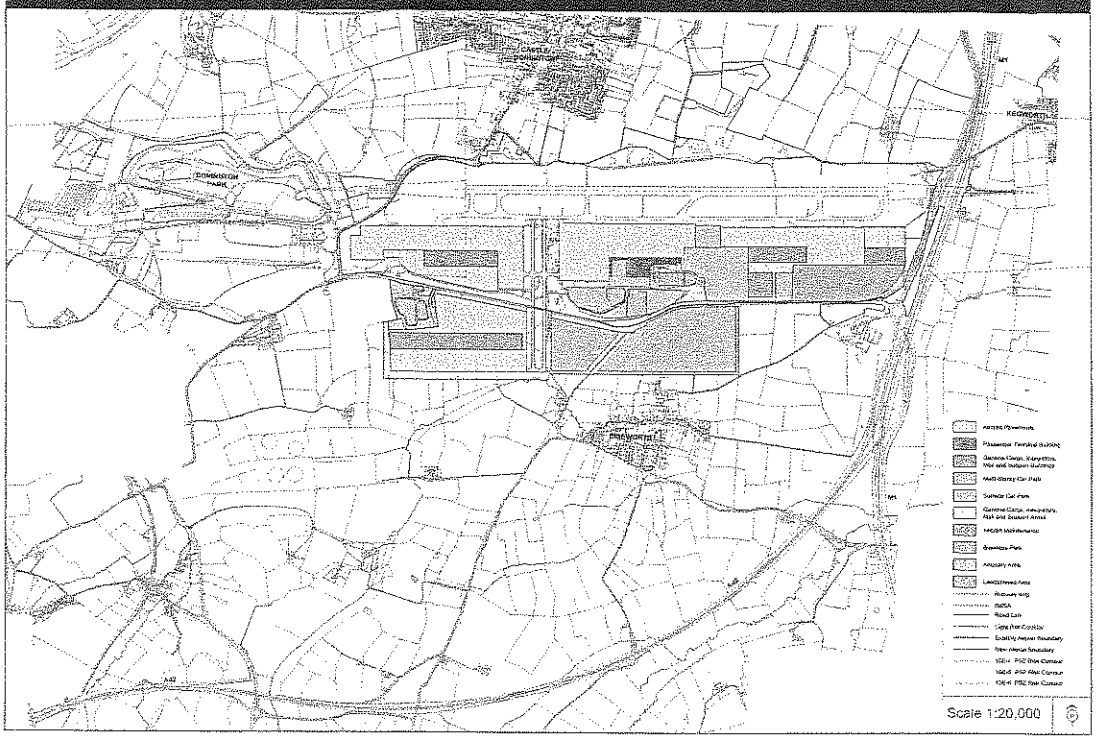
- The benefits to the Midlands economy and the number of jobs generated by the airport and its passenger and freight services would be significantly greater than current benefits. There would be five to six times as many jobs at the airport itself compared to current levels, largely as a result of the major increase in freight throughput.

- Impacts on people and on the natural and built environment would not be significantly greater than current impacts, with the exception of a significant increase in demand for night flights generated by the airport's role as a major freight airport.

- As with Birmingham, the growth in passenger numbers (as well as freight carried to the airport by road) would place pressures on local transport infrastructure, in particular on the road network, with severe congestion forecast on the A453 and A42. Both these road links would require improvements to increase their capacity. Public transport access to the airport would also need to be improved, for example a separate bus lane may be required between East Midlands Parkway Station (due to open in 2004) and the airport.

- Due to the major increase in passenger and freight throughput, particularly under the SEC scenario, there may be urbanisation pressures (i.e. the possible need for new housing for airport and airport-related workers) if additional employees cannot be accommodated in the major urban centres near the airport, such as Nottingham and Loughborough.

Figure 5: **East Midlands Maximum Use Option**

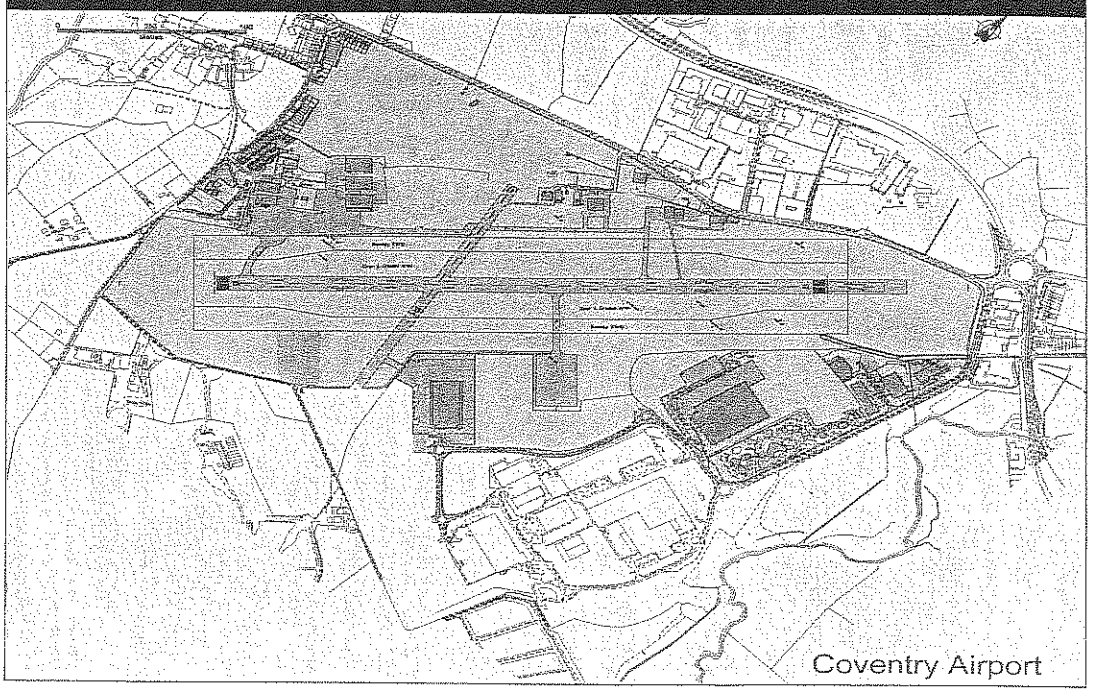


Coventry and other Midlands Airports

If Birmingham airport was to remain a single runway airport and therefore reach its capacity sometime in the latter half of the forecasting period, Coventry airport could help to serve some of the demand (both passenger and freight). Other smaller sites within the region might also be able to play a similar role, notably Wolverhampton Business Airport and RAF Cosford.

A detailed appraisal of options for expanding Coventry airport has not been carried out. However, it is likely that the airport could serve the 'no frills' and charter markets. Any significant expansion of passenger services from the airport, if a new runway was not built at Birmingham or East Midlands, would require the construction of new passenger facilities. Coventry would also benefit from the overspill of freight traffic from the South East. Coventry airport would reach a maximum throughput of 0.25 million tonnes by 2030 under the SEC scenario. Again this would require the development of new warehousing and associated freight facilities. The expansion of passenger or freight facilities would involve the airport spreading into surrounding land.

Figure 6: Coventry Current Masterplan



BIRMINGHAM CLOSE SPACED NEW RUNWAY

Table 4: Airport Traffic with Birmingham Close Spaced New Runway Option

	2000 actual		2030 RRC		2030	
	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)
Birmingham	7.5	0.01	31	0.1	34	0.1
East Midlands	2.2	0.18	11.1	2.6	19	3.0
Midlands Total	**9.7**	**0.19**	**42.1**	**2.7**	**53**	**3.1**

Birmingham

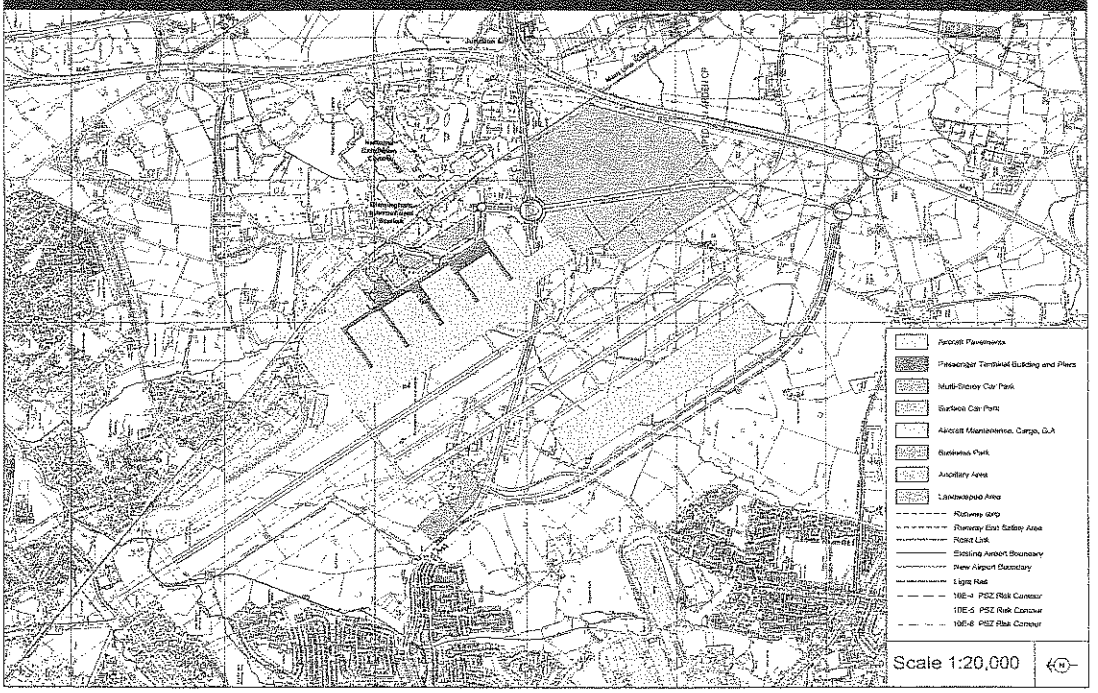
- The introduction of a new close spaced runway at Birmingham would provide sufficient capacity until after 2020 under the RRC although the airport would be 'full' before 2030. Under the SEC scenario, a new close spaced runway would be full before 2020.

- The introduction of a new close spaced runway would be strongly beneficial to the Midlands and UK economy. The benefits would be around twice the cost of the scheme (quantified by a commonly used measure, known as the benefit-cost ratio). The scheme would be likely to provide around 8000 more jobs than the Maximum Use option, with significant improvements in the range and frequency of services the airport offers, particularly short haul services.

- Impacts on people and on the natural and built environment would be very significant. The new runway would require the loss of around 450 hectares of green belt land. Around 110 properties would be lost, including the Bickenhill conservation area. This scheme would also cause the loss of both Bickenhill sites of special scientific interest. Around 100 000 people are forecast to live within the 57 dBA noise contour under this option, around 20,000 more than in the Maximum Use option.

- In addition to the improvements that would be required for the Maximum Use option, the A45 would need to be diverted. Capacity enhancements would be needed on the M42. Proposed public transport enhancements from the West Midlands Multimodal study (MMS) – Midland Metro and enhanced rail services between Coventry and Wolverhampton – would be required to increase the number of passengers accessing the airport by public transport.

Figure 7: **Birmingham Close Spaced New Runway Option**



East Midlands

- Passenger and freight forecasts at East Midlands, with a new close spaced runway at Birmingham, would be broadly in line with forecasts under the Maximum Use option. Therefore, impacts under all our indicators are likely to be in line with that option.

BIRMINGHAM WIDE SPACED NEW RUNWAY

Table 5: **Airport Traffic with Birmingham Wide Spaced New Runway Option**

Forecasts	2000 actual		2030 RRC		2030 SEC	
	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)
Birmingham	7.5	0.01	35.8	0.2	44.4	0.2
East Midlands	2.2	0.18	10.0	2.5	17.1	3.1
Midlands Total	**9.7**	**0.19**	**45.8**	**2.7**	**61.5**	**3.3**

Birmingham

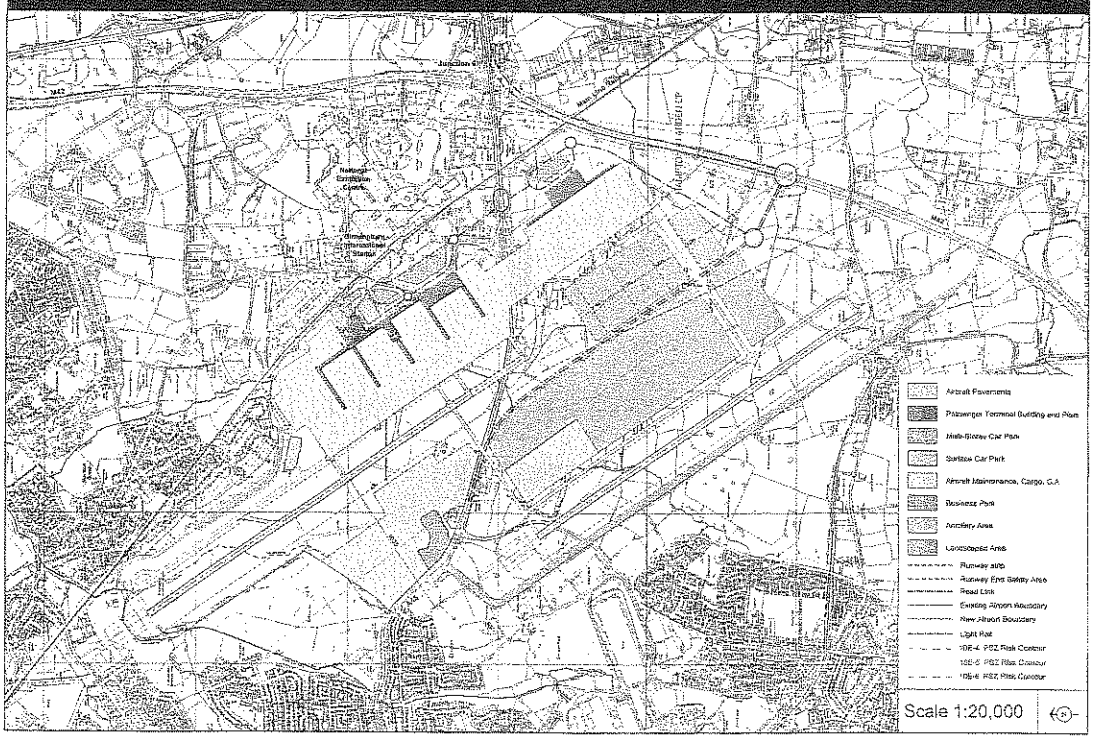
- A new wide spaced runway at Birmingham airport would be able to accommodate our RRC passenger demand forecasts beyond 2030. As with the close spaced runway option, demand would exceed capacity well before 2030 under the SEC scenario.

- This scheme would maximise the economic benefits for the Midlands and UK economy, particularly under the SEC, where benefits would be around three times the cost. The scheme would be likely to provide around 15,000 more jobs than the Maximum Use option, with major improvements in the range and frequency of services the airport offers, with a significant increase in long haul as well as short haul services.

- Impacts on people and on the natural and built environment would be significant. The new runway would result in the loss of around 600 hectares of green belt land. Around 150 properties would be lost, including the Bickenhill conservation area. As with the Close Spaced option, this scheme would also require the loss of both Bickenhill sites of special scientific interest. Noise impacts would be severe, with around 180,000 people forecast to live within the 57 dBA contour under this option, around 100,000 more than Maximum Use, as there are effectively two separate runway 'noise footprints' under this option.

- Improvements in the public transport network would be similar to those required for the close spaced option.

Figure 8: **Birmingham Wide Spaced New Runway Option**



East Midlands

- Passenger and freight forecasts at East Midlands, with a new wide spaced runway at Birmingham would be broadly in line with forecasts under the Close-Spaced option. Therefore, impacts under all our indicators are likely to be in line with that option.

EAST MIDLANDS WIDE SPACED NEW RUNWAY

Table 6: Airport Traffic with East Midlands Wide Spaced New Runway Option

Forecasts	2000 Actual		2030 RRC		2030 SEC	
	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)	Pax (mppa)	Freight (mt)
Birmingham	7.5	0.01	20.6	0.1	20.9	0.1
East Midlands	2.2	0.18	15.4	2.6	30.6	3.1
Midlands Total	**9.7**	**0.19**	**36.0**	**2.7**	**51.5**	**3.2**

Birmingham

- Passenger and freight forecasts at Birmingham, with a new wide spaced runway at East Midlands, would be broadly in line with forecasts under the Maximum Use option, therefore impacts under all our indicators are likely to be in line with that option.

East Midlands

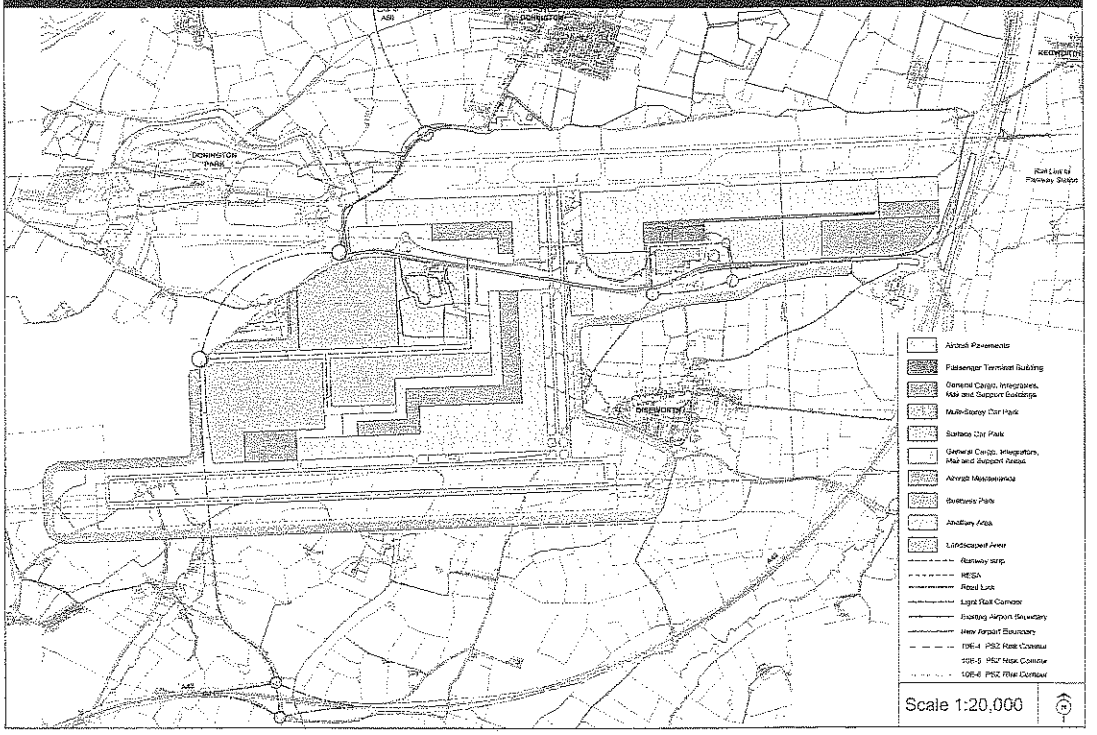
- A single runway should be sufficient to accommodate the RRC demand forecasts beyond 2030, although there could be capacity constraints in peak periods. Under the SEC demand forecasts a single runway would reach capacity after 2025, as demand spills from Birmingham and the South East.

- The economic benefits of the scheme are likely to be marginal with benefits approximately equal to costs. However, this assessment is based upon passengers and excludes the significant wider benefits to freight operators from a consolidation of their operations at East Midlands. Around 9,000 additional jobs would be generated under this scheme relative to the Maximum Use option.

- Impacts on people and on the natural and built environment would be less significant than those from either of the new runway options at Birmingham. The new runway would require around 600 hectares of land outside the existing site boundaries. However, this land is largely agricultural and is not designated as green belt. Around 30 properties would be lost. This scheme would not require the loss of any designated sites, though there might be impacts upon the Breedon Hill site of special scientific interest. Noise impacts would be slight in comparison with any of the Birmingham options, though as with the Maximum Use option there could be a significant increase in night flights to serve the freight market.

- Improvements in the road network would be similar to those required for the close spaced option, with an additional need for realignment of the A453. However, in order to serve the large number of passengers forecast under the SEC scenario, the Trent and Weston line (currently disused) would need to be reopened. This would allow rail access to the West Midlands, with trains diverted to run past the airport from Derby to Coventry and Birmingham.

Figure 9: East Midlands Wide Spaced New Runway Option



5. A New Airport Site for the Midlands

5.1 Introduction

In addition to examining options for new runways at existing airports, we have also examined an option for a new airport in the Midlands. The decision to do this was based on RASCO appraisal findings which indicated that, depending on the importance attached to the environmental impact (especially in respect of surface access, noise and air quality) an additional runway at the existing Birmingham site may not be a sustainable option.

At East Midlands airport night noise has become a major local issue. It also faces considerable road congestion on its principal road connections (the M1 and A453) and poor rail access. This, arguably, does not make it an ideal location for major expansion, particularly if it was intended to cater for West Midlands demand as well.

We were also conscious that if capacity in the South East of England was heavily constrained there might be significant potential for a purpose designed new airport to capture a share of the South East demand.

5.2 Study Approach

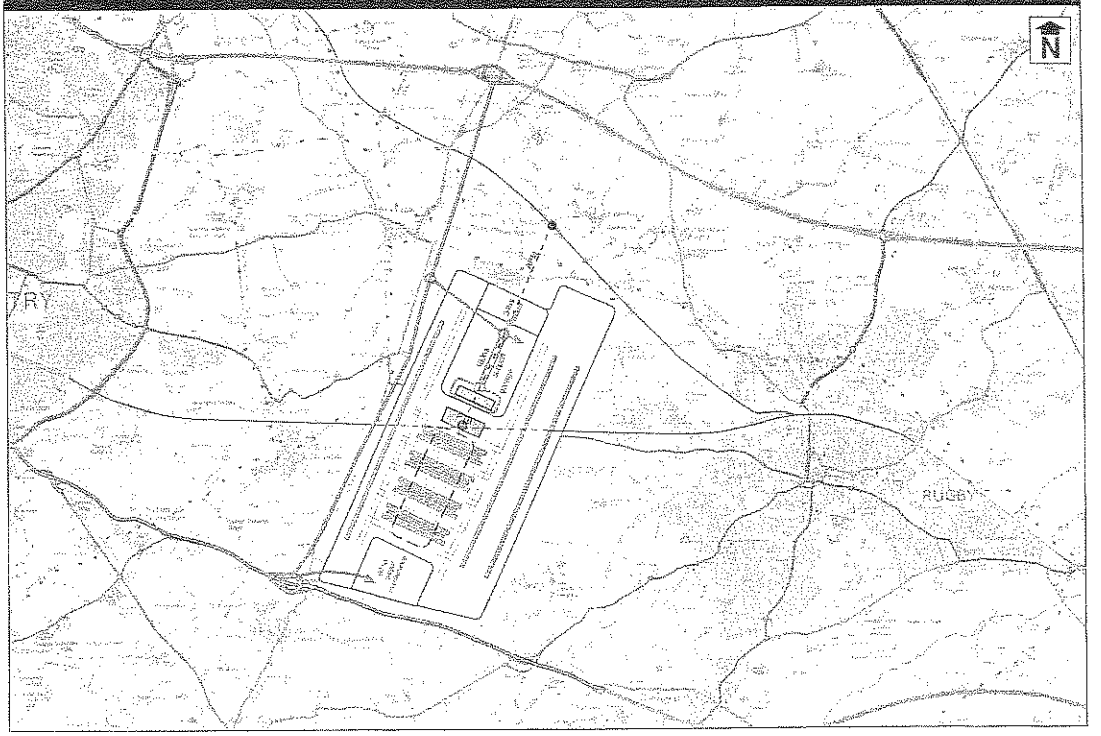
A search of possible site locations in the Midlands was carried out, based on a wide range of selection criteria. This evaluation led to the selection of a single site which performed best in terms of noise, environmental considerations and commercial viability. Further study was then carried out to determine the best configuration for a new multi-runway airport.

The location taken forward is between Coventry and Rugby. It is bounded by the A45 to the South, the M6 to the North and the B4455 to the West. The Birmingham and Manchester branches of the West Coast Main Line railway (WCML) both run close to the site.

The further study of the configuration developed a limited range of land-use options, including airfield, airport facilities and road and rail layouts. It aimed to:

- maximise the benefits in terms of location, layout and flexibility for future expansion;
- minimise land take and the impact on the surrounding communities and the environment; and
- provide the greatest opportunities for integration with the surface access networks, particularly the WCML and the motorway network.

Figure 10: **Layout of Potential New Airport for the Midlands**



Our analysis indicates that a new site would only be economically viable if no, or at most one, new runway was provided at airports in the South East and if Birmingham airport was to close at the point when the new site opened. Therefore appraisal has only been undertaken for the South East Constrained scenario.

5.3 Overview of Impacts

This sub-section presents our analysis of forecasts and impacts for the new airport option.

Table 7: **Airport Traffic with a New Midlands Airport**

2030	Pax (mppa)	Freight
New site	63.9	1.4
East Midlands	8.9	1.9
Midlands Total	**72.8**	**3.3**

- Based on an assumption that Birmingham International closes in 2011, with the new site opening immediately, our forecasts show strong demand, with around 64 mppa by 2030. As this option has only been examined on the basis of no new runway capacity in the South East, a large proportion of this demand is drawn from the South East as well as the Midlands.

- The opening of a new airport would be beneficial to the Midlands and UK economy, with the net benefits broadly similar to those for the new close spaced runway option at Birmingham airport. Development of a new site would offer a great deal more capacity than any options at existing sites and provide access to a wider and more frequent range of services, both short and long haul, than any other option for the Midlands could provide.

- Impacts on people and on the natural and built environment would be substantial. The new airport would require around 1600 hectares of green field land, of which around 1,400 hectares are designated green belt. Development would be likely to require the loss of two villages (Church Lawford and Kings Newham) as well as several outlying properties. The new site would also have an adverse ecological impact with the loss of part of the River Avon Site of Special Interest for Nature Conservation.

- However, exposure to aircraft noise would be moderate, with around 11,000 people forecast to live within the 57 dBA contour. Closure of Birmingham airport would remove around 80,000 people from the 57 dBA contour. Therefore net impacts on population affected are potentially extremely positive. In terms of local air quality, our modelling indicates that around 3,500 people would be likely to live within an area within which EU limits on NO_2 concentrations would be exceeded, but this estimate may be high and may be capable of mitigation through technological improvements.

- The forecast airport-related traffic would place heavy additional pressures on the road network around the new site as well as on public transport provision. The links most affected would be the M6 and A45 to the West of the airport site and the M1 to the South. The extra traffic could require, or at least bring forward the need for, an extra lane in each direction.

- Initial analysis indicates the new airport site would benefit from a much higher proportion of passengers travelling to and from it by rail (around 27%) than for existing sites, due to large numbers of passengers travelling from London to the airport on the West Coast Main Line (WCML). This would result in a potential need for some further capacity on the line, in addition to the currently programmed WCML upgrade.

5.4 Interactions with the South East

Our decision to examine a new airport site in the Midlands was primarily based upon its potential to serve the Midlands market, which would otherwise be likely to use Birmingham airport. However, the potential airport site's location to the south east of the existing Birmingham airport site means that it would also be likely to attract passengers from further afield.

Our assessment of its likely catchment area indicates that it would attract passengers from the M1 corridor, in particular from Northampton to the northern fringes of London. Modelling also suggests it would serve a significant number of passengers from London itself, with direct rail access by way of the West Coast Main Line increasing its attractiveness.

In our analysis of options for additional runways to serve the South East and East of England, we have assumed that capacity at regional airports is unconstrained, implying an additional runway at Birmingham. The Midlands new site option would provide one more runway in the Midlands, and at a location which would attract some more passengers from the South East.

In terms of the net effect on total UK air passenger traffic, the new site's impact would equate closely to a single new runway at Stansted when compared against a base case of no new runways in the South East. However, the economic benefits from a new Stansted runway are calculated to be greater because capacity at Stansted better serves demand from the South East. The benefits of a single new runway at Heathrow would be even higher for the same reason.

Two new runways in the South East would perform substantially better in economic terms compared to two new runways in the Midlands (that is to say three at the new site, less the runway at the existing Birmingham airport). However, the Midlands new site would perform significantly better than any of the one or two runway South East options in terms of net noise impacts, because closure of Birmingham airport would relieve a substantial population of daytime noise. A broader comparison of environmental impacts is more complex because there are a number of one and two runway options for the South East, and their relative performance in terms of other indicators will vary.