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Inverness Airport Master Plan



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FOREWORD

The publication of Inverness Airport's master plan represents the beginning of an exciting new phase in the airport's history.

In this plan we set out a blueprint for the future growth of the largest airport in the Highlands and Islands of Scotland which is an important catalyst for economic and social development in the region.

The Government's 2003 Aviation White Paper, *The Future of Air Transport*, provided a clear policy framework for the development of UK airports. This vision marked an important commitment by the Government to ensure that airport development is appropriately planned for future generations. Inverness Airport was one of 30 strategically significant airports identified in the White Paper which was tasked with producing a master plan looking forward over the next 25 years.

Inverness Airport provides a range of benefits to the region it serves and Scotland as a whole. These can be measured in terms of economic and social impacts. As the airport develops so too will the range of air connections it provides to the rest of the UK and internationally; making our region a more attractive place in which to live, work and invest. The number of quality jobs it supports will grow as will the number of people travelling into the region for business or leisure. The local economy will benefit from improved access to domestic and international markets. The airport's current £130 million annual contribution to our economy will undoubtedly increase.

At Highlands and Islands Airports we are committed to maintaining the safe and efficient operation of our airports and capitalising on the development opportunities at them. This agenda reflects our remit from our shareholder, the Scottish Ministers. The opportunities for achieving growth and delivering new benefits for the region are particularly significant at Inverness because of its size and location.

The airport sits at the heart of the Inner Moray Firth which is predicted to be the location that will accommodate major economic development activity, inward investment and population growth over the next 30 years. In the years ahead we therefore aim to make the investment necessary to allow the airport to reach its full potential and play an active part in delivering the wider development agenda for the region.

We recognise that there are a wide range of impacts associated with airports. We intend to support growth in air travel while demonstrating due consideration for our neighbours and the unique environment in which we all live and work. At HIAL it is our job to work with Government and all stakeholders locally to promote a balance between the positive impacts, such as jobs and inward investment, and the attendant negative effects of noise, air quality and emissions that may arise from operations at Inverness Airport.

Our responsibility also extends far beyond the airport's physical boundaries. The airport is a vital element of the region's transport network. This is why we are working closely with a number of key partners in the public and private sectors on a range of development issues at Inverness. Examples include improving surface access, promoting inbound tourism and facilitating economic development activity. This master plan has been developed in consultation with these stakeholders as well as the immediate community of airport users.

The draft of the master plan was subject to full public consultation at the end of 2006. We received almost 200 responses and they have been taken into consideration in the preparation of this finalised plan.

Over the coming years the Inverness Airport master plan will be subject to regular review and we will share the outcomes of this work with our stakeholders. The plan is a dynamic document and will evolve with time but I am pleased to say that many of the items originally identified in the draft plan are now in progress. This reflects the considerable rate of development at Inverness and the positive momentum that we aim to maintain.



Inglis Lyon
Managing Director
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Copies of the master plan can also be viewed or downloaded from our www.hial.co.uk website.

1.0 Introduction



1.0 INTRODUCTION

BACKGROUND TO THE MASTER PLAN

- 1.1 In December 2003 the Government published its Aviation White Paper¹, The Future of Air Transport, which sets out a strategic framework for the development of airport capacity in the UK up to 2030.
- 1.2 The White Paper stated that: “Aviation makes a significant contribution to Scotland's economy and social welfare. Air services are essential to reach many international destinations for business and leisure purposes, and they are frequently also the most convenient means of travelling to other parts of the UK as well as the Highlands & Islands.” This statement was particularly appropriate for the North of Scotland and was endorsed in June 2004 with the Scottish Executive's publication of its own White Paper², Scotland's Transport Future, which stated: “Air links greatly enhance accessibility for people living, working and doing business in the Highlands & Islands, and for tourists wishing to visit the area. Direct services reduce the need to rely on connections at other airports to reach key destinations - such as Scotland's major cities, London and key European business cities - and reduce overall journey times. They also open up the opportunity to attract visitors to the area.”
- 1.3 The Aviation White Paper asked specified airport operators to produce master plans to incorporate the Government's conclusions regarding the future development of aviation. The Government views master plans as the key planning tool through which airport operators should explain how they propose to take forward the strategic policy framework for their airport as set out in the White Paper.
- 1.4 The Government recommended that airport operators produce outline master plans as soon as is practicable, with a final more detailed version to follow. Accordingly, this is the finalised master plan for Inverness Airport. Thereafter, in line with Government advice, the plan will be reviewed on a regular basis.
- 1.5 The master plan sets out proposals for the development of the airport to 2030 in some detail. The Aviation White Paper does not itself authorise any particular development but simply sets out policies to inform and guide the consideration of planning issues. Development proposals will need to be considered through the land use planning system in the normal way.
- 1.6 This master plan recognises that, as stated in the Aviation White Paper: “Ensuring the provision of adequate airport capacity in Scotland, whilst taking full account of environmental concerns, is an important priority for the Government and the Scottish Executive.”

¹ The Future of Air Transport, Department for Transport, December 2003

² Scotland's Transport Future, Scottish Executive, June 2004

THE PURPOSE OF A MASTER PLAN

- 1.7 The Aviation White Paper set out for the first time in nearly 20 years a comprehensive view of future airport requirements in the UK. This was provided in the context of a framework of broader policy, which seeks to balance airport growth against the need to minimise impacts on those who live nearby and on the natural environment.
- 1.8 Subsequently, in July 2004, the Government published detailed guidance³ on the preparation of airport master plans to assist airport operators with the scope and content of their plans.
- 1.9 Master plans provide a mechanism for airport operators to explain how they propose to take forward this strategic framework in the form of airport-specific proposals, designed to help inform the regional and local planning processes and facilitate engagement with a wide range of stakeholders.
- 1.10 Master plans also offer a range of wider potential benefits in addition to their value in informing the planning process:
 - they provide an indication of an airport operator's plans for infrastructure development in the light of the high-level strategic policy framework for each airport in the Aviation White Paper, and therefore bring greater clarity and certainty for all those affected or with an interest;
 - they inform long-term resource planning for local and regional bodies, particularly in the preparation of strategies and local plans;
 - they make a useful tool for communicating to a range of stakeholders, including airlines, funding institutions, local authority and other local interests, to allow them to make well informed investment decisions;
 - they help airport operators to make clear at an early stage the key milestones of a development project such as the submission of a planning application, construction and opening;
 - they provide a consistent and publicly recognised vehicle for the Government, devolved administrations and their agencies to assess progress being made in delivering the Aviation White Paper at each airport;
 - they demonstrate the range of costs and benefits of airport growth; and
 - they enable airport operators and others to assess local social and environmental impacts (including those arising from land take and habitat loss) and provide an opportunity to develop preliminary proposals on how those impacts could be mitigated.

³ Guidance on the Preparation of Airport Master Plans, Department for Transport, July 2004

1.11 With this in mind, the more ground covered in a master plan and the more extensive the consultation which has informed its preparation, the greater its value in informing future land use, transport and economic planning processes, and in supporting prospective planning applications.

1.12 In the case of most airports, master plans therefore address the following areas:

- passenger and traffic forecasts;
- infrastructure proposals;
- safeguarding and land/property take;
- surface access initiatives;
- impact on people and the natural environment; and
- proposals to minimise and mitigate impacts.

1.13 This is the model that HIAL has followed in the preparation of the Inverness Airport master plan.

1.14 The report provides information on the following issues relevant to the master plan:

- In the next section, a brief overview of the airport including its evolution since its use during World War Two up to its current position.
- In section 3, an explanation of the methodology that has been adopted in preparing the master plan.
- In section 4, commentary on the case for growth of the airport, including specifically a summary of the analysis of forecasted passenger growth.
- The master plan proposals for 2010, 2020 and 2030 are then explained in detail at section 5.
- In section 6, an explanation of surface access strategy.
- In section 7, details of the impact analysis and proposals for mitigation, to the extent relevant, are included.
- In section 8, a brief note on how the master plan influences development and investment along with its programme of review.

2.0 Inverness Airport – History and current position

2.0 INVERNESS AIRPORT - HISTORY AND CURRENT POSITION

- 2.1 The site of Inverness Airport was originally identified as being suitable for aircraft operations with hard runways in the 1930s by Captain Ted Fresson, the pioneer of aviation in the Highlands and Islands. The existing airport dates from World War Two when it was developed by the RAF and since 1947 it has served as the principal civil airport in the region.
- 2.2 Today the Inverness Airport site in HIAL's ownership extends to 185 hectares (see Appendix I). It is bounded to the north by Dalcross Industrial Estate and farmland and to the south by farmland, land comprising part of the Inverness Airport Business Park joint venture and the Inverness-Aberdeen railway. The airport's western and eastern boundaries are farmland.
- 2.3 Over the preceding decades a number of changes have occurred to the site including the lengthening of the main runway and the construction of a new air traffic control tower, fire station, engineering base and offices. The terminal building is in its third incarnation following the opening of the current facility in 1999. In more recent years developments have included new car parks, the installation of upgraded navigational aids, additional apron space to accommodate higher volumes of air traffic and the construction of Inverness Airport Way linking the airport with the A96 trunk road to the south of the airfield. Substantial environmental works have also been completed to treat run off water from the runways, taxiways and aprons.
- 2.4 Today the main developed area of the airport is centred around the passenger terminal building on the north side of the airport estate and includes car parks, offices, stores, airport fire station, engineering base and hangars. Airside infrastructure - including aprons, taxiways, runways and airfield ground lighting - is located airside to the south of this area and extends almost to the airfield's southern boundary line where the air traffic control tower is located.

ROLE AND CHARACTER OF INVERNESS AIRPORT

- 2.5 Inverness Airport is the largest airport in the Highlands and Islands of Scotland, serving a local population of around 230,000 people within its immediate catchment area. The vast majority of its passengers travel on scheduled flights but the airport is also used by a range of charter executive, freight, private and military aircraft.
- 2.6 In operating year 2006/07 the airport handled a record 700,000 passengers and 41,000 aircraft movements. Most of these passengers were travelling on UK domestic services with London airports representing the largest market. Around 60% of passengers were travelling for leisure and 40% for business. Of the total passengers handled around 70% were inbound in origin. Around half of the aircraft movements were scheduled flights.

- 2.7 The airport is now its eighth consecutive year of passenger growth as a result of successful route development. It handles more than 330 scheduled flights per week to destinations including London (Gatwick, Heathrow and Luton), Belfast, Birmingham, Bristol, Dublin, Edinburgh, Kirkwall, Leeds Bradford, Liverpool, Manchester, Nottingham East Midlands, Southampton, Stornoway and Sumburgh. These flights are operated by a range of full service and low cost carriers including Aer Arann, BA franchise partner Loganair, bmi, Eastern Airways, easyJet, Flybe, Highland Airways and Ryanair.
- 2.8 Since 2002 the airport has achieved average annual passenger growth of 15% and is on target to handle up to 800,000 passengers in the 2007/08 operating year. It was the fastest growing major airport in Scotland in both 2004 and 2005 according to figures published by the UK Civil Aviation Authority. In 2006 it shared that position with Aberdeen Airport. The largest proportion of this growth has been achieved through the introduction of routes operated by low cost carriers.
- 2.9 The airport's busiest months are the traditional holiday periods of spring, summer and autumn. Weekdays are busier than weekends and the airport's peak period for passengers during the day is between 1100 and 1700 hours when most low cost carriers operate their flights at Inverness.

THE AIRPORT IN DETAIL

2.10 The existing key land uses at the airport are described below - and we would refer you to the existing use/layout plan in Appendix II which identifies the location of the activities.

- **Terminal** - the terminal building was constructed in 1999 under a Private Finance Initiative arrangement. In January 2006 HIAL, with funding from the Scottish Executive, purchased the PFI concession company and now has full control of the terminal, associated activities and income streams.

The building itself is in a good condition and has accommodated passenger growth of 100% since 1999. The trigger level for expansion of the building was 700,000 passengers per annum. Although now operating beyond its design capability at its busiest times, it is believed that terminal throughput of up to 900,000 passengers per annum could be achieved before maximum capacity is reached. Additional terminal capacity is a priority for the master plan.

- **Car Parking** - Currently, there is short stay provision for 650 cars to park adjacent to the terminal to the north and west. Also included in this car parking area is a reserved area for car hire parking and drop-off. A long stay car park with 330 spaces is located to the north of this. Parking is a significant issue to address as part of any master plan and, in particular, the need to develop further short term and long term parking options to meet demand.

- **Runway** - there are two operational runways at Inverness. The main runway is 05/23 and has an overall length of 1,870 metres. The length is considered sufficient for existing and most predicted future air traffic, which is broadly thought to be from the short to medium haul aircraft including the Boeing 737 and 757, and Airbus A319, A320 and A321. However, an extension to the runway may be necessary to enable the development of direct European services with some larger jet aircraft types. The second runway (12/30) is shorter at 700 metres and is in the main used only by light aircraft.

In January 2004, an Instrument Landing System (ILS) was installed at a cost of £1.3 million. The principal effect of this installation was to decrease the decision height from 400 feet to 200 feet. This improved the airport's capacity for landing aircraft in poor visibility conditions.

The Air Traffic Control (ATC) tower is located to the south of the airfield. This is a relatively new facility, constructed in 1995. It stands at a height of 26 metres.

In terms of safety of aircraft and passengers, HIAL is continually reviewing the designation of airspace around Inverness Airport. At present, other than the protection afforded by the standard two and a half mile radius aerodrome traffic zone (ATZ) at Inverness, the airspace is designated as Class G. This designation does not guarantee positive separation of air traffic. With the growth of commercial air traffic at Inverness, HIAL is working with the Director of Airspace Policy (DAP) to secure protected airspace designation by establishing a Control Zone (CTR) and/or Special Rules Area (SRA) with Class D designation for the immediate vicinity of the airport.

It is a general policy of DAP not to introduce additional Class D airspace unless positive radar cover can also be guaranteed. To this end, HIAL is implementing a project to deliver a radar facility on site and this forms part of the proposals for change contained in the master plan.

- **Apron** - there are two aprons on the terminal side of the main runway - the north and the south apron. The north apron is used mainly for executive jets and light aircraft, with the south - which is closest to the terminal - used for passenger aircraft.

There are two main problems with the aprons. First, the south apron has capacity issues at certain peak times of the day for the existing passenger traffic. The area has recently been extended at a cost of £1.6 million and is sufficient to accommodate six Boeing 737 aircraft at one time. With current predictions for growth of aircraft traffic, this capacity will again soon be challenged. Secondly, the quality and condition of the north apron is not sufficient for use by larger executive jets or passenger aircraft. Improvements of the surface depth and quality of the north apron were completed in early 2007 at a cost of £1.4million but further work may be required.

The principle measure of strength of surface is by Pavement Classification Number (PCN). The main runway, taxiway and south apron all have a PCN of between 39-42 which is sufficient to cater for existing aircraft. With the exception of the taxiway route which runs across it, the north apron PCN is substantially lower.

Overall, the issue of apron capacity and quality is a key matter requiring investment within the master plan.

- **Executive Jets** - the executive jet market at Inverness has grown by 500% in the past five years and is significant in Scottish terms. The handling agent Signature has a small administrative and passenger facility adjacent to the north apron. With the exception of the larger jets that are restricted to the south apron because of PCN requirements, all of this traffic is based on the north apron.
- **Cargo/Freight** - there is presently no dedicated cargo/freight facility combining airside and landside access at the airport. It is envisaged that this could be developed over time as part of Inverness Airport Business Park. Existing cargo is handled by one operator, Dalcross Logistics, which is based in hangar accommodation to the north of the main terminal area.
- **Airfield Operations** - the airside area immediately to the north east of the terminal is reserved for airfield vehicle and equipment parking e.g. luggage trucks, passenger bus, mobile stairs to aircraft, tugs etc. This area is sufficient for existing aircraft activity but would become challenged with any significant growth.
- **Airfield Operations/Engineering/Maintenance** - These operations currently occupy hangars to the north east of the terminal area, including part of the hangar occupied by the light aircraft community.
- **Offices** - only limited office accommodation exists within the terminal for airline and other support staff. In addition, the headquarters building for HIAL is located to the north of the terminal. There are then some smaller pockets of office accommodation located in and around various support buildings to the north of the terminal, which are either fully occupied or leased to third parties.
- **Highland Airways** - Highland Airways is the only airline operator to maintain a full operating base at Inverness although other operators have aircraft based at the airport. The business currently occupies a hangar to the north-west of the airfield and adjacent to the main fire building. The airline has aspirations to expand its facilities and this potential expansion is therefore to be recognised as part of the master plan.

- **Light Aircraft** - The Highland Aero Club which operates from the airport is based out of a small office adjacent to the north apron. Locally-based light aircraft use a hangar to the north of the terminal building. The Highland Flying School provides fixed wing flight training from the north apron and HG Helicopters rotary wing training.
- **Fuel** - The aviation fuel supplier is Air BP and is based on a site to the north east of the terminal area, adjacent to Dalcross Industrial Estate. There are currently three tanks with room for expansion. Fuel is transported to aircraft on the aprons by bowser.
- **Fire** - The fire station is located to the north of the terminal and adjacent to the north apron. The airport has three fully equipped tenders within the service and operates to aircraft rescue and firefighting (RFF) Category 7 on a daily basis for scheduled flights. There is also a fire training ground to the north east of the north apron, adjacent to the airside perimeter access road. The fire training ground was upgraded in 2007 at a cost of £360,000.

2.11 The above is a brief summary of existing activities at Inverness Airport. The airfield estate in HIAL's ownership extends to 185 hectares with the bulk of activity focused in the area to the north west and around the terminal, south and north aprons. The rapid expansion of passenger activity in recent years has meant that the airport now faces a series of challenges if it is to accommodate continued growth. A master plan to guide such growth and change is therefore of paramount importance in order that short term solutions for growth do not prejudice future expansion requirements.

2.12 As a final point in this section, it is important to mention Inverness Airport Business Park (IABP). This is being developed on 250 hectares of land adjacent to the airfield to the west and south. HIAL contributed 30 hectares of land with airside access to the IABP estate and is a full partner in the joint venture. IABP is seen by The Highland Council and local enterprise company as the principal location for high quality business accommodation in the Inner Moray Firth area. It also provides an opportunity to create a multi-mode transport gateway to the Highland region - combining road, rail and air - and contains an area on the south side of the airfield which is earmarked for aviation-related development such as hangars; maintenance, repair and overhaul (MRO) and cargo/freight interchange. For this reason it is an important catalyst for growth at the airport and therefore a key issue to be considered as part of the master planning process.

3.0 Approach to the study



3.0 APPROACH TO THE STUDY

3.1 The preparation of the master plan has taken place over a period of more than three years in order to ensure that the recommendations are as robust as possible. In particular, this has involved the following specific actions:

- Extensive debate and discussion at the outset amongst the airport staff, HIAL's senior management team and Board of Directors to establish in broad terms the key aspects of growth at the airport over the 25 year master plan period.
- Research and analysis into the nature and characteristics of historic and forecasted passenger growth as well as other growth issues likely to impact on aircraft movements and the need for physical changes to the existing airport infrastructure to 2030. It is this work - which is explained in more detail later in this report - that enabled the airport, following extensive discussions with both the Scottish Executive (SE) and Department for Transport (DfT), to identify passenger growth milestones for defined points through the master plan timetable.
- Definition of a matrix of land uses across the airport, as well as a logical phasing plan for changes to be progressed through the master plan period. This matrix was prepared having regard to the guidance on the preparation of airport master plans produced by DfT in July 2004. The precise details of this work are set out in more detail later in this report.
- Extensive consultation with the airline operators, handling agents and key stakeholders in the airport and region, in order to consider fully the views of these parties on matters such as the role and importance of the airport, the case for growth and change, the timing of this change and the impact of and need for mitigation to address any consequential issues arising from the forecasted growth. Throughout the exercise, the consultees have included:
 - The Highland Council (THC)
 - Highlands and Islands Enterprise (HIE)
 - Highlands and Islands Enterprise - Inverness and East Highlands (HIE-IEH)
 - HITRANS
 - Inverness Chamber of Commerce
 - Scottish Council for Development and Industry
 - Airlines and Handling Agents
 - Other Airport Users and Interested Parties

- In 2004, representatives of Inverness Airport also undertook a case study tour of the airports at Cork, Bristol and Exeter. These three airports were selected specifically for their growth characteristics and regional locations, and the discussion and debate that emanated from these visits has assisted greatly in the definition of the master plan for Inverness.
 - A series of specialist consultants were also appointed with a specific remit to consider fully the likely on and off-site impacts arising from the master plan proposals and, where relevant, to provide advice on the most appropriate scheme of mitigation relevant to address the impacts that were identified.
- 3.2 The culmination of these activities was the preparation of a detailed outline master plan report which was subject to a public consultation exercise at the end of 2006. The outcome of this work appears in the subsequent sections of this finalised master plan.

4.0 The case for growth

4.0 THE CASE FOR GROWTH

OVERVIEW OF INVERNESS AIRPORT 2006/07

- 4.1 Last year Inverness handled 700,000 passengers, a 5% increase on the previous year. Of these 685,000 were terminal passengers who embarked or disembarked at Inverness while a further 15,000 transited via the airport to another destination without disembarking. The majority of these total passengers travelled on scheduled air services.
- 4.2 The holiday charter market at Inverness is currently very small, accounting for less than 1% of the airport's total passengers. Outbound charters to traditional holiday destinations handled 3,400 passengers while inbound charters accounted for a further 1,200 passengers.
- 4.3 Freight throughput at the airport is also relatively low with 2,347 tonnes handled, an 8% increase on the previous year.
- 4.4 The airport handled 41,000 aircraft movements in the year of which 20,000 were public transport movements with fixed wing aircraft and 1,400 public transport by helicopter. General aviation accounted for 18,000 movements which included executive, fleet, freight/cargo, training, private and club movements. A further 11,600 movements were made by positioning aircraft.
- 4.5 Although the traditional holiday charter market across the UK is in decline there is considerable undeveloped potential to grow the inbound charter market, particularly from Europe, to capitalise on the attractiveness of the Highlands for leisure travellers. There is also scope to increase the number of outbound charters to meet demand from the local population who mostly access holiday charters from Glasgow Airport at present.
- 4.6 Executive jet movements at Inverness have increased steadily over the past five years from origins including the UK, USA, Europe and Middle East. This market is anticipated to continue to grow given the attractiveness of the region to high net worth individuals with business, property and leisure interests in the area. The airport also presents a good prospect to positioning executive jet traffic operating in the European and North American markets.
- 4.7 The anticipated development of new aircraft hangarage and maintenance, repair and overhaul operations as part of Inverness Airport Business Park should increase the number of fleet and positioning aircraft movements at Inverness. However, the single largest growth area by volume for the airport going forward is scheduled passenger services in the UK and European markets. Route development potential exists both to domestic and mainland European destinations. The airport currently has only one non-UK scheduled service while there is also potential for better connectivity to the central belt of Scotland and some currently unserved English regions.

ANALYSIS

- 4.8 As part of the master planning process it is necessary to analyse the forecasted growth in airport activity at Inverness for the period up to 2030, in the context of the Government's own predictions for rising demand for air travel in the UK. Whilst this includes all types of airport activity, in reality the focus of analysis is with the scheduled services.
- 4.9 Although considerable passenger growth has been achieved at Inverness in recent years through the addition of new scheduled routes to its timetable there is significant potential for further expansion in both UK domestic and international markets. The airport's route network is not yet mature and there is scope for the addition of both new UK domestic and direct European scheduled links to areas including France, Germany, Holland and Scandinavia.
- 4.10 In view of the importance of solid forecasting and its impact on the master planning process in general, a HIAL working group visited airports at Cork, Bristol and Exeter to discuss their experience of growth-related issues in detail at an early stage. The summary findings from this exercise were:
- As a first general point, almost without exception the airports visited had or were facing many of the same issues surrounding growth that are currently being faced by Inverness. For example, changing requirements and demand from the no-frills airlines, apron capacity, phased terminal expansion, and the development of non-aviation airport activity.
 - It was clear from all discussions that the extent of forecasting for any master plan exercise was crucial. The recommendation from all three was to plan for all levels of growth and ensure that any plan looks at the short, medium and long term as well as the phasing implications. It seemed that all three locations had, historically and for understandable reasons, suffered from a lack of vision in respect of passenger growth and this has meant that strategy documents and master plans have had to be fundamentally re-written after only a short period of time.
 - It was also felt that consideration of the economic impact of the airport operations was of paramount importance in understanding the case for growth.
 - Maintaining good relations with the local council and other relevant public sector bodies is beneficial in order that shared goals are developed within regional strategies and investment plans.
 - Whilst the importance of passenger growth is without question and is also the most dominant issue for an airport, diversification into other activities was also seen as a benefit moving forward. For example, non-passenger activities such as cargo/freight and executive jets along with other attendant development opportunities such as adjacent commercial and hotel development.
 - Finally, any master plan should always look to ensure expansion over the long term as well as the flexibility for change and review.

4.11 The demand for air travel is influenced by a range of economic and social factors such as cost, necessity, opportunity and the inclination of the travelling public to use different modes of transport. In developing the passenger forecasts for Inverness Airport we have considered a wide range of scenarios, taking into account the following factors:

- Airport infrastructure
- Economic change
- Demographic change
- Route development
- Business and leisure travel
- Propensity to fly

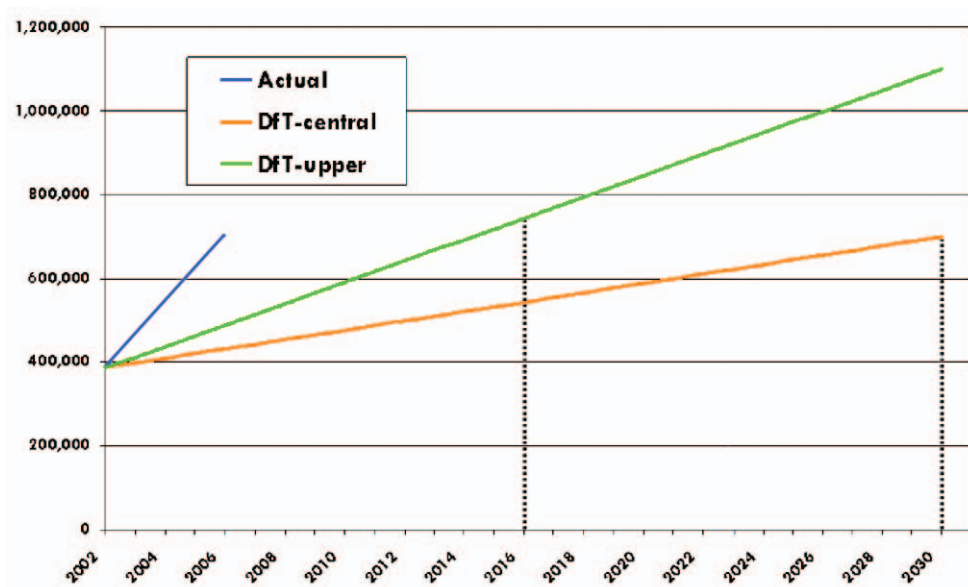
4.12 For the purposes of the airport master plan HIAL has concluded that it is prudent to forecast on a median scenario basis while taking account of both pessimistic and optimistic growth scenarios. The other airports that HIAL studied strongly advised against underestimating passenger growth. Regular reviews of passenger forecasts weighed against actual performance will, of course, be the critical determining factor for the future timing of investment in airport infrastructure.

4.13 The table below gives an overview of Inverness Airport's performance to date.

Year*	Passengers	% Change	Aircraft Movements	% Change
1986/87	170,438		18,883	
1987/88	178,231	+4.5	19,890	+5.3
1988/89	195,091	+9.4	20,213	+1.6
1989/90	217,787	+11.6	22,150	+9.6
1990/91	216,829	-0.5	23,142	+4.5
1991/92	214,212	-1.2	23,947	+3.5
1992/93	233,613	+9	27,618	+15.3
1993/94	247,710	+6	26,685	-3.4
1994/95	285,962	+15.4	23,773	-11
1995/96	285,762	-0.1	22,623	-4.8
1996/97	315,949	+10.6	26,626	+17.7
1997/98	403,818	+27.8	23,262	-12.6
1998/99	337,072	-16.5	27,178	+1.3
1999/00	347,262	+3	27,540	+1.3
2000/01	359,514	+3.5	25,612	-7.1
2001/02	376,378	+4.7	27,587	+7.7
2002/03	407,196	+8.2	27,297	-1.1
2003/04	483,937	+18.8	32,438	+18.8
2004/05	564,776	+16.7	34,171	+5.3
2005/06	665,677	+17.8	38,631	+13.1
2006/07	698,885	+5	41,005	+6

4.14 It is important to note that Inverness Airport has a track record in exceeding passenger forecasts. The DfT forecasts contained in the Aviation White Paper projected that by 2030 Inverness would have a throughput of 700,000. It did, however, note that recent trends suggested that the passenger throughput could exceed one million by that year.

4.15 However, traffic has grown by 100% since 1999. The figure below compares actual trends in the period 2002-2006 with those implied by the two forecasts shown for Inverness in the White Paper, with 1.1 million taken as proxy for the DfT's upper estimate.



4.16 The dotted lines represent the years in which the 2006 observed demand should, according to the two forecasts, have been achieved. On this basis, the actual 2006 passenger volumes should not have been reached until:

- 2016, under the upper estimate
- after 2030, under the central estimate

4.17 Thus actual performance at Inverness is well in advance of the two projections. This follows a trend in recent years where the airport's throughput has exceeded a number of forecasts. This lends weight to the ability of Inverness to achieve the projections set out in this paper.

4.18 It is also important to note that, as set out in the latter stages of this master plan, there are no physical constraints that will hinder the ability of the airport to accommodate the predicted growth in passenger numbers and aircraft movements if sufficient investment is made in infrastructure at the correct time so as to either accommodate or catalyse growth.

4.19 In preparing the forecasts for Inverness HIAL considered worst and best case scenarios and adopted the median figure based on these two extremes.

- Pessimistic forecasting was based on organic growth of 2% per annum plus loss of existing services/limited route development.
- Optimistic forecasting was based on organic growth of 4% per annum plus optimistic route development.
- Median forecasting was based on organic growth of 3% per annum plus the attainment of target routes currently in discussion and occasional route development thereafter.

4.20 The base line for all three scenarios was the 700,000 passengers handled at Inverness in operating year 2006/07.

4.21 The median scenario is for organic growth of 3% per annum based on the higher than average propensity to fly in the region, scope for increased frequency and capacity on some domestic routes, the introduction of new UK and European routes and growth in inbound charters from mainland Europe. In real terms HIAL anticipates a growth rate in excess of 4% per annum to 2015 followed by a slower rate of growth. For the purposes of the forecast this has, however, been averaged out to a constant of 3% per annum over the 25 years.

4.22 Under the median forecast the current business/leisure split of passengers may shift more towards leisure as low cost carrier operations to Europe are added at the airport but business traffic is expected to remain strong due to geographic and economic factors.

4.23 The passenger totals resulting from the median scenario forecasting are therefore:

- 1.0 million in 2010
- 1.2 million in 2015
- 1.4 million in 2020
- 1.8 million in 2030

4.24 The optimistic estimate for 2030 could, however, see in excess of two million passengers while the most pessimistic estimate could see as little as circa 1.3 million passengers by 2030.

4.25 Commercial aircraft movements will see the highest increases over the period driven by the addition of scheduled routes at the airport, inbound charters and executive jet traffic. The associated positioning flights will also increase over the period while non-commercial flights will see the slowest rate of growth.

SUMMARY

- 4.26 The forecasting analysis set out above has over the past few months been presented and discussed with all of the stakeholders, customers and consultees listed in section 3.1 in this report. The broad feedback from all these parties has been very positive and supportive. In particular, the airlines currently operating from Inverness are supportive of the route development potential and passenger growth predictions. The Department for Transport has also acknowledged the content of the forecasting analysis and is generally supportive of the work undertaken by HIAL in seeking to understand clearly the case for growth.
- 4.27 In the course of the discussions, a number of the airline operators in particular pointed to existing pressure points requiring attention in the short term as well as longer term physical change to the airport that will be necessary to deliver the forecasted growth in activity. Their primary concerns are the efficient processing of passengers through the terminal building and minimising constraints to achieving quick turnaround times for their aircraft.
- 4.28 These comments were factored into the extensive internal master planning design sessions held by HIAL as it sought to identify the physical changes that will form the master plan for change over the next 25 years. The outcome of this analysis is set out in detail in the next section.

5.0 Master plan proposals

5.0 MASTER PLAN PROPOSALS

5.1 It is important to reiterate at the outset, the assumptions and framework within which the master plan has been prepared. The key points are as follows:

- The master plan framework is for 25 years in total. This is split into three discrete phases, taking account of the short, medium, and long term position. The phased split is 2010, 2020 and 2030.
- The master plan has been constructed on the basis of a list of individual land uses/airport activities which have been considered separately across each of the phases. This has then been drawn together to produce a consolidated process of change for each of the three phases. The individual land uses/activities identified are as follows:
 - Terminal
 - Ramp/Apron
 - Executive Jet
 - Cargo/Freight/MRO
 - Airport Engineering/Maintenance and Hangars
 - Runway/Second Runway/Taxiway
 - Car Parking and Car Hire
 - Support Services/Stores
 - Fire
 - Fuel
 - Light Aircraft
 - Hotel
 - Infrastructure

5.2 The master plan is set out in detail below and reference should be made to the plans at Appendix III in support of this analysis. Our description is on a phase by phase basis.

SHORT TERM - 2007 to 2010

- **Terminal** - it is assumed from the forecasting analysis that over the period to 2010 annual passenger numbers will approach one million. The trigger level for expansion of the terminal was 700,000 passengers per annum and at peak times it is now operating beyond its design parameters. Additionally, there are now requirements to change processes within the building to meet new regulatory requirements and to alter front of house vehicle traffic management.

An option appraisal and design project was completed in May 2007 which identified a preferred scheme for terminal expansion to provide capacity up to 1.5million passengers per annum. This scheme has now been submitted to the Scottish Executive's 2007 Spending Review and, subject to capital funding being secured, will be completed and fully operational in summer 2010. The scheme allows for further phased expansion if required in the future.

- **Ramp** - improvements to the south and north aprons have recently been made as noted earlier in this report. The master plan therefore proposes the following, for the period to 2010, subject to business needs.
 - Increase south apron capacity to nine stands by expansion to the north-east.
 - Consider the introduction of nose-in parking and push-back for greater intensification of apron use.
 - Upgrade the surface quality and consistency of the north apron to allow for greater flexibility of use.
- **Executive Jet** - no changes proposed to this operation up to 2010.
- **Cargo/Freight/MRO** - over the short term, some cargo/freight development could occur on the south side of the airport. However, this would need to be driven by the joint venture company IABP Ltd which is now the landowner of the area. Substantial investment would be required by the airport for the provision of essential infrastructure to ensure that any development could work sensibly with the benefit of airside/landside access. For the purpose of the master plan, we have assumed the following:
 - A development of a 3,000m² building with a landside access road and appropriate rear access area for parking, storage, and manoeuvrability. This element would be the responsibility of a development partner.
 - For the airside infrastructure we have assumed the construction of an apron to accommodate two aircraft stands together with an upgraded taxiway to link to the main runway.

We have grouped cargo and freight with any potential MRO activity over the short term, as it is felt that the site and location is appropriate for either use, and it is unlikely that more than 3,000m² will be required collectively over the next five years. If any scheme comes forward, it will be in response to specific market demand.

- **Airport Engineering / Maintenance and Hangars** - the significant proposal over the short term is the demolition of the hangar adjacent to car park 3 which is currently used by light aircraft. This is linked to car parking expansion which is described in further detail below. Some rationalisation will be required to ensure appropriate provision following the loss of this building and an alternative site for a light aircraft hangar has been identified.
- **Runway / 2nd Runway / Taxiway** - no changes currently proposed to 2010, although the proposals scheduled for the second phase of the master plan (see below) may be brought forward if demand dictates earlier activity.

- **Radar** - by 2010 the airport will have developed its own radar on site and be self sufficient in terms of local radar provision. Phase one of the radar project will be completed in July 2007 and capital funding is in place for the development of the airport's own radar facility which will be operational by the end of 2008. The introduction of seven-day local radar cover will facilitate the move towards designation of controlled airspace at the airport as previously referred to in this report. The radar facility will increase the number of aircraft movements that can be handled per hour while new radar approach procedures should deliver environmental benefits in terms of lowering the noise emissions and fuel consumption of aircraft.
- **Car Parking and Car Hire** - changes and improvement to the car parks at the airport will continue through to 2010. Car parks 1, 2 and 3 are already in place, with car park 4 having opened in November 2006. By 2010, consolidation of short term car parks and changes to vehicle traffic management will mean that the short stay car parking capacity will be in excess of 1,100 spaces.

In addition, it is proposed to create a new long stay car parking area to the north east of the airfield adjacent to the fire training ground. An allocation of up to 1,000 spaces has been made for this car park by 2010. In order to access this site a new on airport access road will have to be constructed.

Car hire parking will remain located adjacent to the terminal building as this represents safe and easy access for passengers. At present, there are two car hire agencies operating on airport - Avis and Hertz. Where possible, the airport intends to provide the opportunity for other agencies who wish to be based on airport.

- **Support Services / Stores** - Further development land will become available adjacent to the long term parking site referred to above through the construction of the new on airport access road.
- **Fire** - no changes proposed.
- **Fuel** - no changes proposed.
- **Light Aircraft** - it is acknowledged that from an operational airfield viewpoint the continued growth in scheduled aircraft activity at the airport will put some pressure on the operations of the light aircraft community. Moreover, the existing hangar facility used by light aircraft is reaching functional obsolescence and is scheduled for demolition to make way for the terminal expansion and car parking consolidation. However, there is no reason why scheduled and general aviation traffic cannot continue to co-exist at the airport with appropriate proactive management. Provision is therefore made throughout the period of the plan to facilitate light aircraft operations. Therefore, the proposal as part of the master plan is to provide the light aircraft community with a clearly defined grass area of the airfield which could be occupied on a leasehold basis but with a clear right of vacant possession by the airport. This area would be suitable for the development of a hangar and associated buildings.

- **Hotel** - the master plan for IABP proposes the development of a hotel on land adjacent to the new road access roundabout to the airport. From the analysis undertaken by the airport, it is clear that demand exists for such a facility and there is already much market interest from hoteliers. It is expected that a facility of 80 - 120 bedrooms will be operational on this site by the end of 2008.
- **Infrastructure** - in accordance with the comments above, further and more significant investment may be necessary to resolve off-site infrastructure issues. The scale of this investment has been developed further through discussions with The Highland Council as part of the wider strategy for the A96 corridor. Off-site infrastructure for the corridor as a whole is expected to be delivered through a developer protocol arrangement and public sector funding. Work to establish this arrangement is being progressed by the council.

MEDIUM TERM - 2011 to 2020

- **Terminal** - The terminal expansion in 2010 is expected to cope with the forecasted growth in passenger activity up to 2020.
- **Ramp** - again, significant expansion to the apron area may be required. In order to achieve this - and having regard to the requirement for longer term expansion - the master plan proposes a move away from simplistic linear expansion, to a new pier based layout of stands with a capacity of 11 up to 2020. The plan highlights an indicative layout which allows for parking for different aircraft types. Some covered passenger linkages are also proposed, although at present these are designed merely as a covered means of linking passengers from terminal to aircraft. The piers are not specified to include forward holding lounges.
- **Executive Jet** - no change proposed.
- **Cargo / Freight / MRO** - the proposal is for a further 6,000m² building together with apron, hard standing and infrastructure expansion. This would again be on the same basis of airport involvement as described for 2010.
- **Airport Engineering / Maintenance and Hangars** - over the period to 2020 the proposal is to expand the existing hangar to the north of the fire station, so that it is sufficient to cope with airport engineering maintenance requirements.

- **Runway / 2nd Runway / Taxiway** - there are three proposals over the medium term for these issues:
 - Extension of the main runway to the north by a further 200-300m.
 - Construction of a turning D to improve flexibility and capacity of operation of the main runway.
 - Closure of the second runway with this facility being incorporated into a new taxiway network around the main runway.
- **Car Parking and Car Hire** - further increases to car parking capacity are proposed. These would principally relate to the long stay area which is expanded to accommodate a further 750 spaces. Only a marginal increase in the short stay car parking is proposed.
- **Support Services/Stores** - further expansion for these uses is proposed in between the existing hangar / maintenance building and the fuel depot. A building of up to 1,150m² has been identified on plan.
- **Fire** - no change.
- **Fuel** - some expansion is suggested, although this can take place in-situ and would be the responsibility of the fuel provider.
- **Light Aircraft** - no changes are proposed over the medium term.
- **Hotel** - no changes proposed.
- **Infrastructure** - there will be continued investment in the on and off-site infrastructure considered necessary to enable the proposed changes to proceed.

LONG TERM - 2021 to 2030

- **Terminal** - a further expansion of the terminal may be required if passenger forecasts are achieved. This will comprise a straightforward and relatively small addition to the building footprint.
- **Ramp** - this is a continuation of the proposed pier based stand layout with a capacity of 15.
- **Executive Jet** - no significant change, but this will depend on the requirement for use of the north apron which may come from expansion of passenger activity.

- **Cargo / Freight / MRO** - further expansion of 6,000m² is proposed, subject to air traffic control restrictions. It could be that the requirements for continuous line of sight from the air traffic control tower - and the costs of improvements to the ATC tower to ensure its provision - may restrict further expansion of the cargo/freight area to the south. Further development of these uses could proceed to the north of the ATC tower if demand dictates. These options have been shown on plan for indicative purposes.
 - **Airport Engineering / Maintenance** - no changes proposed.
 - **Runway / 2nd Runway / Taxiway** - no changes proposed.
 - **Car Parking and Car Hire** - further parking capacity increases to the long stay area are proposed from 1,750 to 2,500 spaces. No changes to short stay parking capacity are proposed as any further expansion would start to impact significantly on the existing fire and fuel facilities.
 - **Support Services / Stores** - no changes proposed.
 - **Fire** - no change.
 - **Fuel** - further in-situ expansion if required.
 - **Light Aircraft** - no changes are proposed over the long term.
 - **Hotel** - no changes proposed.
 - **Infrastructure** - further improvements will be made as required.
- 5.3 This completes the description of the 25 year master plan proposals for Inverness Airport. In accordance with guidelines set out by the DfT, HIAL has sought to consider the impact both on and off site of these changes and, where appropriate, has also considered the need for mitigation. This analysis is set out in more detail in the following sections of the report, dealing first with the preparation of a surface access strategy and secondly with possible impacts on the natural environment as well as other regional development issues.
- 5.4 However, before turning to this analysis, it is appropriate to provide comment in the section on issues of funding and affordability, and also on the possible safeguarding and land take that may be required to facilitate the changes set out above.

FUNDING AND AFFORDABILITY

- 5.5 The master plan proposals set out above amount to a significant level of capital expenditure over the next 25 years - in excess of £75 million. HIAL is required to submit a rolling budget programme to the Scottish Executive on an annual basis and secures its revenue and capital subsidy funding allocations through the Executive's spending review cycle. It is through this programme that funding bids for the various changes will be submitted. The phasing of change will be essential and at all times HIAL will be required to demonstrate a demand and a business case that justifies the capital expenditure that is being sought.

SAFEGUARDING AND LAND TAKE

- 5.6 The requirements for safeguarding in accordance with UK Civil Aviation Authority regulations for the operation of aerodromes have been considered fully in the context of the changes proposed. Only one issue requires further comment, and that concerns the possible extension of the main instrument runway to the north east.
- 5.7 This potential change has been included within the medium term phase of the master plan. In accordance with the guidelines set out by the DfT, the master plan has demonstrated how, if demand arose, such an expansion to the runway could occur. Additional land currently owned by Moray Estates would be required to facilitate this change, but no difficulties are anticipated with land assembly for the project.

6.0 Surface access strategy

6.0 SURFACE ACCESS STRATEGY

- 6.1 It is difficult to be prescriptive with a Surface Access Strategy for the airport at the current time, given the wide-ranging transport-related issues that are currently being debated at various levels for the A96 corridor as a whole. Examples include the STAG assessment and ongoing analysis over the potential improvements to the A96 from Inverness to the airport, as well as the HITRANS' Regional Transport Strategy which was published earlier this year.
- 6.2 Therefore, the emphasis for a Surface Access Strategy at this stage is on setting a broad framework approach and setting out objectives to be followed.
- 6.3 In this respect, what follows is a series of key objectives to be adopted in support of the future expansion proposals for the airport. These are:
- Maintaining strategic partnerships
 - Supporting accessibility improvements
 - Using car parking supply and management to reduce vehicular movements
 - Preparing and operating a comprehensive and strategic Travel Plan

STRATEGIC PARTNERSHIPS

- 6.4 It is important that the airport's Surface Access Strategy is recognised as being a strategic objective for the area it serves so that the expansion proposals are developed in partnership with key stakeholders.
- 6.5 HITRANS has a particularly important role to play and it is critical that the airport's expansion sits alongside the Regional Transport Strategy in order that the two are mutually supportive. This is reflected in the Regional Transport Strategy.
- 6.6 The future of the A96 corridor has a fundamental role to play in the Surface Access Strategy for Inverness Airport. In the foreseeable future, this trunk road will continue to be the main access mode for all airport users. For many visitors, it will be their first contact with the region's transport infrastructure on leaving the airport. The Scottish Executive and Transport Scotland are therefore key stakeholders in the airport expansion process.
- 6.7 As noted already, the A96 has been the subject of a STAG assessment. Briefly, a range of improvements are recommended for the A96. These include measures that can be implemented in the short and medium term. In the short term, these include improvement of the western section as it leaves the environs of Inverness together with introduction of bus priority measures. In the medium term it is likely that the A96 will be dualled as far as the airport. Such measures are important for the region as a whole and will be supported by the airport on this basis.

- 6.8 Looking at the current traffic flow levels using the A96 during busy periods of the year, it is clear that they lie towards the upper range for a rural single carriageway. With a combination of background traffic growth, the wider expansion of housing along the lower Moray Firth, commercial development planned at Inverness Airport Business Park and the long term expansion plans for the airport, traffic flows will continue to grow on the A96. Given the vital role this route plays in providing access to the region, it is hoped that the dualling scheme will be implemented at a future date subject to funding availability.
- 6.9 If the decision is taken to dual the A96, this will have an influence on the programming of developments within the airport. In this respect, it is vital for good lines of communication to be open between all the relevant parties to inform and influence their respective development strategies.
- 6.10 Individually or through the offices of HITRANS, it will be important for HIAL to continue to maintain close ties with the local area public transport providers, including bus and rail operators.
- 6.11 The Highland Council has a major role to play and its continued support will be important in defining the specific details of any external enhancements associated with the Surface Access Strategy for the airport. Similarly Moray Council will also have a key interest given the potential role the airport plays in serving its area.

ACCESSIBILITY IMPROVEMENTS

- 6.12 The expansion of the airport will generate additional passenger and staff movements. Whilst a significant number of passengers will not be able to switch travel modes away from the car because they are visiting the Highlands on a touring holiday, improvements to public transport will provide travellers with choices and this will also be relevant for airport-related employee journeys. At the moment the mode share by public bus is low at 6.1% and there is no access by train. It is considered a realistic objective to increase the share by bus and to create rail access.
- 6.13 Currently bus connections to the airport are scheduled services that make additional stops on their routes. It is an objective that, with the growth of the airport, more direct and dedicated service options should be developed. For example, an airport express link to Inverness city centre. Hitrans made a successful funding application to the Scottish Executive in March 2007, supported by HIAL, to introduce enhanced airport bus services from Inverness and Nairn in July 2007. These have included significant increases to current frequencies and service levels.
- 6.14 Given the proximity of the railway to the site, the potential exists for a rail halt to play a role in improving access to the airport. Hitrans is progressing a rail halt and park and ride scheme adjacent to the airport and IABP with capital funding support from HIAL. The park and ride should be operational by summer 2008 and the first trains stopping at the station by December 2008.

- 6.15 This will be of wider benefit to the region as a whole, will permit the business park to be better served and will also offer the potential for airport passengers and staff to travel by train. This will require some form of shuttle bus linkage between the rail halt and the terminal building. Possibly this shuttle bus might also connect to the long stay car park although this will be subject to individual review at the appropriate time.
- 6.16 In addition to the formation of a bus interchange to serve the terminal, improvements to the taxi facilities will be required to support future expansion plans.
- 6.17 Although not a public transport mode, hire car use accounts for over 20% of current passenger movements. With the development of the airport, facilities will need to be expanded for, car hire company vehicles.
- 6.18 It is vitally important that clear information on surface access options is provided for passengers. Such information would take three broad forms: that supplied to visitors before they arrive at Inverness Airport; that provided at the terminal building to direct and inform passengers about travel infrastructure and a wider information strategy to inform the domestic catchment of their travel choices to the airport. HITRANS is progressing the installation of real time electronic bus timetables at the airport terminal.

CAR PARKING

- 6.19 The creation of car park 4, a long stay car park, has permitted the introduction of a dual tariff structure of Inverness.
- 6.20 It has already been noted that the airport attracts a considerable number of drop-off and pick-up trips. It is considered that the provision of long stay parking at the airport will influence a proportion of these cars to park at the airport for the duration of their period away from the area. If this is achieved, for every vehicle using the facility, two journeys are removed from the highway network.

TRAVEL PLAN

- 6.21 A significant part of the Surface Access Strategy will be the evolution and refinement of an airport Travel Plan. This will provide an over-arching strategy setting out broad principles to be adopted and a more defined and detailed set of proposals to address the specific travel needs for passengers and, crucially, staff.

7.0 Impact and mitigation

7.0 IMPACT AND MITIGATION

- 7.1 Specialist consultants were appointed by HIAL to consider the impact of the master plan proposals, as well as any possible mitigation strategies thought necessary in respect of specific issues relating to:
- Ecology and biodiversity
 - Landscape and visual impact
 - Air quality
 - Noise
 - Economic and, in particular, employment impacts
- 7.2 Reports have been produced for all of these issues and the commentary below is a summary of the key points arising from this work. It should be noted that the analysis undertaken on these issues does not constitute sufficient detail for a planning application, nor does the DfT master planning guidance suggest that it should. The focus at this stage of the master planning process is to highlight specific issues that may be worthy of particular note or attention as and when detailed proposals for change come forward.

ECOLOGY AND BIODIVERSITY

- 7.3 Future development proposals are unlikely to result in any significant negative impact (direct or indirect) on habitats that are protected by statutory wildlife designation (i.e. SSSI, SAC and SPA) and do not constitute a material planning concern.
- 7.4 In terms of on-site habitat loss impacts, the expansion of the airport is also unlikely to result in anything other than minor impacts on the habitat that appear to be affected by the development which are all of low relative ecological value.
- 7.5 With respect to animal species, the airport expansion is considered likely to result in moderate adverse impacts on badger which will need to be verified through further survey work, and appropriately mitigated as part of the future development design.
- 7.6 The only other potential negative impacts on protected species have been identified as unverified theoretical impacts at this stage of the assessment. These are in relation to the theoretical use of an individual building proposed for demolition by roosting bats, and common reptile species (common lizard) using grassland habitat that may be permanently lost to built development. Both of these potential impacts will need to be verified by further specialist survey work, and appropriately mitigated to comply with relevant wildlife and planning legislation as necessary going forward. This will be addressed as appropriate towards the statutory planning process, as and when more detailed proposals for specific change are promoted.

LANDSCAPE AND VISUAL IMPACT

7.7 The landscape assessment has taken into account the following factors:

- Landscape character detractors - the existing airport site and associated aircraft movement, the Norbord Factory, industrial development at Dalcross, the waste water treatment works at Milton of Culloden and the redundant oil fabrication yard at Ardersier;
- The active or proposed developments at Tornagrain, Castle Stuart, Whiteness and Inverness Airport Business Park;
- The Local Landscape Character Type (LLCT) Farmed Lowland & Industry which will experience no more than moderate adverse temporary impacts as a result of the construction activities associated with the proposed airport master plan development. The airport's development will not contribute to any increase in predicted impacts associated with construction operations related to the other identified developments in the study area;
- The impacts on this LLCT have been assessed as no more than moderate adverse and permanent during operation and maintenance and will not contribute to any increase in predicted permanent impacts associated with the other proposed development in the study area. In summary:
 - LLCT Farmed Lowland & Industry is well represented in the study area.
 - The development will form permanent features in the landscape.
 - The master plan elements will form an expansion of similar existing facilities at Inverness Airport.
 - Surrounding LLCTs will not be directly affected by the development - although it is acknowledged that there may be an increase in aircraft traffic and associated noise.
 - No sites designated for landscape quality will be affected by the proposed development.

7.8 Based on the above findings, it is considered that the proposed development will have a slight adverse effect on the landscape resource of the study area as a whole, with localised moderate adverse impacts both during construction and in the longer term. In terms of the assessment this is considered to be a not significant effect.

7.9 The Zone of Visual Influence, or ZVI, is relatively well contained to the north east, east, south and south west of the proposed site as a result of the combination of topographical features, mature coniferous plantations and deciduous woodland. To the north west and north, much of the Inner Moray Firth and the coast between Munloch Bay and beyond Chanonry Point have theoretical visibility of the proposed development at up to 7km distant.

- 7.10 Landward visibility to the south of the Firth includes areas of high ground above Culloden Moor at greater than 7km distant, an isolated area around Dalcross House at 4km distant, areas to the east and south east of Ardersier at between 3 and 5km distant and much of the land around the airport at distances of up to 3km with the exception of areas near Easter Dalziel and Tornagrain which are screened from the existing airport facilities, and will be screened from the proposed facilities by existing commercial forestry.
- 7.11 Within the assessment area a range of 10 viewpoints were selected at locations from which the proposed development is likely to be visible.
- 7.12 The assessment of effect on the Visual Amenity of the study area as a whole considered the population distribution, settlement pattern, road network pattern, visibility pattern, number and type of viewers. It also took into account the individual assessments for each of the viewpoints and each of the roads.
- 7.13 The only viewpoint which will accrue substantial adverse impacts from the development is the Minor Road at Culblair Access. Moderate adverse impacts will result from some or all of the phases of development for B9006/A96 junction, B903 at Mid Connage and Easter Dalziel and for the B9039 east bound. Slight adverse impacts will result for B9006 at Viewhill and for the A96 westbound, the B9039 westbound and the B9006 southbound.
- 7.14 Other viewpoints and roads will not be affected and it is therefore considered that the proposed development, would have a slight adverse effect on the visual amenity of the study as a whole area both in the short and long term. This is a not significant effect in terms of the assessment.
- 7.15 Mitigation measures taken into account in the above assessments include:

Perimeter planting parallel to long stay car park access road.

To screen views of access road/provide a back cloth of views to access road and to physically and visually link existing planting around the industrial estate with existing scrub woodland south of Easter Kerrowgair.

Low emission lighting.

To minimise night time impacts of lighting.

Perimeter planting to long stay car park boundary.

To screen views of car park/provide a back cloth of views to car park and to physically and visually link existing scrub woodland south of Easter Kerrowgair with further existing scrub woodland at Mid Connage.

Tree and shrub planting within extension to car park at terminal building.	To break up expanse of car parking and provide visual linkage to existing coniferous vegetation around the industrial estate.
Tree and shrub planting adjacent to support service/stores.	To serve as a foil for the buildings and to visually link the development with the adjoining coniferous plantation around Dalcross Industrial Estate.
Recessive colours and matt finishes for buildings.	To minimise visual impact and glare.

AIR QUALITY

- 7.16 The assessment of principal air quality impacts focused on two key pollutants likely to be emitted in potentially significant quantities as a result of the proposals, as recommended in Defra guidance - NO2 and PM10. In addition, emissions of VOCs, benzene and CO have been considered as these are often emitted from airports in significant quantities.
- 7.17 In terms of the operational impact on air quality from the additional aircraft movements, it was found that the airport activity currently, and with the proposed increases, represents only a small fraction of the Defra assessment criterion for airports requiring a more detailed air quality assessment.
- 7.18 Emissions from the airport are small in the context of other regional airports.
- 7.19 The future increases in air and road traffic as a result of the proposed airport expansion are unlikely to significantly impact on air quality. Background concentrations of all pollutants considered have been shown to be low with respect to the assessment criteria. The additional impact from traffic represents 0.2hgm3 of NO2 (less than 1% of the long-term objective concentration for the protection of human health). Although emissions from aircraft are likely to increase, it is considered unlikely that these sources will have a significant impact on air quality.

NOISE

7.20 The air noise modelling for the airport is presented in terms of the Lden noise contours for each assessment year (and within the following figures attached in Appendix IV to this report) as follows:

- Figure 2.1 - Lden (day, evening, night) Aircraft Noise Contours, 2005.
- Figure 2.2 - Lnight (night-time) Aircraft Noise Contours, 2005.
- Figure 2.3 - Lden (day, evening, night) Aircraft Noise Contours, 2015.
- Figure 2.4 - Lnight (night-time) Aircraft Noise Contours, 2015.
- Figure 2.5 - Lden (day, evening, night) Aircraft Noise Contours, 2030.
- Figure 2.6 - Lnight (night-time) Aircraft Noise Contours, 2030.

7.21 The areas of the various noise contours, (covering the noise ranges recommended under the Environmental Noise Directive) are shown in Tables 2.1 and 2.2, and are discussed further below.

Table 2.1 Lden Noise Contour Areas (km²)

Year	55d B	60 dB	65 dB	70 dB	75d B
2005 Actual	4.1	1.4	0.6	0.3	0.1
2015 Forecast	1.7	4.1	1.4	0.6	0.3
2030 Forecast	15.7	5.7	2.0	0.8	0.4

Table 2.2 Lnight Noise Contour Areas (km²)

Year	45d B	50 dB	55d B	60d B	65d B	70 dB
2005 Actual	5.0	1.7	0.7	0.3	0.1	-
2015 Forecast	16.4	5.6	1.9	0.7	0.3	0.1
2030 Forecast	19.0	6.7	2.2	0.8	0.4	0.2

7.22 The noise contours are plotted and reported at given levels that indicate the level of noise affect expected on the local community. In broad terms, noise impacts are not expected beyond the outermost day/evening/night contours (Lden 55 dB) or the outermost night-time contours (Lnight 45 dB). Within these, the higher level contours depict higher levels of noise impact.

7.23 The noise contours do not depict zones within which noise impacts are suddenly apparent and, since peoples' responses to noise vary greatly, individuals may be disturbed or annoyed by noise outside the outer contours or may not be affected well within the contours. However, the set of noise contours presented give a clear picture of the trends that are expected in the noise climate around the airport, in terms of noise contours that represent typical community responses to noise.

- 7.24 It can be seen from Figures 2.1 and 2.2 that in 2005 there were very few dwellings within the Lden 55 and Lnight 45 dB noise contours and the higher noise contour bands fell mainly within the aerodrome. This is indicative of a low level of community noise impact.
- 7.25 By 2015 the Lden 55 of Lnight 45 dB noise contours are predicted to grow in area by a factor of about 3, and to encompass more scattered dwellings in areas including:
- To the southwest of the airport - those around Castle Stuart and the junction of the A96 and the B9093; and
 - To the northeast of the airport - at Viewhill on the B9006 and at the Muir of Balnagowan on the B9092.
- 7.26 The 2015 Lnight 45 dB contour is a little larger than the Lden 55 dB contour indicating that although there are relatively few aircraft movements in the night-time (2300-0700 hours) period, night noise impacts are likely to be broadly as significant as those in the day. This is similar for 2005 and 2030, indicating a broadly unchanging significance of night noise compared to daytime and evening across the master plan timeframe.
- 7.27 The 2030 noise contours are predicted to be a little larger than those for 2015, but not substantially so, encompassing only a slightly increased population. All the contours stop short of any major existing or proposed housing areas including Culloden to the southwest.
- 7.28 In summary, based on the current growth forecast it is expected that the airport will become noisier, but not so much as to bring large communities into the zone of significant noise impact.

ECONOMIC IMPACT

- 7.29 The analysis of economic impact of the proposals considered three types of impact, in terms of full-time equivalent (FTE) employment, associated with the forecast development of the airport up to 2030. The impacts have been calculated at two geographic levels: Inverness and Nairn; and the Highlands and Islands.
- 7.30 The existing position was based on the report "Economic Impact of Inverness Airport" (2005) which was undertaken on behalf of HIAL, Highlands & Islands Enterprise (HIE) and the local enterprise company. This report showed that the principal airport for the Highlands and Islands and the air connectivity it provided produced an annual output of €120 million and supported 2,297 full-time equivalent (FTE) jobs in the region in 2005.

7.31 On-site Employment - on-site impacts are generated by the activities of companies based on-site at the airport. They can be broken down into three categories:

- Direct. These are within the companies based at the airport.
- Indirect. These are generated by the purchases of goods and services by airport-based companies.
- Induced. These arise from spend in the wider economy of the wages of those directly and indirectly employed by companies based at the airport.

7.32 The projections for future years were derived by analysis of the following data sources:

- The median passenger forecasts contained in the master plan.
- The proposed physical developments at the airport as set out in the plan.
- Existing research into the relationship between airports' passenger throughput and levels of direct on-site employment.
- Approaches undertaken in other reports/airport master plans.

7.33 The impacts do not include those that could arise from Inverness Airport Business Park which is planned for an area adjacent to the airport and is projected to accommodate up to 5,000 FTE jobs by 2035.

7.34 Off-site Employment: Visitor Expenditures - these impacts arise from the expenditures of inbound visitors who use Inverness Airport. They encompass direct, indirect and induced effects. The forecast figures are gross. Therefore, they do not account for the proportion of visitors who would make the same trip and related expenditures if Inverness Airport did not exist. Nor do they allow for the expenditures made outside the region by those travelling outbound from the airport.

7.35 The existing position was based on that shown in the "Economic Impact of Inverness Airport" report. Projections for future years were made by reviewing the following:

- The median passenger forecasts contained in the master plan.
- The expected composition of projected passenger growth, including the types of new passenger services, expected at Inverness in the period to 2030.
- Forecast growth in visitor activity in the Inverness Airport catchment area.

7.36 Construction Employment - these are the employment impacts of the physical works identified in the master plan. They relate to the forecast spend, and its phasing, by both HIAL and third parties, and were calculated using standard ratios on the relationship between construction expenditure and employment in the Highlands and Islands. To be consistent with the other two forms of impacts, temporary construction jobs have been expressed as FTEs, with, as standard, an FTE assumed to be of 10 years duration.

7.37 Table 2.1 shows the forecasts for on-site employment and for passenger numbers under the median passenger forecast.

TABLE 2.1: FORECAST DIRECT ON-SITE EMPLOYMENT (FTE)						
	2005 (actual)	2010	2015	2020	2025	2030
Passengers	626,284	922,515	1,143,067	1,435,813	1,593,389	1,750,964
Employment	506	728	848	1,002	1,065	1,121

7.38 It shows that on-site employment at Inverness airport is forecast to increase from 506 FTE jobs in 2005 to just over 1,000 FTE in 2020 and 1,121 FTE in 2030. This represents growth of more than 100%, and over 600 FTEs, in employment.

7.39 Table 2.2 presents total on-site impacts, encompassing direct, indirect and induced employment. It also shows the employment that will accrue to Inverness and Nairn; and that for the Highlands and Islands as a whole.

TABLE 2.2: FORECAST TOTAL ON-SITE EMPLOYMENT (FTE)						
	2005 (actual)	2010	2015	2020	2025	2030
<i>Inverness & Nairn</i>	<i>710</i>	<i>1,022</i>	<i>1,190</i>	<i>1,407</i>	<i>1,495</i>	<i>1,574</i>
Highlands & Islands	751	1,081	1,259	1,488	1,582	1,665

7.40 At the regional level, employment is forecast to increase to almost 1,500 FTE jobs by 2020 and to 1,665 FTE by 2030. The vast majority of employment is expected to be within Inverness and Nairn which will account for over 1,400 FTE by 2020 and 1,574 FTE in 2030. Thus total employment will more than double in the 25 years to 2030.

OFF-SITE EMPLOYMENT: VISITOR EXPENDITURES

7.41 Table 2.3 shows the forecast employment generated by the expenditures of visitors travelling via the airport. Again, the forecasts distinguish between impacts within Inverness and Nairn and those for the Highlands and Islands.

TABLE 2.3: FORECAST OFF-SITE EMPLOYMENT (FTE)						
	2005 (actual)	2010	2015	2020	2025	2030
<i>Inverness & Nairn</i>	843	1,217	1,508	1,910	2,145	2,391
Highlands & Islands	1,758	2,540	3,146	3,984	4,474	4,988

7.42 At the Highlands and Islands level, employment is projected to increase from 1,758 FTE in 2005 to almost 4,000 FTE by 2020 and to just under 5,000 FTE by 2030.

7.43 Just under half of the off-site employment is forecast to occur within Inverness and Nairn. Employment within the area is projected to increase from 843 FTE in 2005 to approaching 2,400 FTE by 2030.

7.44 Overall, employment in 2030 is forecast to be over two and a half times the 2005 level.

CONSTRUCTION-RELATED EMPLOYMENT

TABLE 2.4: FORECAST CONSTRUCTION EMPLOYMENT (FTE)				
	2006-2010	2011-2020	2021-2030	Cumulative Totals
<i>Inverness & Nairn</i>	34	72	47	153
Highlands & Islands	37	78	51	166

7.45 Table 2.4 presents projected construction employment.

7.46 Within the Highlands and Islands it is expected that a cumulative total of 166 FTE construction jobs will be generated. Reflecting the anticipated phasing of construction spend, most (78 FTE) of these jobs will be generated between 2011 and 2020. The vast majority of regional level impacts will occur within the Inverness and Nairn area, with a forecast cumulative total of 153 FTEs in the period to 2030.

TOTAL QUANTIFIED IMPACTS

7.47 Table 2.5 summarises the combined on-site and off-site employment forecasts.

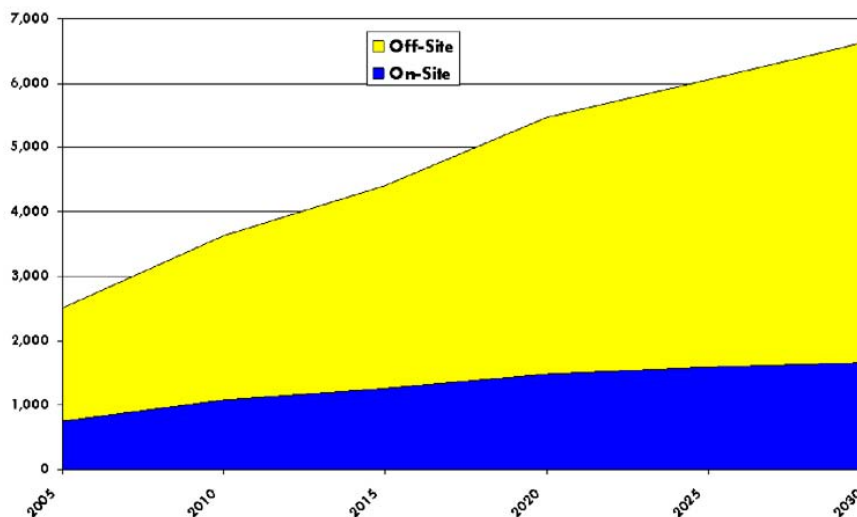
TABLE 2.5: FORECAST ON-SITE AND OFF-SITE EMPLOYMENT (FTE)						
	2005 (actual)	2010	2015	2020	2025	2030
<i>Inverness & Nairn</i>	1,553	2,239	2,698	3,317	3,640	3,965
Highlands & Islands	2,509	3,620	4,405	5,472	6,056	6,653

7.48 Total employment generated by Inverness Airport within the Highlands and Islands is forecast to increase significantly over the period: from around 2,500 FTE in 2005 to approximately 6,650 FTE by 2030. This represents growth of over 4,100 FTE (265%). Employment within Inverness and Nairn is forecast to grow from 1,553 FTE in 2005 to over 3,900 FTE in 2030, with the area accounting for over half (60%) of the airport's regional employment impact.

7.49 In addition, there will be a cumulative total of 166 FTE construction jobs at the regional level, 153 of which will occur within Inverness and Nairn.

7.50 Figure 2.1 shows the relative importance of on-site and off-site employment.

Figure 2.1: On-Site and Off-Site Employment (FTE): Highlands & Islands: 2005-2030



OTHER ECONOMIC IMPACTS

- 7.51 There will also be a number of other types of economic impacts as follows.
- 7.52 First, catalytic effects. Businesses in the airport's catchment area will benefit from the growing range of flights which will allow them to travel to meet colleagues, customers, suppliers, and to attend conferences and other networking events. They will also be able to benefit from similar visits made to their premises by those travelling into the region. The presence of the airport and its growing range of flights will make the region more attractive to inward investors and existing companies that may be considering a number of possible locations for further investment.
- 7.53 Second, the economy will benefit by greater opportunities to move freight by air, both in the belly holds of an expanding range of passenger services and in any new air freight operations.
- 7.54 Third, business and leisure passengers will benefit from journey time savings. The increasing range of passenger services will provide greater opportunity to fly direct to final destinations from Inverness rather than having to travel from other airports such as Aberdeen, Edinburgh and Glasgow. This will reduce overall journey times for those travelling to/from the Inverness airport catchment area.

8.0 Next Steps



8. NEXT STEPS

This master plan sets out our vision for the growth of Inverness Airport over the next 25 years by demonstrating how growth can be accommodated on the airport estate as it continues to develop and provide improved connectivity for the region.

The master plan has been prepared in accordance with Government guidance set out in the Aviation White Paper produced in December 2003, as well as the Department for Transport guidelines on the preparation of airport master plans published in July 2004 and the Aviation White Paper update published in December 2006.

This plan now informs HIAL's capital investment programme for Inverness Airport and is shared with regional and national planning, development and regulatory bodies. In line with DFT guidance, the plan will be revised regularly and amended as necessary.

This full report and appendices is available at the www.hial.co.uk website.

Appendix

- I THE AIRPORT ESTATE (LAND BOUNDARY)
 - II 2006 CURRENT LAND USE
 - III 2010, 2020, 2030 PROPOSED LAND USE
 - IV NOISE CONTOUR MAPS
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local access, global outlook

