

Manchester's Core Strategy

Manchester Airport - The Need for Land

June 2010 (MCC Issue)

manchesterairport.co.uk



1. Introduction

- This paper provides Manchester Airport Company's response to Manchester City Council's Local Development Framework (LDF) Proposed Option stage. Manchester City Council is consulting upon three options at this stage of its Core Strategy¹.
- **The Airport Company support option three 'Review the Green Belt boundary in the current Operational Area and proposed extensions set out in the Manchester Airport Masterplan and Land Use Plan 2007. Remove those areas which will no longer serve a Green Belt function during the lifetime of the Core Strategy on the basis of proposed airport expansion. This will require any proposals to demonstrate:**
 - The need for and proposed use of specific areas of land;
 - There is no adverse impact on the highways network and surface access improvements are proposed to accommodate the growth in passenger numbers
 - Maximum possible reductions in noise
 - Avoid an adverse impact on areas of international or national conservation, ecological and landscape importance and where this is not possible put in place mitigation measures to compensate for any adverse impact.'
- The Airport Company believes there exists compelling, robust and up-to-date evidence to support this option.
- The framework that will guide the physical development of the Airport up to 2030 is set out within this document and the Airport's Master Plan and associated Land Use Plan². These documents frame the future development of Manchester Airport, and align future land-use requirements with national policy.

The main principle of development at the Airport is one of land use efficiency and technological improvement. Limits have been placed on the physical spread of the site. The Airport Company's approach is for redevelopment of land within the existing boundary as far as possible and activities that do not need direct connection to the airfield moved to the site periphery, or off-site altogether.

- The 'Future of Air Transport' White Paper and its Progress Report³ are clear statements of national aviation policy. The Government's long-term proposals for airport development have been tested and reiterated through various documents and policy announcements. The White Paper and subsequent statements of Government policy have reaffirmed that national air transport policy is wholly

¹ Policy Approach MA2 - Manchester Core Strategy Proposed Option Consultation, Manchester City Council, November 2009

² 'Manchester Airport Master Plan' and 'Land Use Plan'. Manchester Airport. October 2007

³ 'The Future of Air Transport'. Department for Transport. December 2003 & 'Air Transport White Paper Progress Report 2006'. Department for Transport. December 2006

consistent with Government's obligations and strategies to tackle climate change. The White Paper shows clear policy support for the development of Manchester Airport up to the capacity of its two runways.

- The Regional Spatial Strategy (RSS 2008) forms part of the statutory Development Plan. Both it and the White Paper support the expansion of the Airport, within environmental limits, and (in the case of RSS), support an alteration to the Green Belt to deliver that growth (Policy RD4). The RSS recognises the importance of Manchester Airport as a key driver for regional growth in the globalised economy.
- **Policy RT5 requires plans and strategies to support the economic activity generated and sustained by the Region's airports. Airport boundaries, as existing or as proposed, should be shown in Local Development Documents. Development that would impede the operational requirements of an airport should not be permitted within this boundary.**
- In addition, in determining requirements for the expansion of an airport beyond its existing boundary, plans and strategies should take account of:
 - the scope for intensification and rationalisation of activities and facilities within the existing boundary;
 - the scope for relocating existing activities or facilities off-site; and
 - the scope for developing proposed activities or facilities off-site⁴.
- The Operational Area of Manchester Airport currently extends to 625 hectares, **and for its passenger throughput, Manchester is one of the most efficient airports in Europe⁵.**
- The Airport's Master Plan provides the context to guide the development of the site up to 2030 in line with the Air Transport White Paper. It identifies a number of essential uses and facilities that are required for the Airport's operation and need to be located within the Operational Area⁶. It also sets out the locations where extensions are required to the Operational Area (Areas A to F).

⁴ See Appendix A page 44 - "Table Of Efficiencies " for assessment on meeting RT5 tests.

⁵ For example, Heathrow is the only other two-runway airport in the UK and has a site area of 1,227 hectares. Proposals have also been prepared for the development of a second runway at Stansted. If implemented this would increase the airport's site area from the current 957 hectares to 1,398 hectares. The proposed Operational Area identified in the Manchester Airport Land Use Plan would increase the existing site from 625 hectares to some 800 hectares.

⁶ *Operational Uses as advocated within PPG13 (Transport) and agreed at the NW's RSS EIP are as follows:*

Operational facilities and infrastructure including: Runways and taxiways; Aircraft apron and handling services buildings and facilities; Aircraft fuelling and storage facilities; Emergency Services and control authorities facilities; Control tower, air traffic control accommodation, ground and air navigational aids, airfield and approach lighting; Facilities for the maintenance, repair and storage of service vehicles; Airfield drainage facilities. **Passenger and terminal facilities including:** Terminal facilities including passenger handling, lounges, baggage handling, catering and retail; Administrative accommodation for airlines, handling agents; tour operators, airport authority and Government agencies; Public and staff car parking; Public transport facilities, including rail, light rail, buses, coaches and taxis; Facilities for general and business aviation (including air taxi, helicopter and private use). **Cargo facilities including:** Freight forwarding and handling facilities and bonded warehouses; Associated accommodation for airline agencies, freight forwarders, integrators and Government agencies; Lorry parking, fuelling and servicing facilities; In-flight catering and flight packaging facilities. **Airport ancillary infrastructure including:** Car rental, maintenance and storage facilities; Hotel accommodation; Training centres for airlines and airport related services; Ancillary office accommodation; Maintenance facilities for aircraft and avionics; Petrol filling stations; Utility infrastructure including sewage, waste, telecommunications, water, gas and electricity. **Internal highways and infrastructure including:** Cycleways, footways and roadways. **Landscaping works including:** Strategic planting, earth mounding and habitat creation.

2. Capacity Drivers

- An expansion of the Operational Area is needed to deliver the national policy set out in The Future of Air Transport White Paper and set a clear planning framework for the Airport’s future development.
- This section of the evidence base sets out the approach that has been taken to the development of Airport capacity and the relationship this has in land use terms on the Operational Area.

A combination of:

apron / stand capacity,



terminal capacity,



runway capacity,



airspace capacity,



and

surface access capacity

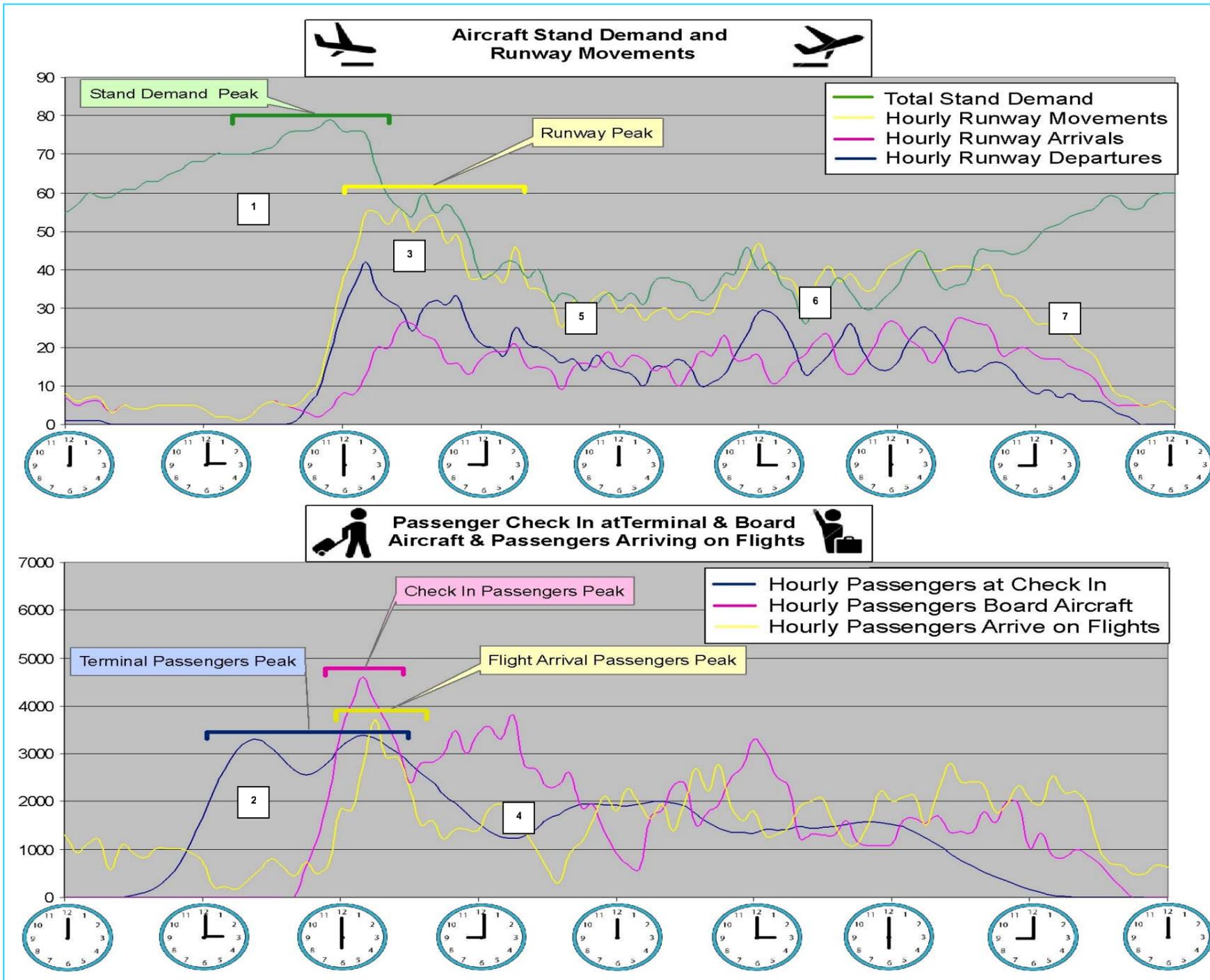


determine the capacity of an airport during the course of a day and the number of flights that can be scheduled to take off and land and also the number of passengers that can be handled.

- The Civil Aviation Authority (CAA) governs airspace in the UK. The Airport Company is responsible for ensuring that sufficient runway, apron / stand and terminal capacity to exist to meet current and future demand. The following sections provide an explanation on how the relationship between each of these drivers affect land use requirements at the Airport.

Busy / Peak Periods

Passengers (Terminals), Aircraft Parking (Apron / Stands) and Runway Movements all have peaks which occur at different times



The graphs show the relationship between arriving/departing passengers, stand demand and runway movements on a typical busy summer day.

A combination of airspace, runway, apron, terminal building and surface access capacity determine the number of flights that can be scheduled to take off and land during the course of a day and also the number of passengers that can be handled.

Traffic is significantly peaked towards the early morning. This is as a consequence of the passenger profile being largely UK outbound, and the large numbers of based aircraft that overnight at the Airport to operate the first wave of outbound flights.

Just under 80 aircraft are parked overnight and it is at this time that demand for stands is at its highest. [1].

In the morning passengers commence showing up for their early out bound flights typically between 1- 3 hours before departure – the peak is spread as passengers arrive at different times [2].

Stand demand falls immediately prior to the morning runway peak at 6.00am [3] as aircraft leave their parked positions. It is at this point that, on this particular day, the runway is at its peak capacity. These flights are principally low cost short/medium haul.

Around the same time, passengers arrive for the second wave of flights to leave the Airport [4]. These are typically long haul (transatlantic) wide bodied aircraft departing mid-morning [5].

Demand for all facilities then fluctuates throughout the day, with runway movements peaking again at 3pm [6].

[7] Many of the flights which left in the morning return in the late afternoon and evening which leads to an up turn in stand demand.

...the Airport must have sufficient capacity to cope with all of the different peaks and must plan ahead for each.

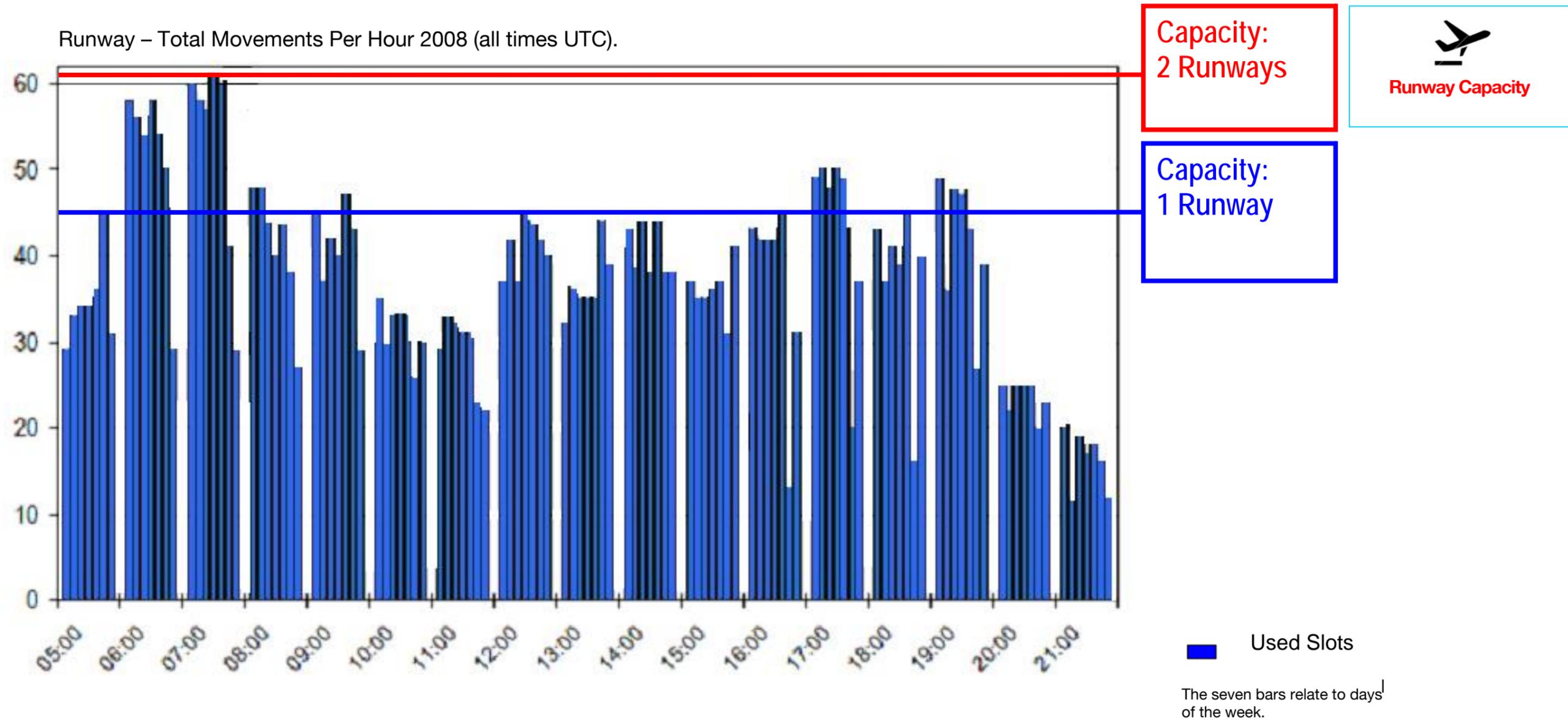
Busy / Peak Periods continued...

A: Runways



- The flows of arriving and departing passengers fluctuates throughout the day and year. In the summer peak, the demands on the Airport system are greater than during the quieter winter months. Aircraft movements in the summer schedule 08/09 equalled 128,696 compared to 67,771 aircraft movements in the winter schedule.
- Traffic is also significantly weighted towards the early morning. This is because the passenger profile is largely UK outbound, and so large numbers of aircraft are parked overnight to operate the first wave of outbound flights.
- **Overall the Airport's two runways currently have spare capacity, however at peak times the runways are running close to their departure and arrival capacity.** There are significant peaks in demand. For example, between the hours of 6.00am and 8.00am, the runways operate at their current declared capacity peak of 61 movements per hour.
- The Airport is a Fully Coordinated Airport. This means that airline schedules and runway slots are coordinated to ensure that airport capacity limits are not exceeded and that undue delays do not occur. Airport scheduling is undertaken on a global level that balances the needs of the airlines with available capacity at all the major airports across the world. **This means that the Airport Company's ability to spread the traffic peak is limited.**
- The two runways are not operated on a 24-hour basis as a planning condition restricts the use of the second runway to the hours of 06:00 – 22:00.
- The total capacity of the runway system is not the sum of the departure and the arrival capacities. This is as a result of the runway layout and the need leave a safe gap between arriving and departing aircraft.
- A major influence on runway capacity is the wide variety of aircraft types that serve the Airport. These range from Boeing 747's with some 400 seats to small passenger aircraft with around 45 seats. This affects the overall runway movement rates (and the available capacity) because of the need to leave larger spaces between heavy jets and the smaller aircraft.
- **Without additional peak hour capacity, some of the airlines will be unable to operate additional services at commercially viable times of the day.** This would have a significant affect on the overall development of Manchester as a major European airport as well as limiting its ability to connect to destinations in Europe and the wider world, which in turn would impact upon it's ability to maximise its economic benefits for the North West.

Busy Periods / Peak Periods – Runway Capacity continued...

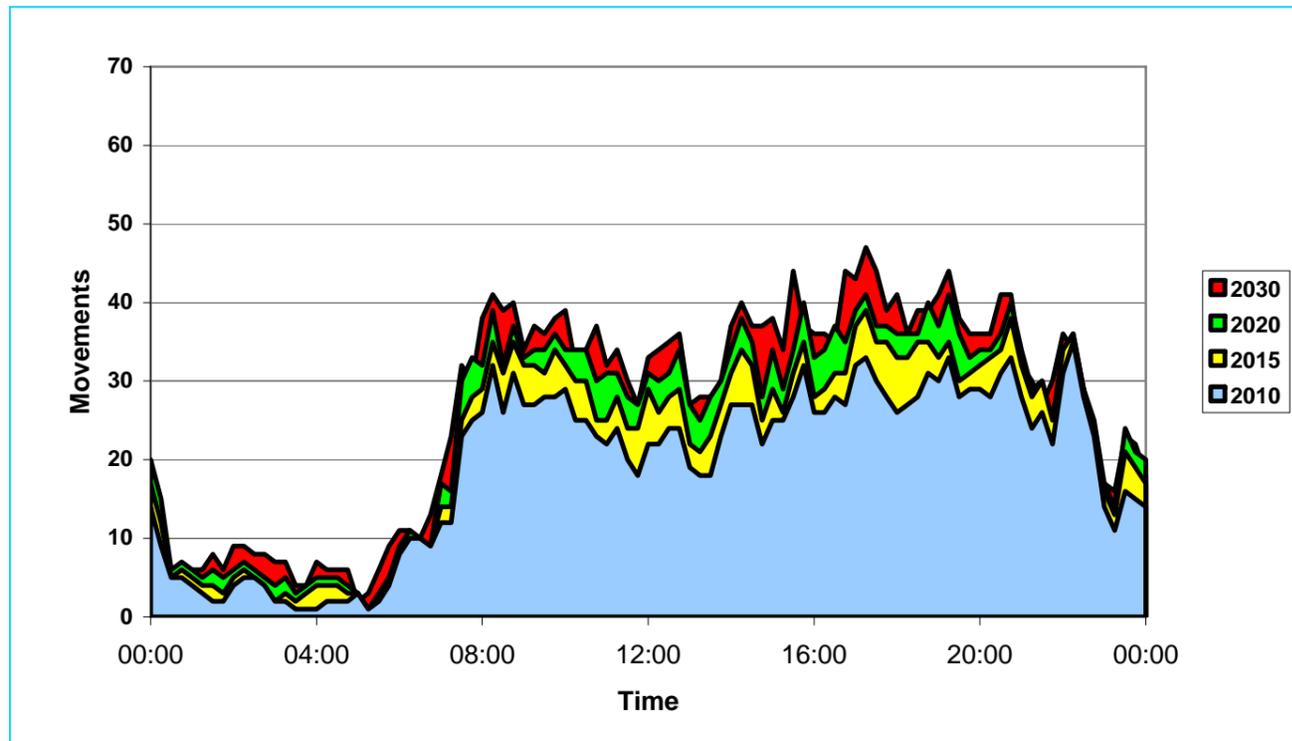


- The peak hour capacity of the two runways can be increased to **76 aircraft movements**. This will be achieved through taxiway improvements (including the creation of a full length parallel taxiway for the second runway), changes to local aircraft departure procedures, and additional runway crossing points.

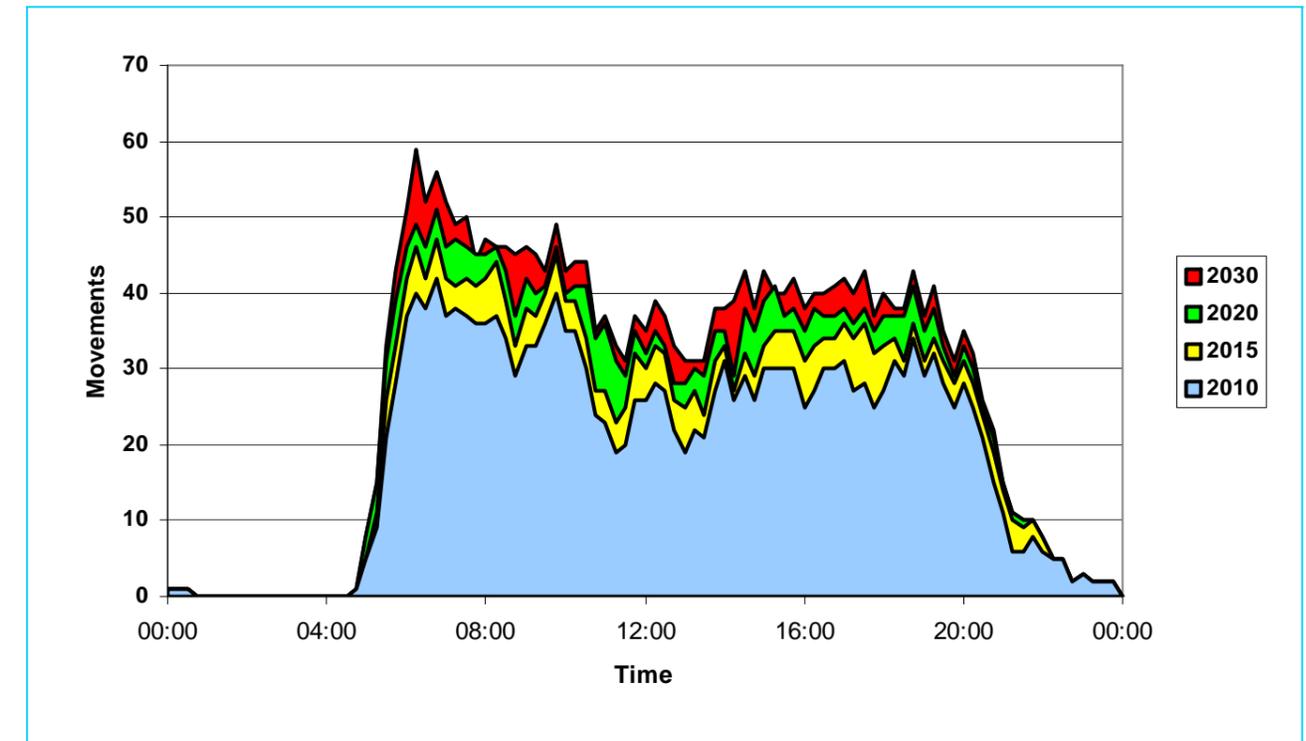
Busy Periods / Peak Periods continued...

Peak Hour Movements

Arrival Movements



Departure Movements



- The hourly runway movement rate will continue to show significant peaks across the day. The departure movements will reflect the future passenger profile and the large number of aircraft that will be parked overnight at the Airport. Arrivals will have a flatter profile but will continue to show a peak in the evening.

B: Terminal Capacity

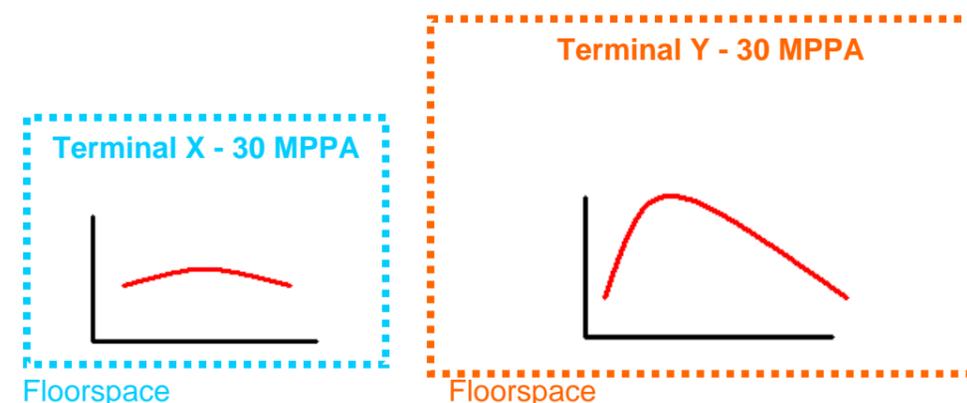


The Central Terminal Area currently accounts for around 33 hectares of the Operational Area (5 per cent of the total Operational Area).

- **Terminal 1** currently has a two way peak hourly capacity of 3,669 passengers and accommodates 11 million passengers per annum (mppa).
- **Terminal 2's** hourly peak capacity is 3,419 passengers throughput. Its annual capacity is 8 mppa.
- **Terminal 3** has a hourly peak capacity of 1,772 and accommodates 5.8 mppa (in total 24.8 mppa).

Annual capacity does not dictate Terminal size. The trigger for additional capacity is derived from both annual passenger throughput and anticipated peak hour flows (conventionally measured as the Standard Busy Hour⁷) taken alongside the standards of service that must be provided for customers. In 2008, the Airport's arrival and departure capacity was 8,000 passengers an hour. The Standard Busy Hour was 6,706 passengers, and the Busiest Hour was 8,528 passengers.

- For example: Terminal X & Terminal Y are shown to the right. They both have an annual passenger throughput of 30 million. Terminal Y however needs to be larger than Terminal X. This is because the demand at Terminal Y is more peaked than at Terminal X where it is evenly spread. Therefore Terminal Y must be larger to accommodate higher passenger numbers at the Peak. This could be a daily and/or seasonal (annual) peak. The passenger flow at Manchester is that of a Terminal Y.



- **Although there is limited ability to spread the peak of passengers using the Airport throughout the day, the Airport Company will continue to make a greater and more efficient use of the existing facilities. This improves efficiency in the use of land as well as the use of resources. Since 1993, the overall efficiency in apron and passenger terminal facilities has improved by**

⁷ See Glossary (page 43)

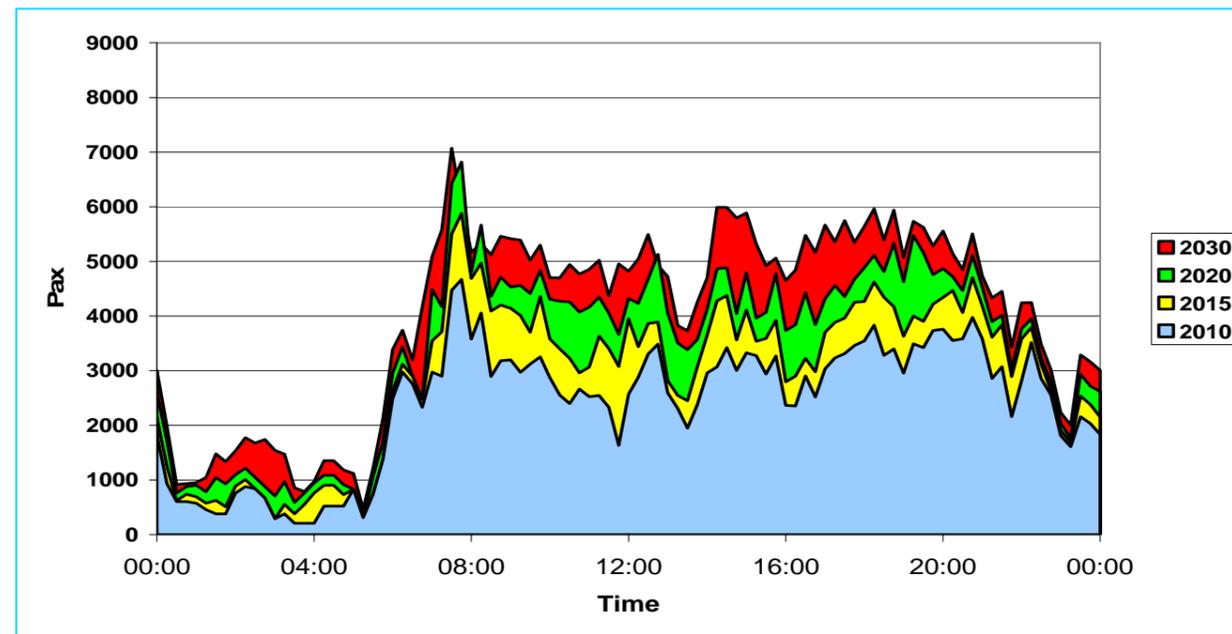
more than 15%. The Airport intends to continue this approach however there will be a continued need to ensure that there is available capacity to meet the peak hour demand.

- Passenger throughput will continue to be peaked across the day, although there will some degree of peak spreading at an annual throughput beyond 40 mppa. The forecast daily passenger flows for both arriving and departing passengers are shown in the following graphs.

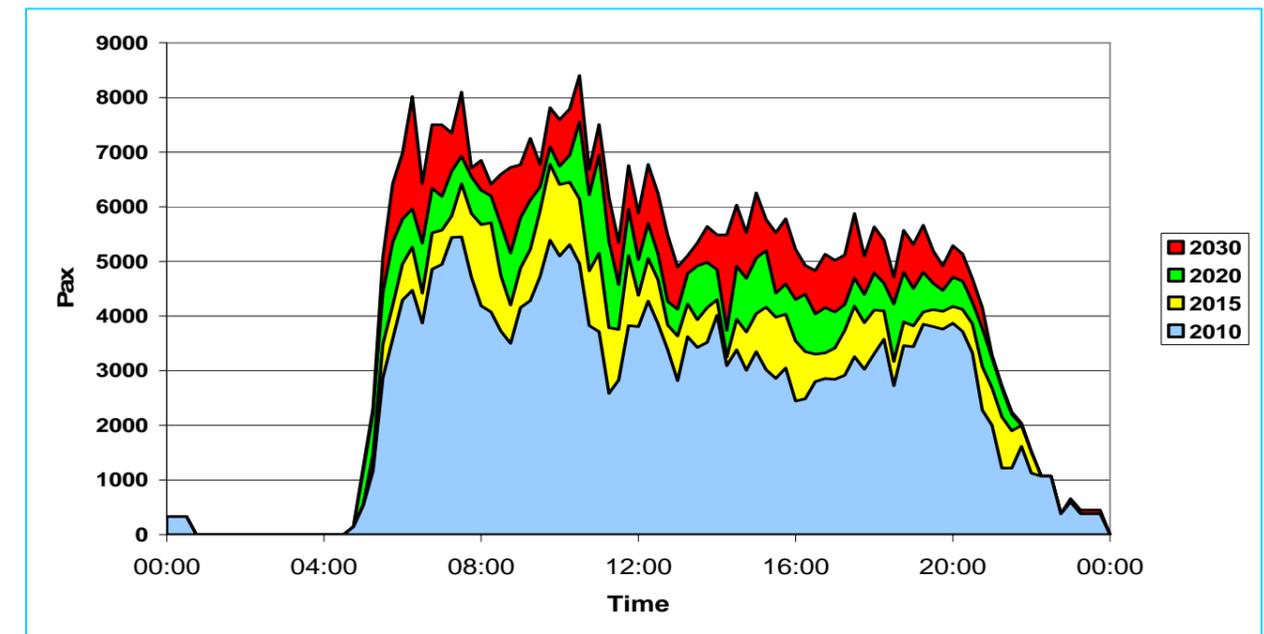


Peak Hour Passenger Flows

Arriving Passengers



Departing Passengers



- Basic planning criteria in the development of passenger terminals must take into account passenger traffic peaking characteristics, provide easy orientation, seek to minimise walking distances, avoid level changes, passenger cross over flows (to assist with transfer volumes and connecting times), and should also seek to be flexible to accommodate changes in the industry
- The principal terminal development assumptions are:
 - The core terminal areas (excluding piers and gate lounges) are influenced by passenger throughput, and the total area is based on 20 – 22 sqm per peak hour passenger;
 - Pier and departure lounge sizing is determined by the number of contact gates with 30m width for two sided piers and 18m for single sided;
 - The terminal footprint is 40% of the gross floor area at an average of 2.5 storeys;
 - International Air Traffic Association (IATA) Level of Service “C” is used for planning purposes;⁸

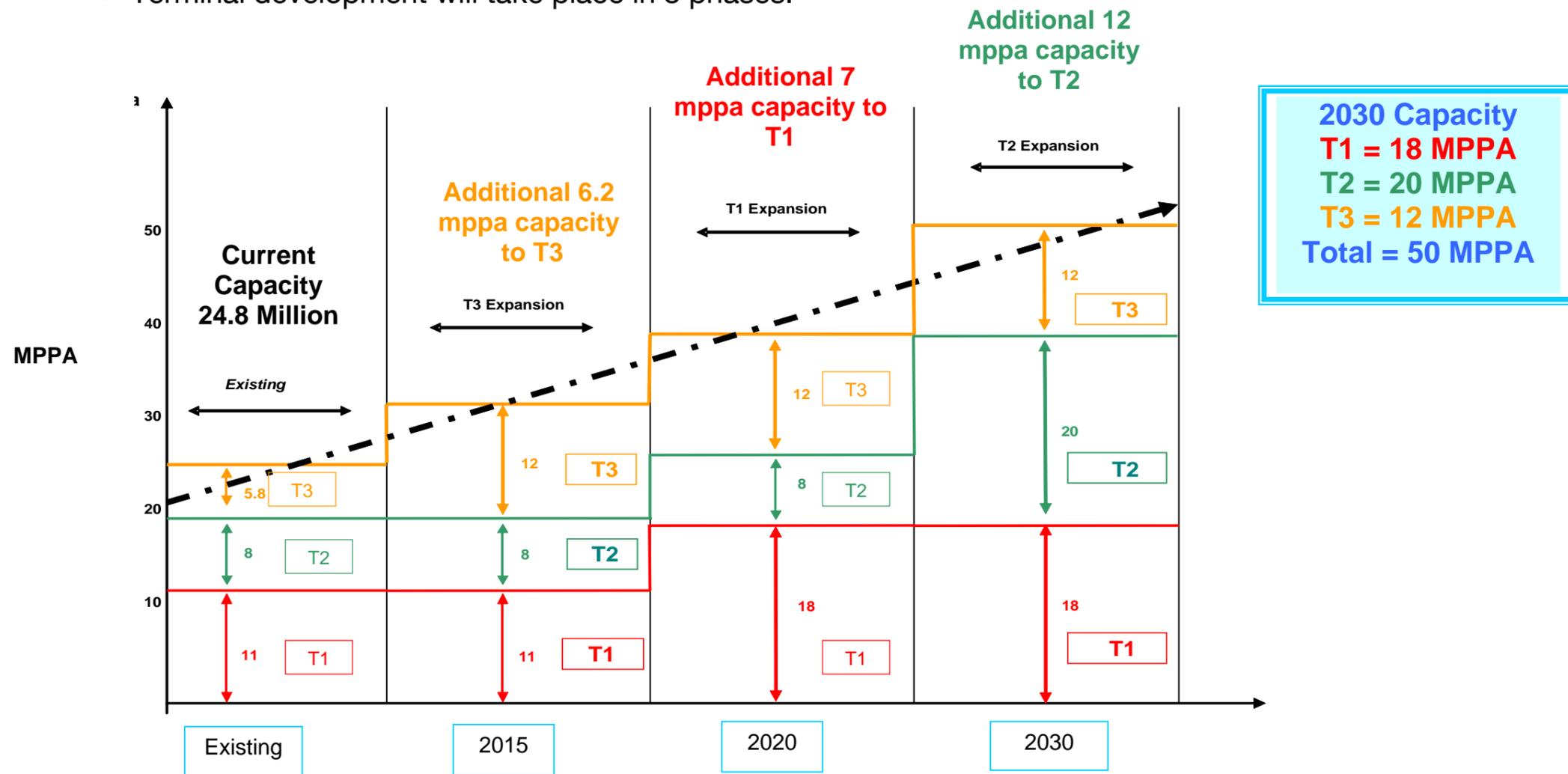
⁸ See Glossary for information on IATA Level of Service (page 43)

- New terminal areas are sized to take account of efficiencies resulting from new-build facilities and the introduction of new technologies that reduce the areas required for check-in; and
- Retail areas are included at 1,000 sqm / mppa



Terminal Capacity

- Terminal development will take place in 3 phases:



Forecast

- The terminal development strategy focuses on the redevelopment of the existing terminal complex in three phases. **The sequence for the development is to initially focus on Terminal 3, followed by Terminal 1 and then by Terminal 2⁹.**

⁹ A detailed study of the Airport's future capacity requirements and development strategies was carried out by Arup see Masterplan Options Study. Arup May 2009.

Busy Periods / Peak Periods - Terminal Capacity continued...



Terminal Capacity

- **Terminal 3 will be redeveloped to accommodate peak hour passengers flows of 2,352 (which equates to a total 12 mppa).** Proposals will be brought forward for the development of additional apron to the east, and land will be safeguarded for future terminal and pier extensions. In the longer term, capacity will be maximised when Terminal 1 and Terminal 3 complex and will be combined to create a single terminal operation.
- **Terminal 1 will then be refurbished to accommodate peak hour passengers of 4,704 (total capacity 18mppa).** These enhancements will provide sufficient capacity before the opening of additional capacity at Terminal 2. In the longer term an airside link between Terminal 1 and Terminal 2 will be developed as a way of improving the efficiency of both terminals.
- **Finally, Terminal 2 will be progressively developed to handle peak hour passenger flows of 10,500 (20 mppa).** This will include an extension of the main terminal to the northwest. Additional contact stands will be provided by the extension of the West Pier. Land has been safeguarded for the construction of remote satellite piers in the Terminal 2 apron.
- A summary of the terminal option appraisal can be found at Appendix 1 of the Land Use Plan (2007).

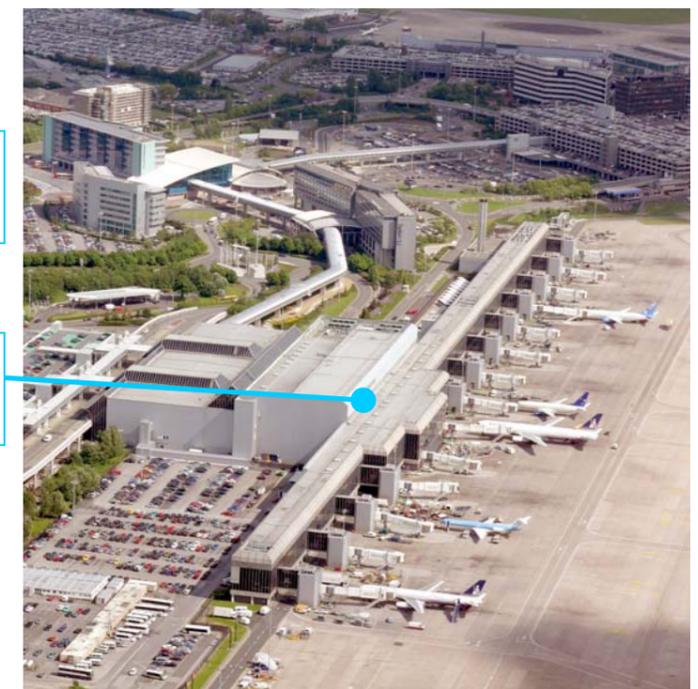
On completion, the Central Terminal Area will measure 41 hectares (5% of the 2030 Operational Area).

T1

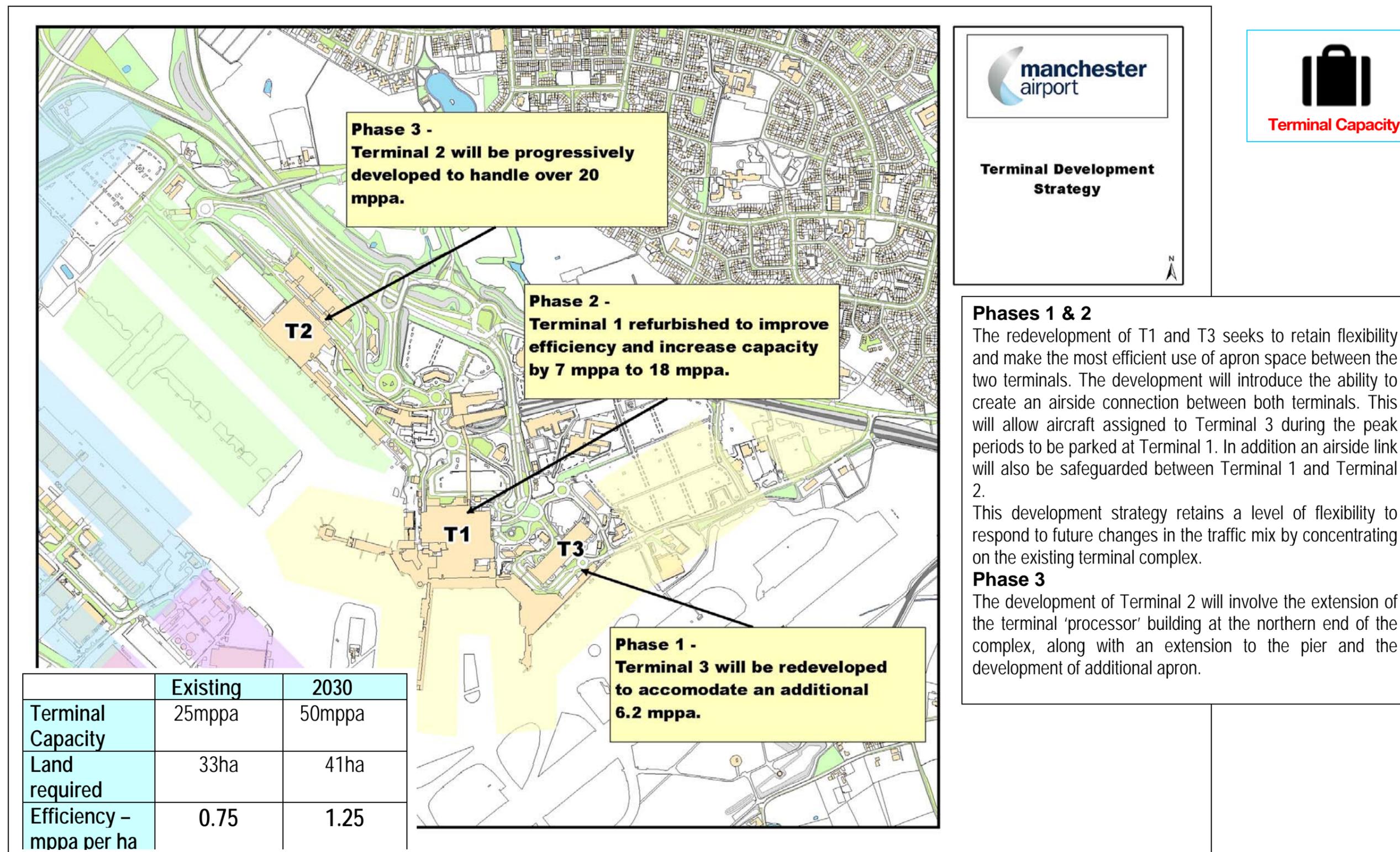


T3

T2



Busy Periods / Peak Periods - Terminal Capacity continued...



Phases 1 & 2
The redevelopment of T1 and T3 seeks to retain flexibility and make the most efficient use of apron space between the two terminals. The development will introduce the ability to create an airside connection between both terminals. This will allow aircraft assigned to Terminal 3 during the peak periods to be parked at Terminal 1. In addition an airside link will also be safeguarded between Terminal 1 and Terminal 2.

This development strategy retains a level of flexibility to respond to future changes in the traffic mix by concentrating on the existing terminal complex.

Phase 3
The development of Terminal 2 will involve the extension of the terminal 'processor' building at the northern end of the complex, along with an extension to the pier and the development of additional apron.

Busy / Peak Periods - continued...



C: Apron Development

- In conjunction with the three phases of terminal expansion, there will be three phases of apron expansion (although it should be noted that due to the nature of airport expansion, the building of the terminal and apron phases will not wholly coincide):

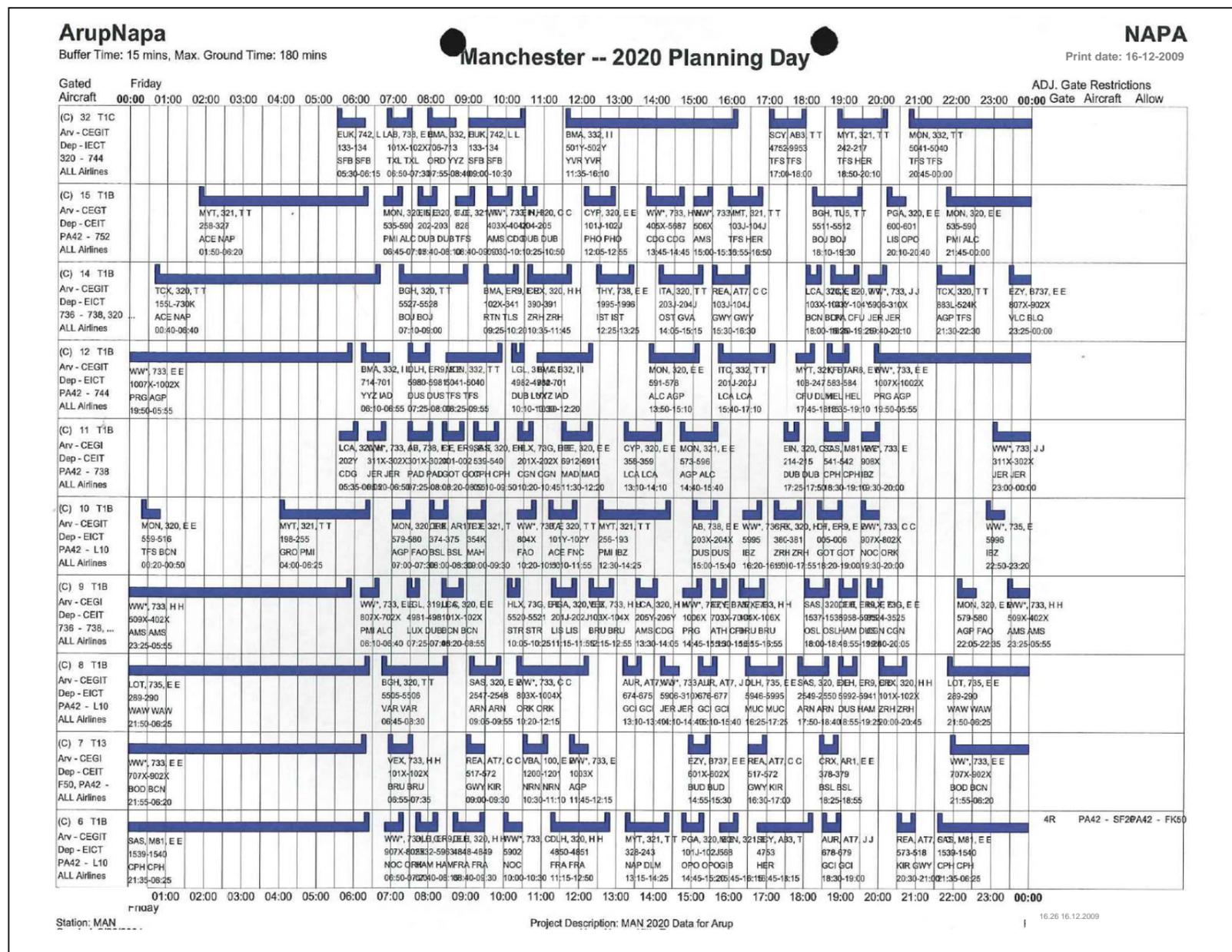
Passenger Numbers To Be Accommodated In Each Phase

	Existing	Phase 1	Phase 2	Phase 3
Peak Passengers Numbers	8,528	9,903	12,985	16,800

Number Of Stands Required to be in place for Each Phase

Stand Type	Existing			Phase 1			Phase 2			Phase 3		
	Contact	Remote	Total	Contact	Remote	Total	Contact	Remote	Total	Contact	Remote	Total
Required Stand Numbers	62	37	99	83	29	112	86	29	115	87	56	143

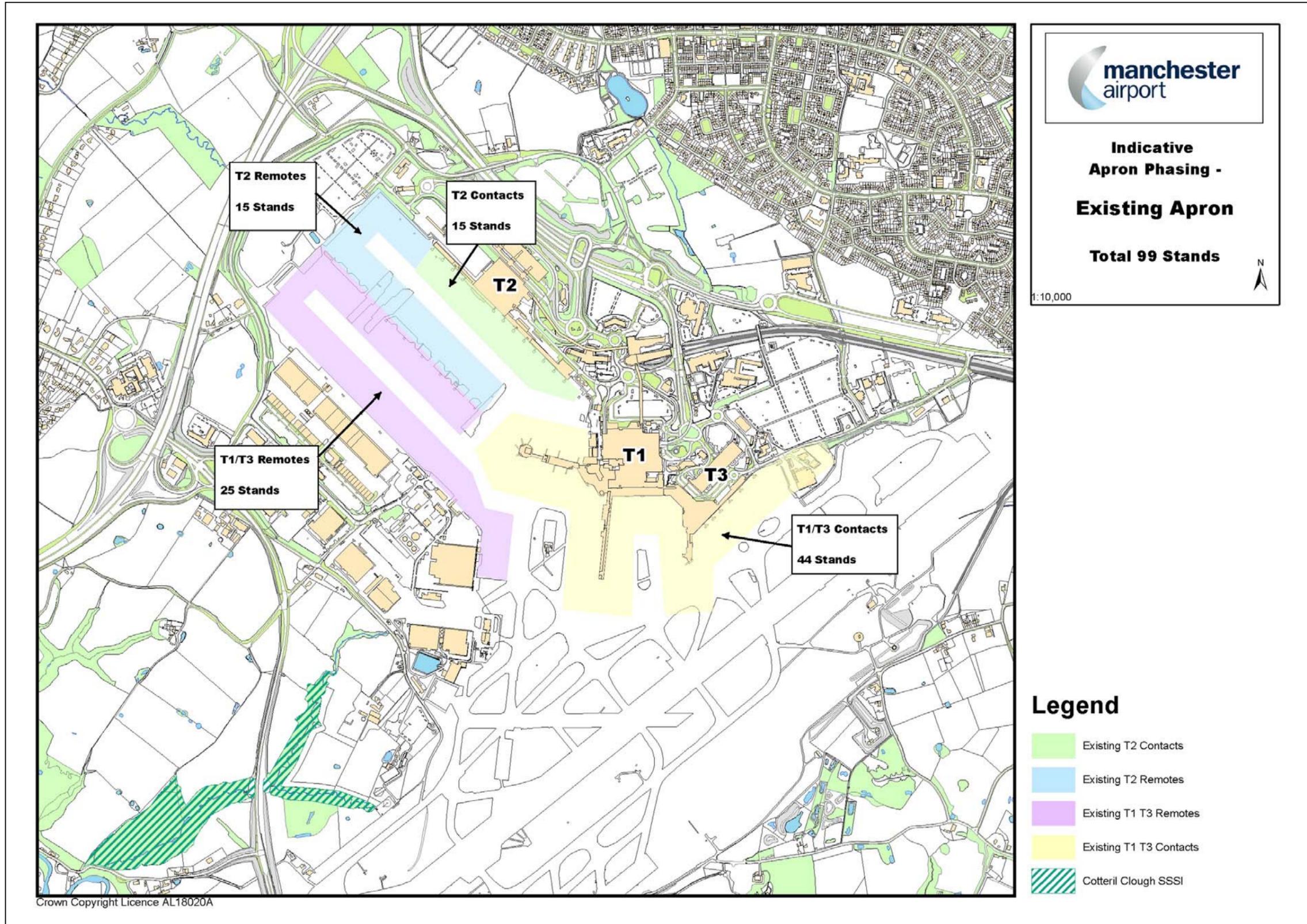
- The number of stands required to accommodate passengers in each phase is calculated for airport planning purposes by preparing a typical busy day timetable at a given point in time...



- A series of forecast flight and gating schedules (the time an aircraft is parked at a stand) have been prepared and take account of the future terminal allocation strategy.
- The flights are identified and based on airline, aircraft type, routing and ground time.
- The gating assignment takes the existing contact positions for the existing terminals as well as new contact and remote stands and then seeks to achieve a target that 90% of passengers are to be served by contact stands at 2030.
- The apron planning takes full account of the need to service the aircraft during the turnaround.
- This is usually within a given time to meet flight schedules. This requires airbridge connections or vehicle maneuvering space for remote stands along with various ground support vehicles and equipment.

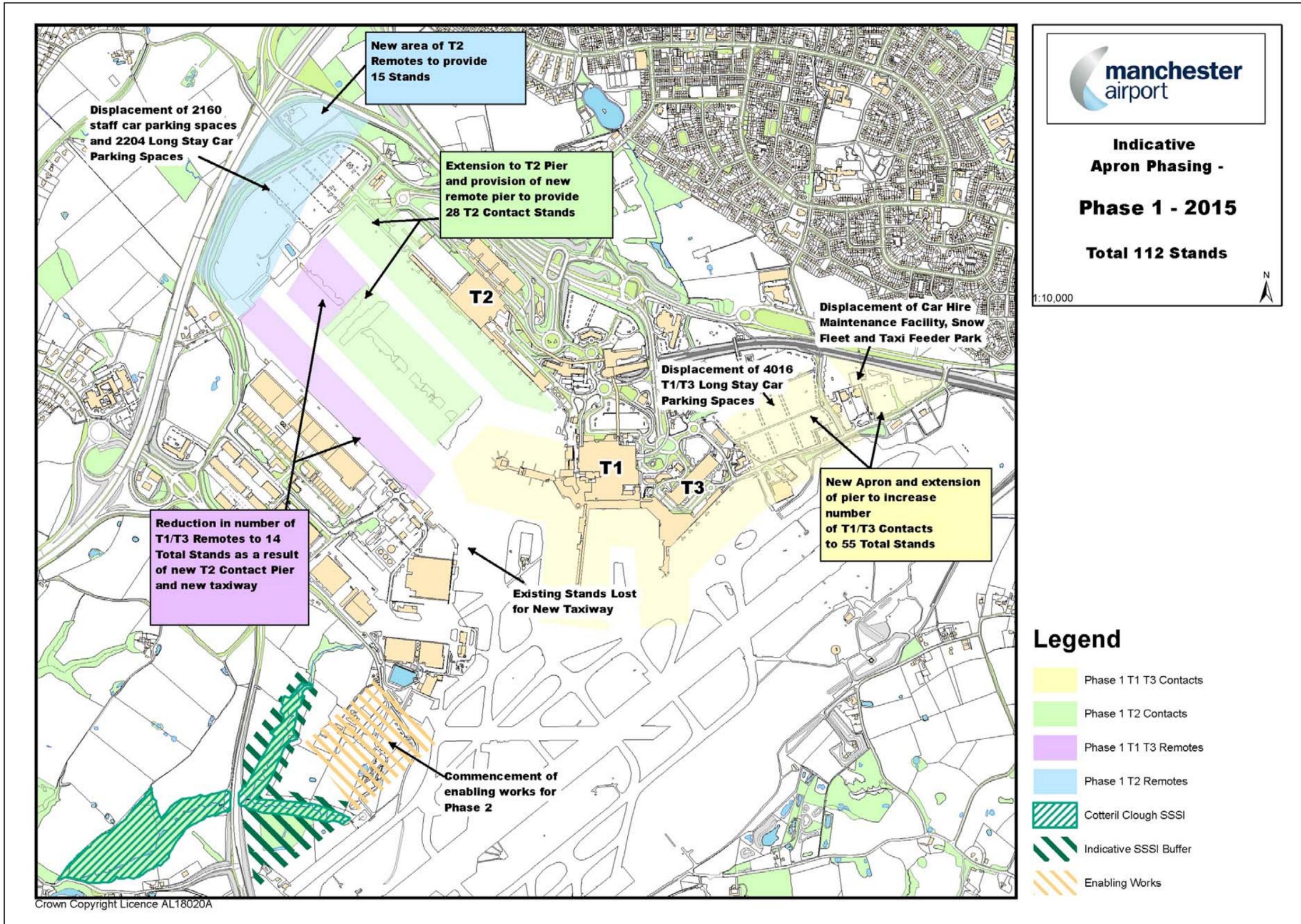
Within the Operational Area and the proposed extensions, this translates to the following development of the Apron and 44 Stands...

Apron Development continued...

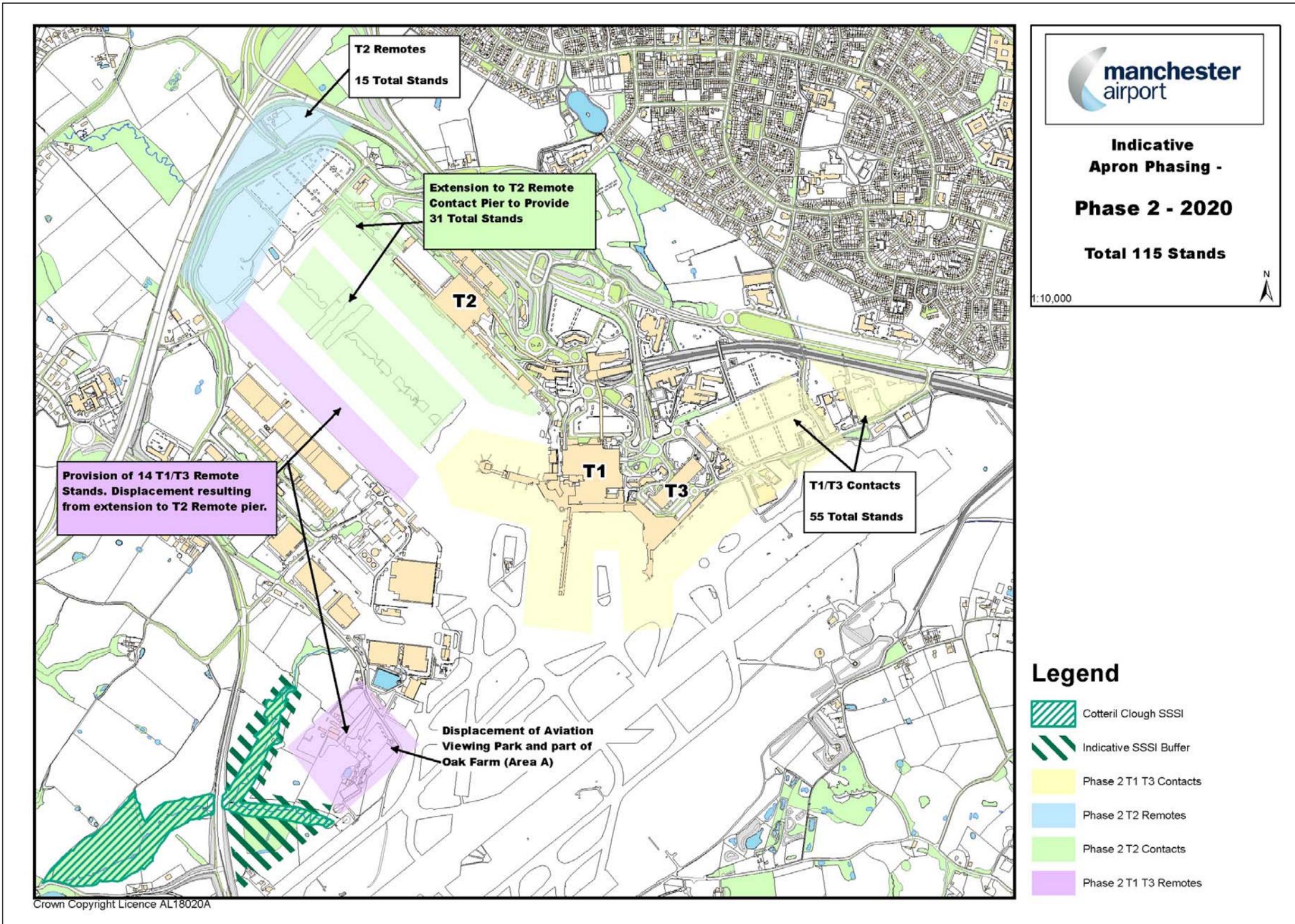


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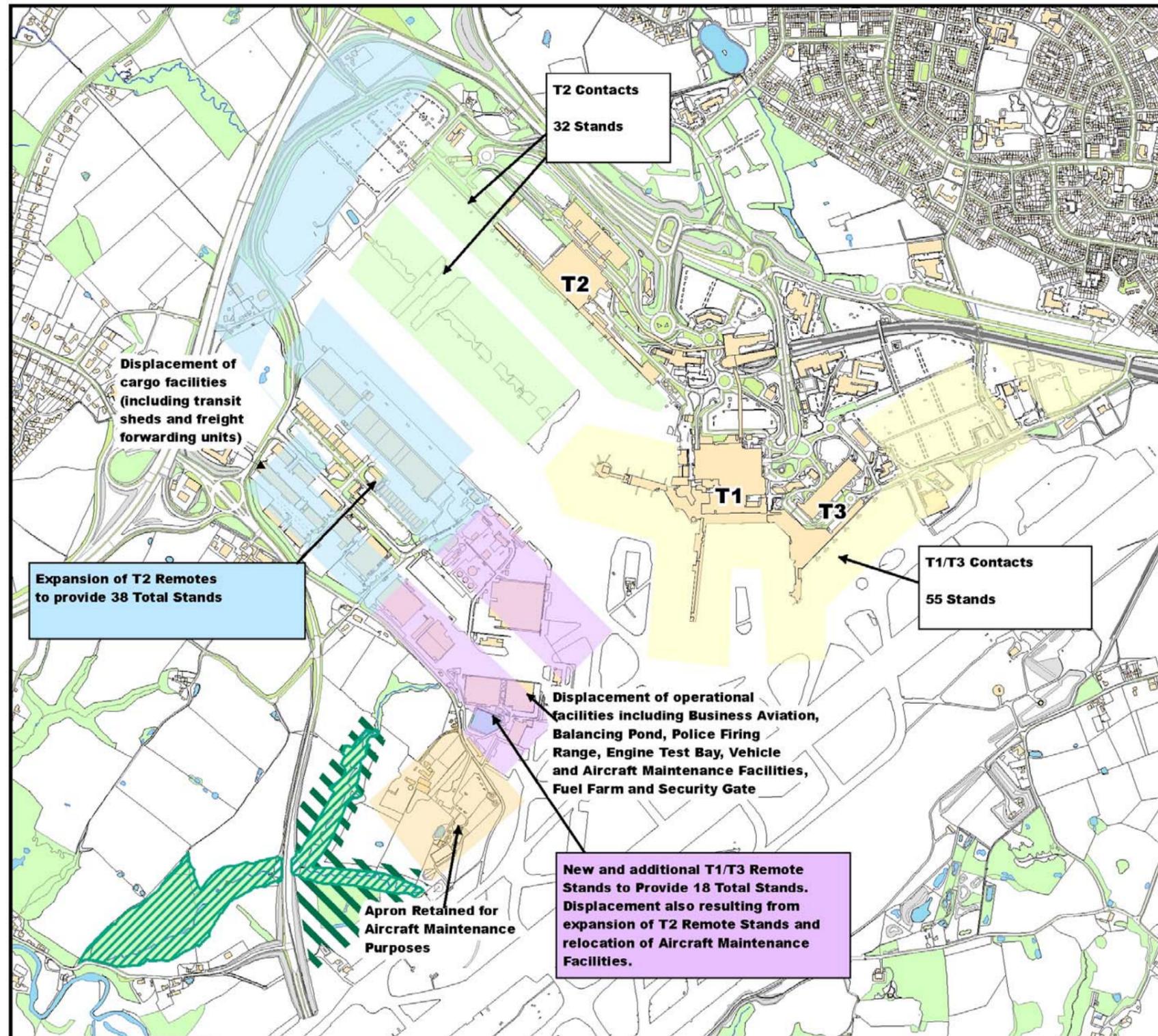
Apron Development continued...



Apron Development continued...



Apron Development continued...



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Indicative Apron Phasing - Phase 3 - 2030

Total 143 Stands

1:10,000



Legend

- T1 T3 Remotes
- T2 Remotes
- T2 Contacts
- T1 T3 Contacts
- Cotteril Clough SSSI
- Indicative SSSI Buffer
- Aircraft Maintenance

Apron Development continued...

The Airport currently has 99 aircraft stands that can be used to park a wide range of aircraft types. Apron accounts for some 85 hectares of the existing Operational Area (14 % of the total Operational Area).



Apron /
Stand
Capacity

- Additional apron is vital to increase capacity and handle additional aircraft in line with increases in terminal capacity. **The three stages of apron development will, in total, deliver the required 143 stands to accommodate passenger numbers.** This represents an additional requirement for 44 stands to serve all three terminals.
- Where appropriate, areas allocated as future apron will be developed for interim operational uses, continuing principles that the Airport applied in the development of Terminal 2. This is a way of making the most efficient use of land. New apron areas will be designed and located taking account of the environmental effects. Mitigation measures, particularly for noise, visual impact and water quality will be provided as an integral part of the development.

The three stages of apron will require an additional 100 hectares of land (185 ha in total, some 23% of the 2030 Operational Area).

Displaced Uses

- Apron must be linked to the runways and taxiway system so there will be a need for a significant displacement of uses that are currently located on land in these locations (as illustrated on the apron plans above).
- This includes the main long stay car park serving Terminal 1 and Terminal 3 (4,016 spaces), and the long stay and staff car park to the north of Terminal 2 (total of approx 4,000 spaces). This will be relocated to Area B of the proposed Operational Area extensions*.
- Additional apron development for Terminal 2 will require the demolition and the replacement of the World Freight Terminal's Transit Sheds (15 ha). These must remain airside and will be accommodated in Areas A & E*.
- The development of the apron to serve Terminal 1 will require the partial redevelopment of the aircraft maintenance village (approx 9 hectares) – to be accommodated in Area A*. In addition, the North Fire Station, Business Aviation and other ancillary operational uses (including the engine test bay, balancing pond, vehicle maintenance depot, fuel farm and security gates) will also be displaced to accommodate apron and stand development and will be relocated to within the existing Operational Area or Areas A & E*.

* See Operational Area Extension Plans (page 36).

D: Cargo

- **Air cargo is a valuable element of the Airport's activity and a wide range of facilities will continue to be provided and developed. Cargo is valuable in maintaining the viability of passenger services, as a high proportion (some 60%) of the Airport's cargo throughput is carried in the holds of passenger aircraft.**

- There are two models of air freight in the UK:

The airfreight-forwarding model (e.g. Manchester Airport):

- This is the traditional model adopted by the major scheduled airlines.
- The wide-bodied aircraft used on long haul passenger routes have cargo capacity in the hold beneath the passenger cabins; this is known as bellyhold freight.
- Additionally, airlines may operate dedicated freighter aircraft on key routes where there are high volumes of cargo.

The integrated airfreight model (e.g. East Midlands Airport):

- This model, carried out by the integrators, has developed over the last 25 years to provide an express or next-day delivery service to customers (e.g. DHL, UPS, TNT).
- Integrators mainly use dedicated freighter aircraft, but also buy capacity on passenger scheduled airlines.
- Mail is carried in a similar way to integrated air freight, using either dedicated freighters or using capacity on scheduled airline

- Types of Cargo Operator

- **Transit shed operators:** provide a transit handling service for airlines and sometimes forwarders. Their function is to receive cargo from the aircraft, de-palletise and deliver to truck or vice versa via a transit shed where security and customs clearance is required prior to loading onto or off the aircraft.
- **Freight forwarders:** provide a service to shippers and importers which originally involved receiving a consignment of freight from a shipper, arranging its routing, transportation, handling and documentation to either the final receiver or to a foreign airport. The largest forwarders describe themselves as **logistics service providers**.

- **Integrators:** provide a door-to-door service, usually using their own road transport, handling, transit warehousing facilities and aircraft (e.g. DHL, UPS, TNT).
- **Wholesalers:** buy capacity from airlines and sell this on to small and medium-sized forwarders. This enables the latter to buy freight space more economically than they might otherwise by contracting directly with the airline.

- Due to the nature of transit shed and integrator activities (loading and unloading the aircraft) these activities need to have direct access to the apron. Freight forwarding and integrator services need to be located in close proximity to transit sheds within the Operational Area, or at least be connected to transit sheds by a direct, uncongested link.

The World Freight Terminal (WFT) is Manchester Airport's cargo facility, located adjacent to the western boundary of the Operational Area. The cargo facility currently comprises 24 hectares of the Operational Area (4%).

Cargo continued...

- Buck Consultants International (BCI) have carried out an assessment of the Airports cargo facility and advised on future requirements¹⁰. They have concluded that limited land availability has resulted in constraints in the growth of the present WFT.
- To accommodate future requirements, some freight handling capacity may need to be located off site. Any off site location needs to be in close proximity and with direct and uncongested access to the transit sheds.
- According to BCI in the medium term (2013), the known amount of development that is needed in the World Freight Terminal to accommodate existing occupancy plus 5 years of demand plus existing new requests (ready built need) results in a minimum requirement of approximately 857.000 sq.ft. (79,617 sq m) of floor space inclusive of the existing WFT floor space.
- **Looking ahead to 2030, BCI¹⁰ forecast that a total of 1,291,680 sq ft (120,000 sq m) of floor space is required on site to handle the forecast long-term growth in cargo. This breaks down as follows:**
 - Approximately 50.000 sq m of transit shed space - **Must be within Operational Area**
 - Approximately 70.000 sq m. of freight forwarding space – **Must be within the Operational Area**
 - Approximately 50.000 sq m of warehousing / distribution space – not specifically tied to the airport but in close proximity – **Can be off site in close proximity**
 - Approximately 50.000 sq m of mixed-use logistics space – **Can be off site in close proximity**

By 2030, it is anticipated cargo will require an additional minimum of 8 hectares of land within the extended Operational Area to accommodate the floor space described above (32 hectares in 2030, some 4% of the total site area).

¹⁰ Summary Paper to Manchester City Council, Buck Consultants International. Nov 2008

¹¹ Buck calculated these figures based on Masterplan forecasts combined with future productivity levels (tonnes/ m² floorspace) and have also reviewed growth projections and assessed recognised industry sources.

E: Aircraft Maintenance

The aircraft maintenance village covers an area of some 13 hectares (2%) and is located on the West Side of the Airport. Much of this will be displaced as a result of apron development.

- The hangar facilities are generally modern, most being constructed during the period 1989 – 1996. There are four wide-bodied maintenance bays in the three major hangars. Compared to other European airports with similar throughput to Manchester, the scale of the existing operation is significantly smaller. This is influenced by the fact that there is no significant national airline based at the Airport and as such there is at present some spare hangar capacity at the Airport. Aircraft maintenance hangars can take up significant areas of land and require direct access to the apron. In the short term the principal focus is to maximise the use of these existing facilities in advance of future capacity development.

A more efficient layout could be achieved through redevelopment of the existing Maintenance Village. In the longer term, an additional 2 hectares of land will be required to accommodate maintenance uses (15 hectares of the 2030 Operational Area, some 2% of the total site area).

F: Ancillary Operational Uses

Ancillary Operational Uses currently occupy 11 hectares of the Operational Area (2%).

- There are a number of other uses and facilities that are required for the Airport's operation and need to be located within the Operational Area. These include uses such as flight catering and operational accommodation for activities such as air traffic control, fire and rescue, police, vehicle maintenance, parking and storage for apron and airfield equipment (e.g. the snow fleet), aircraft cleaning and washing facilities as well as the fuel farm.
- As passenger numbers increase additional land will be required to accommodate ancillary operational uses. For example, in order to sustain a movement rate of 76 aircraft an hour, there will be a need for a replacement and upgrade of the navigation and telecommunication equipment. Land around the navigation aids needs to be protected to ensure that their operation is not affected. Many of the existing Operational Uses will be displaced to accommodate apron. The North Fire Station, Business Aviation and other ancillary operational uses (including the engine test bay, balancing pond, vehicle maintenance depot, fuel farm and security gates) will also be displaced to accommodate apron and stand development and will be to be relocated either within the existing Operational Area or Areas A & E which provide the most suitable access to the apron and taxiways.

At 2030, an additional 7 hectares of land is required to accommodate Ancillary Operational uses (18 hectares of the 2030 Operational Area some 2% of the total site area).

G: Offices, Hotels and Other Uses

- These are uses that are part of the core operation of the Airport and are part of a portfolio of activities that are expected at a major international airport.

Currently, offices, hotels and other uses comprise 20 hectares of the Operational Area (3%).

This 20 hectares accommodates all of the following uses:

- Six hotels (catering to a variety of standards as follows):
 - The Crowne Plaza (294 beds), The Hilton (228 beds), Bewleys (300 beds), Radisson SAS (approved extension to total 510 beds), Travelodge (202 beds), Premier Inn (363 beds) = **17.6 Hectares**
- Office accommodation is provided within the three passenger terminal buildings and within four buildings in the operational area:
 - Terminal Buildings 11,000 sq m (approx 118,500 sq ft) **0 hectares**
 - Tower Block 5,200 sq m (approx 56,000 sq ft) **0 hectares**
 - Olympic House 7,780 sq m (approx 83,750 sq ft) = **0.3 hectares**
 - Voyager 6,800 sq m (approx 73,200 sq ft) = **0.7 hectares**
 - 4M (The Station) 8,000 sq m (approx 86,100t) **0 hectares**
- 2 petrol filling stations = **1.4 hectares**

Forecast

- New operational office accommodation will generally be provided within the expanded terminal facilities. Where office space is ancillary to a main use such as aircraft maintenance or cargo, then space will continue to be provided as part of that use. A range of office accommodation will continue to be provided in the cargo area and in the high-density zone adjacent to the Station and transport interchange.
- On site hotels, to specifically meet aviation demands, will be a key requirement as the Airport develops to serve a range of users including business and leisure passengers, domestic and foreign based airline crews as well as those passengers with early/late flights with growth in the long-haul market bringing in passengers from a wider area.

A minimum of 10 hectares will be required to accommodate offices, hotels and other uses (30 hectares of the 2030 Operational Area, some 4% of the total site area)¹².

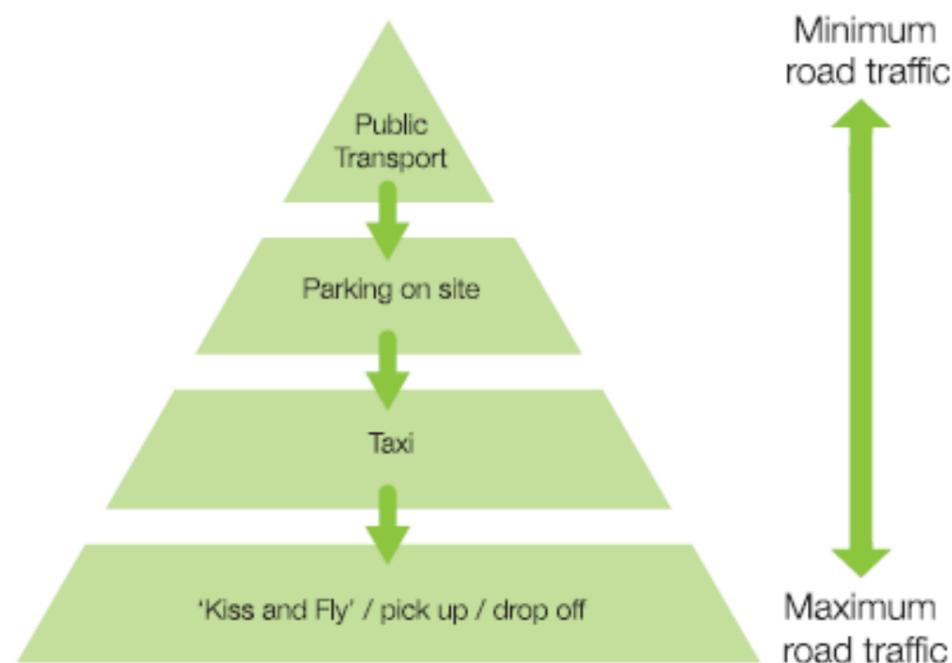
¹² See Drivers Jonas LLP Note (Appendix B).

H: Surface Access and Car Parking

- Effective management of surface access is required to deliver sustainable growth. Improved accessibility including public transport is an important part of the plan for future growth. The approach is set out within the Ground Transport Plan (2007). A comprehensive and integrated approach to surface access aims to:
 - Set a clear framework to guide the development and management of surface access in line with the Air Transport White Paper.
 - Contribute significantly to our climate change strategy.
 - Identify future surface access capacity and development proposals.
 - Set challenging targets and aspirations for surface access.
 - Contribute to, and influence, regional and sub regional policy and the Local Development Frameworks.
- The car is a significant mode of access to the Airport: **61% of passengers are ‘picked up’ and ‘dropped off’ by private car or taxis.** This is the largest component of road traffic and the biggest contributor to congestion. By contrast, **only 10% of passengers (and 15% of staff) use public transport and only 14% of passengers park on site.** ‘Pick up / drop off’ generates the most car journeys (four car trips for each return air trip); this is double that of passengers who park. As ‘pick up / drop off’ generates the most vehicular traffic, it is at the bottom of the Airport’s hierarchy of preferred transport choices.



Manchester Airports Hierarchy of Preferred Transport Choices



The Airport has a long-term ambition of 40% of passengers and 50% of staff using public transport; a 400% increase on today for passengers and 300% increase for staff.

Surface Access


- Achieving these targets is dependent on a major increase in rail capacity in Manchester (Manchester Hub), the full extension of Metrolink, expanded and better-integrated transport services and a sustained programme of investment in public transport. Without such interventions, public transport share is expected to be around 25%. Once there is sufficient capacity and choice, appropriate demand management measures can be introduced – using any income to help drive further change and generate revenue to accommodate growth.
- Further explanation of the Airport’s Surface Access Strategy can be found within the Ground Transport Plan (2007).

- Commitment to managing the growth in road traffic means that the Airport can:
 - Further reduce the number of car journeys per air trip by offering alternatives to ‘kiss and fly’ and private hire;
 - Seek and secure additional investment in the alternatives to the car as a regional priority, and persuade other providers and operators to support the strategy; and
 - Establish demand management measures and link these to measures adopted in Greater Manchester and the North West.

Existing Car Parking Provision

- **Current short stay provision is:**

- Terminal 1 multi storey and arrivals 1,924 spaces;
- Terminal 2 multi storey spaces and arrivals 1,504 spaces,
- Terminal 3 multi storey and surface 1,947 spaces.

- **Current Long Stay – On Airport**

- Terminal 1/Terminal 3 Long Stay 4,016 spaces (7.06 ha).
- Terminal 2 Long Stay 2,204 spaces (4.9 ha).
- Shuttle Park 1,921 spaces (5.3 ha)

- **Current Long Stay – Off Airport**

- Approximately 60% of long stay parking is provided on 28 sites outside the Operational Area, run by independent operators. In 2009 an estimated 19,500 spaces were provided ‘off-airport’.

- **Staff Parking**

- 5,546 surface parking spaces in two main areas (Terminal 2 and staff west) allocated for staff located toward the western perimeter of the Airport.

Surface access and car parking equates to approximately 74 ha of the existing Operational Area (12%).

Surface Access and Car Parking continued...

Forecast Numbers

- **Car parking within the Operational Area is closely linked to broader ground transport objectives and is a key tool to promote alternative methods of transport to the site.** However, the basic demand management tools of increasing the cost of parking and restricting the supply of spaces do not necessarily result in the behavioural outcomes consistent with the Airport’s Ground Transport strategy. For example, faced with increased parking prices, passengers will choose private hire or ‘pick-up and drop-off’ activity, which in turn leads to an overall increase in vehicle trips and therefore road traffic and emissions. As such, the Airport needs to carefully balance the supply of, and demand for parking.
- Price and convenience are key factors in the choices that passengers make. To persuade passengers to move away from pick up / drop off / taxi use will require an appropriate supply of on-site medium and long-stay car parking.
 - Too much cheap parking could discourage public transport use, while scarce and expensive parking will encourage ‘kiss and fly’ and taxi use. And increase road traffic.
 - An overall increase in car parking capacity will be necessary to ensure a sufficient level of parking and a range of facilities to meet passenger needs.
- As the pressure for core operational facilities increase, there will be a need to displace more staff parking to the edge of the site. This helps to make public transport more attractive and convenient in comparison to the private car.
- To support an airport of 40 million passengers the number of long-stay spaces (on and off-airport) will fall into a range between **39,500 spaces to 53,800 spaces**¹³.

Scenario 1 (low)	
Long Term Forecast (on and off airport)	39,500
Off Airport Supply (operating)	-19,500
Spaces required in the Operational Area	= 20,000
Existing Spaces	- 8,141
Displaced Spaces	+ 6,220
Spaces to Find	= 18,079
Assuming 385 spaces per ha	46 ha required

Scenario 2 (high)	
Long Term Forecast (on and off airport)	53,800
Off Airport Supply (operating)	-19,500
Spaces required in the Operational Area	= 34,300
Existing Spaces	-8,141
Displaced Spaces	+ 6,220
Spaces to Find	= 32,379
Assuming 385 spaces per ha	84 ha required

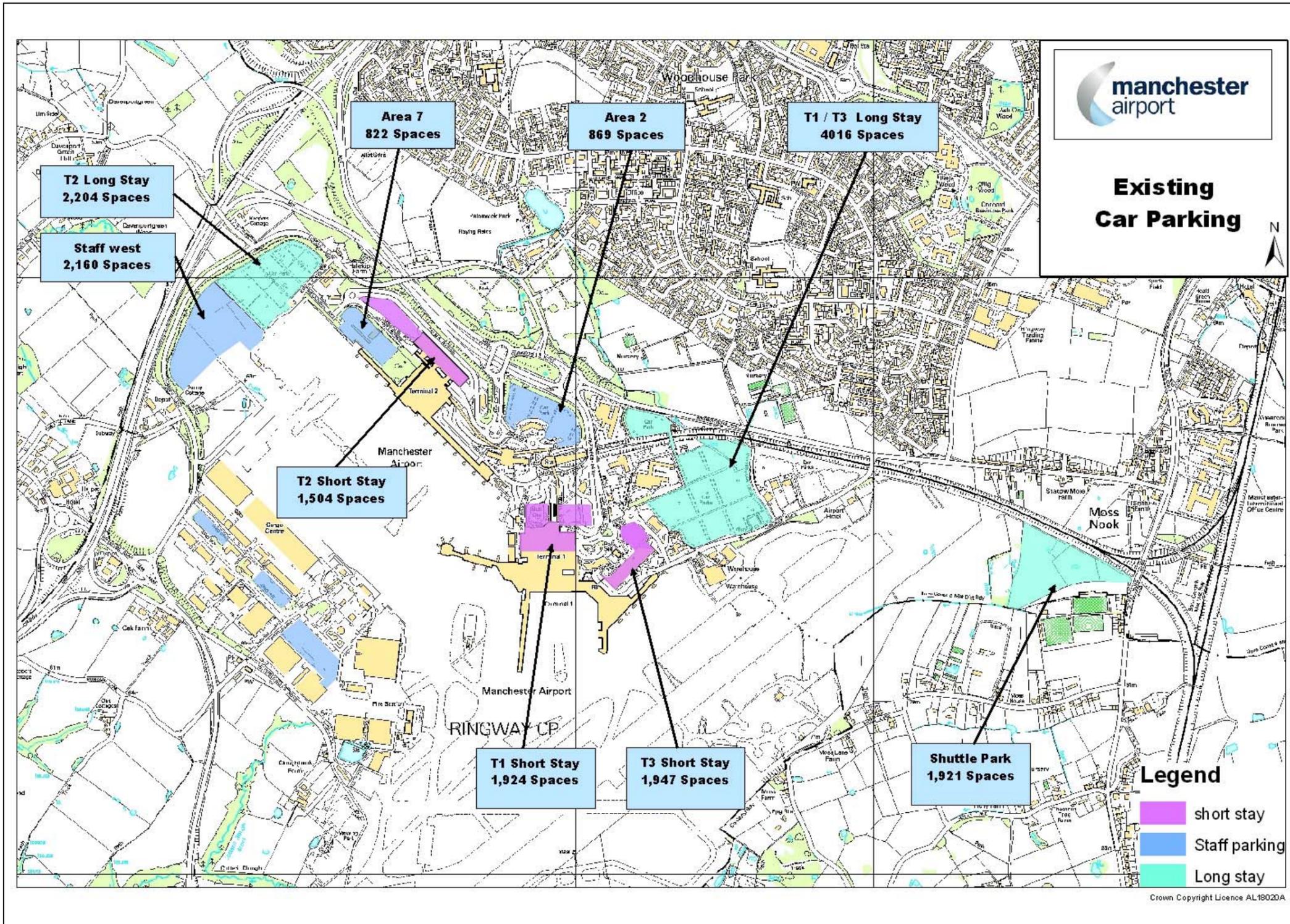
Staff	
On Site Employment Number (2030)	27,950
Spaces Required (Four Staff Parking Permits Per Space)	6,988
Existing Spaces	+ 5,546
Shortfall	1,442
Displaced Spaces	- 2,980
Spaces to Find	= 4,422
Assuming 385 spaces per ha	11 ha required

Including on site public transport facilities, an additional 25 – 65 hectares of land will be required to accommodate surface access and car parking (99-139 hectares of the 2030 Operational Area).

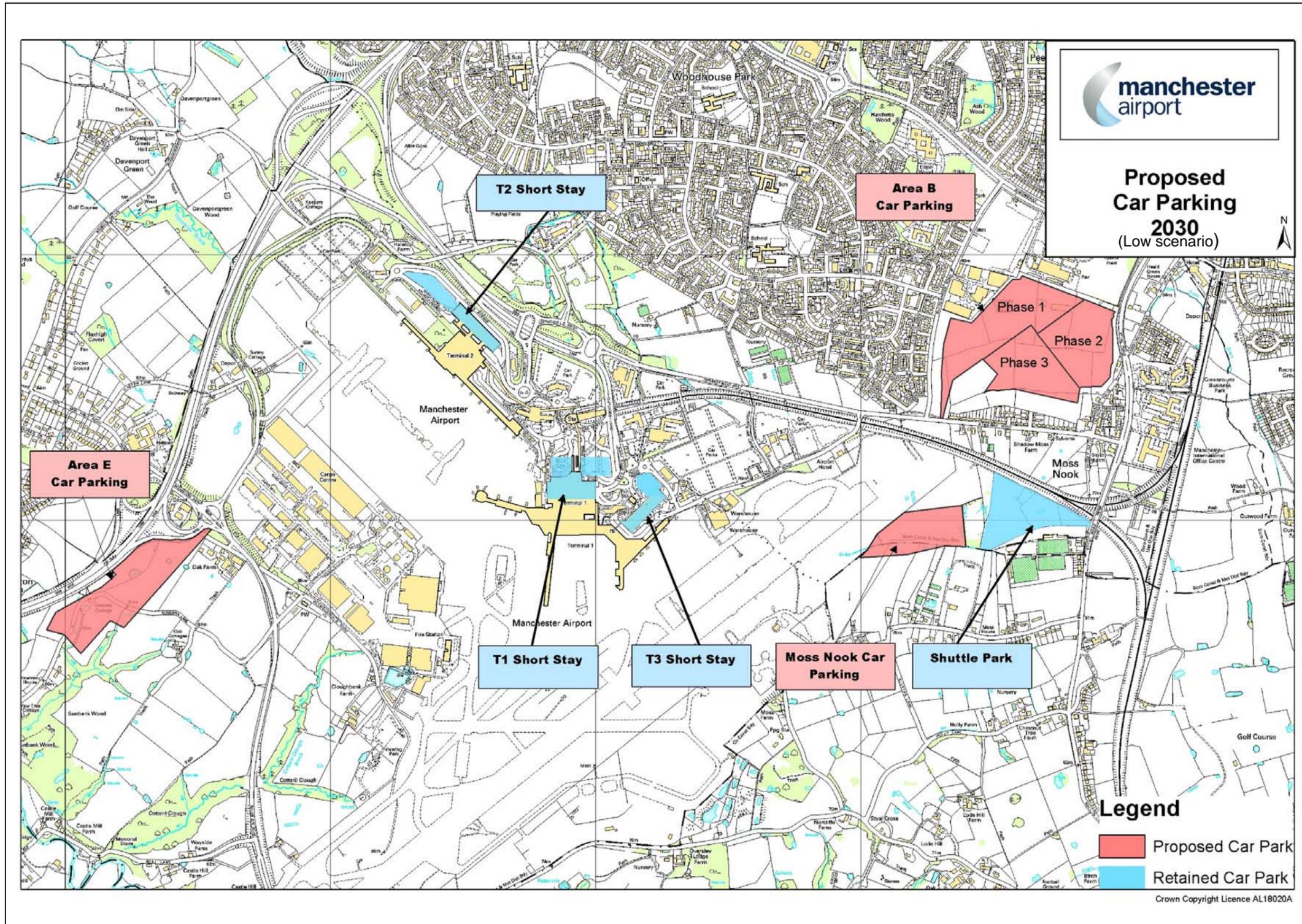
¹³ See Technical Note on Car Park and Surface Access Modelling – AECOM (Appendix C)

Surface Access and Car Parking continued...
Existing Car Parking Sites

Surface Access

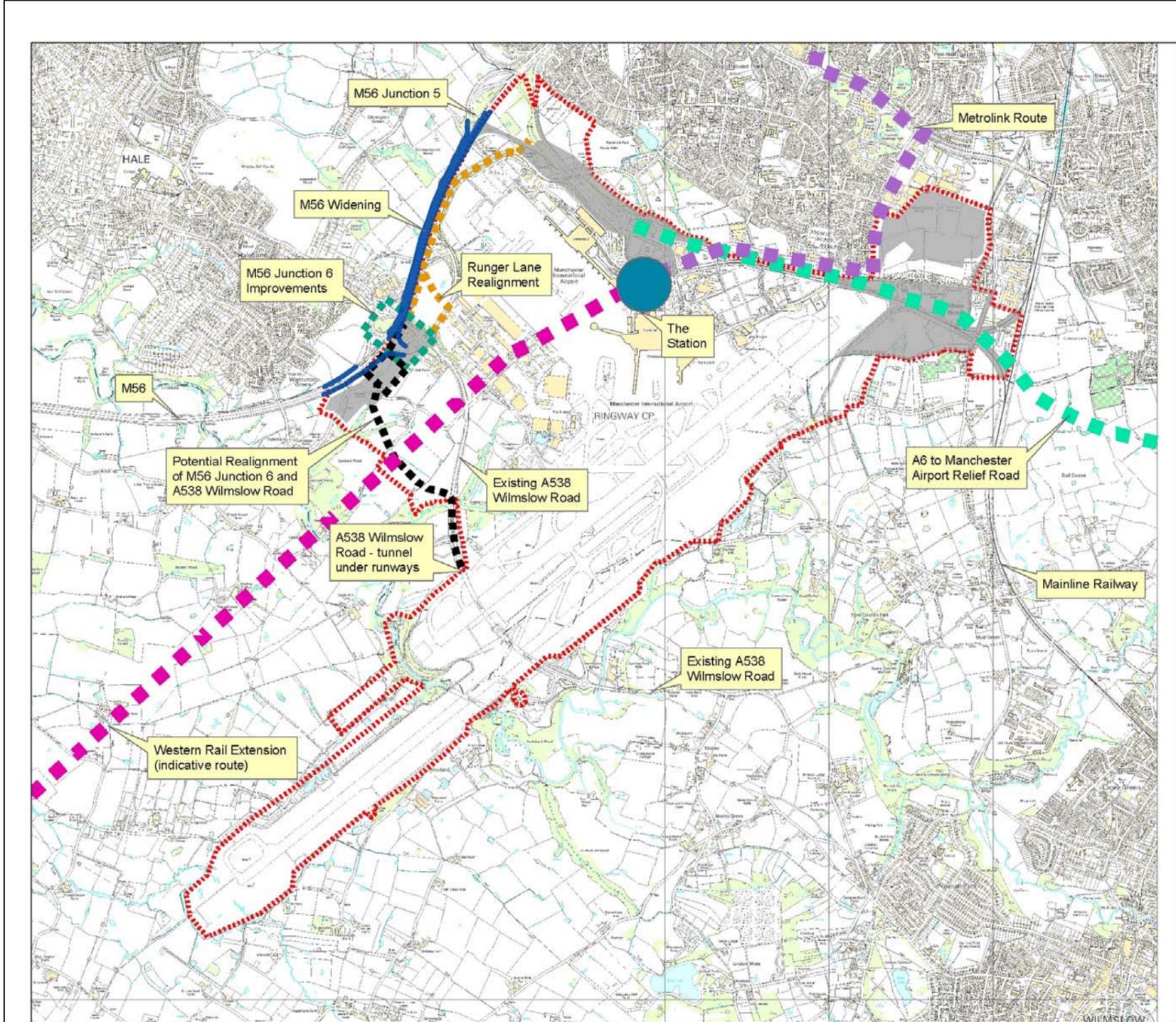


Surface Access and Car Parking continued... Car Parking at 2030



Surface Access and Car Parking continued...

Surface Access at 2030



Surface Access 2030

Legend

- M56 Widening
- Station Extensions & Additional Capacity
- Metrolink Route
- A6 to Manchester Airport Relief Road
- Western Rail Extension
- Potential Realigned Wilmslow Road
- Junction 6 Improvements
- Surface Access and Car Parking
- Realigned Runger Lane
- Operational Area 2030

Please note that the proposed site areas indicated are for illustrative purposes only. Detailed plans to be developed.

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3. Overall Scale of Uses

The Airport will require a minimum of 175 ha of land to accommodate an expanded Operational Area in 2030.

- The table below summarises the forecast scale of uses in 2030. An additional gross area between the range of 175 – 237 hectares is required to accommodate Operational Uses. Using the principles of efficiency and sequential tests, as detailed within the Land Use Plan, the Airport will seek to achieve the lower figure.

Uses	Existing Area (Gross Ha)	Existing Use Proportion (%)	Proposed Area 2030 (Gross Ha)	Use Proportion 2030 (%)	Change From Existing to 2030		Location In 2030							
					Gross Ha	% Use Proportion	Existing Operational Area	Area A	Area B	Area C	Area D	Area E	Area F	
Central Terminal Area	33	5%	41	5%	+ 8	None	41ha	-	-	-	-	-	-	-
Airfield	312	50%	334	42%	+ 22	- 8 %	312 ha	4ha	-	-	-	-	-	18ha
Apron	85	14%	185	23%	+ 100	+ 11%	185ha	-	-	-	-	-	-	-
Cargo (and/or Freight)	24	4%	32-44	4%	+ 8/+20	None	-	4ha	-	3ha	-	25ha	-	-
Aircraft Maintenance	13	2%	15	2%	+ 2	None	-	15ha	-	-	-	-	-	-
Ancillary Operational	11	2%	18	2%	+ 7	None	8ha	4ha	-	-	-	6ha	-	-
Offices, Hotels and Other Uses	20	3%	30-40	4%	+ 10/+20	+ 1%	14ha	-	-	12ha	4ha	-	-	-
Surface Access and Car Parking	74	12%	99-139 ¹⁴	12%	+ 25/+65	None	52ha	-	31ha	-	4ha	12ha	-	-
Undeveloped	40	6%	0	0%	- 40	- 10%	0ha	N/a	N/a	N/a	N/a	N/a	N/a	N/a
Landscape Habitat Management Area & Landscape Mitigation	13 ¹⁵	2%	46	6%	+ 33	+ 4%	13ha	12ha	2ha	2ha	1ha	16ha	-	-
Total Operational Area	625	100%	800 - 862	100%	+ 175/+ 237	-----	625ha	39ha	33ha	17ha	9ha	59ha	18ha	

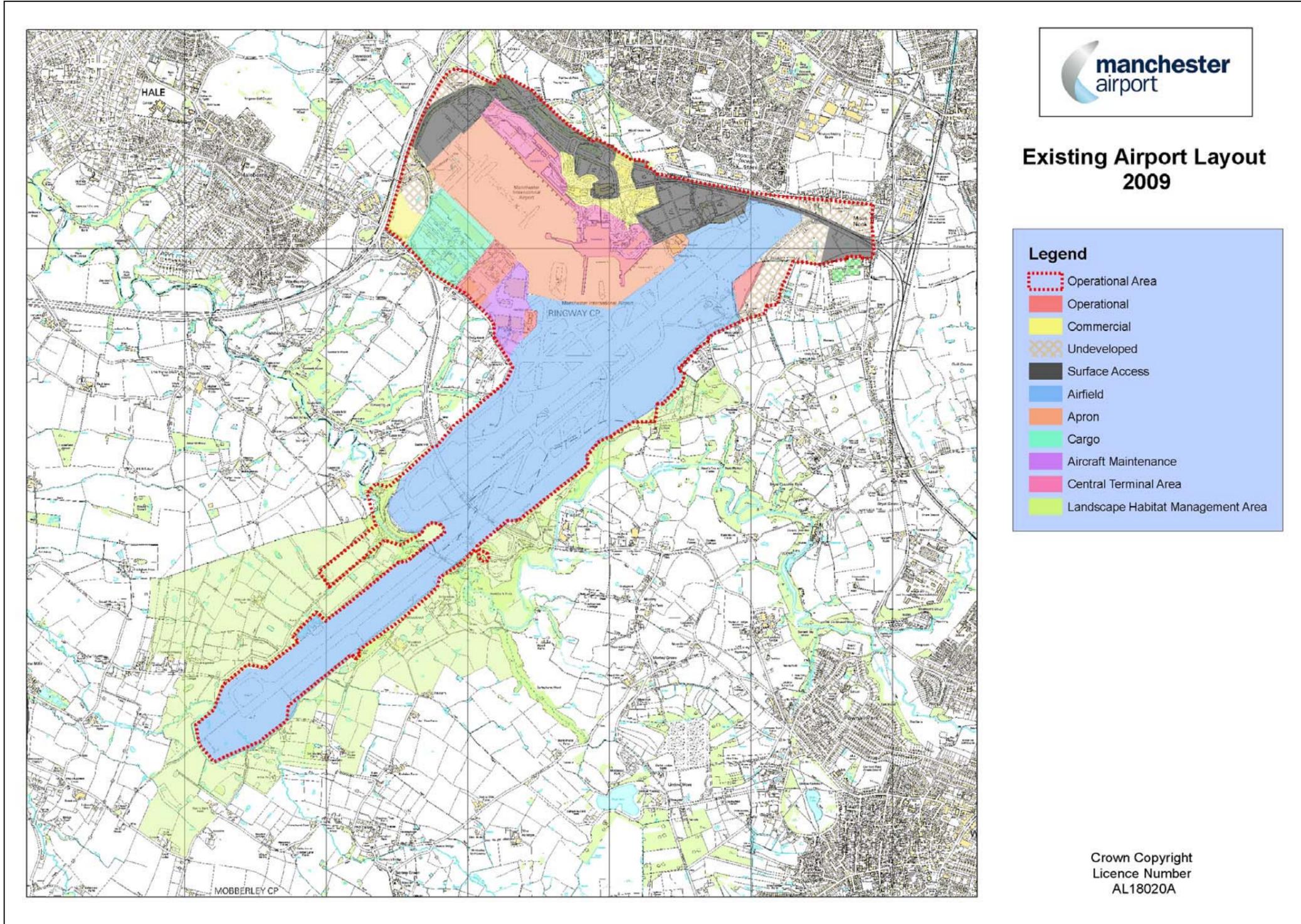
	Capacity (MPPA)	Operational Land (Ha)	Efficiency (Passengers Per Hectare)
Existing	25	625	40,000
2030	50	800	62,500

¹⁴ The Airport plan to deliver the lower scenario.

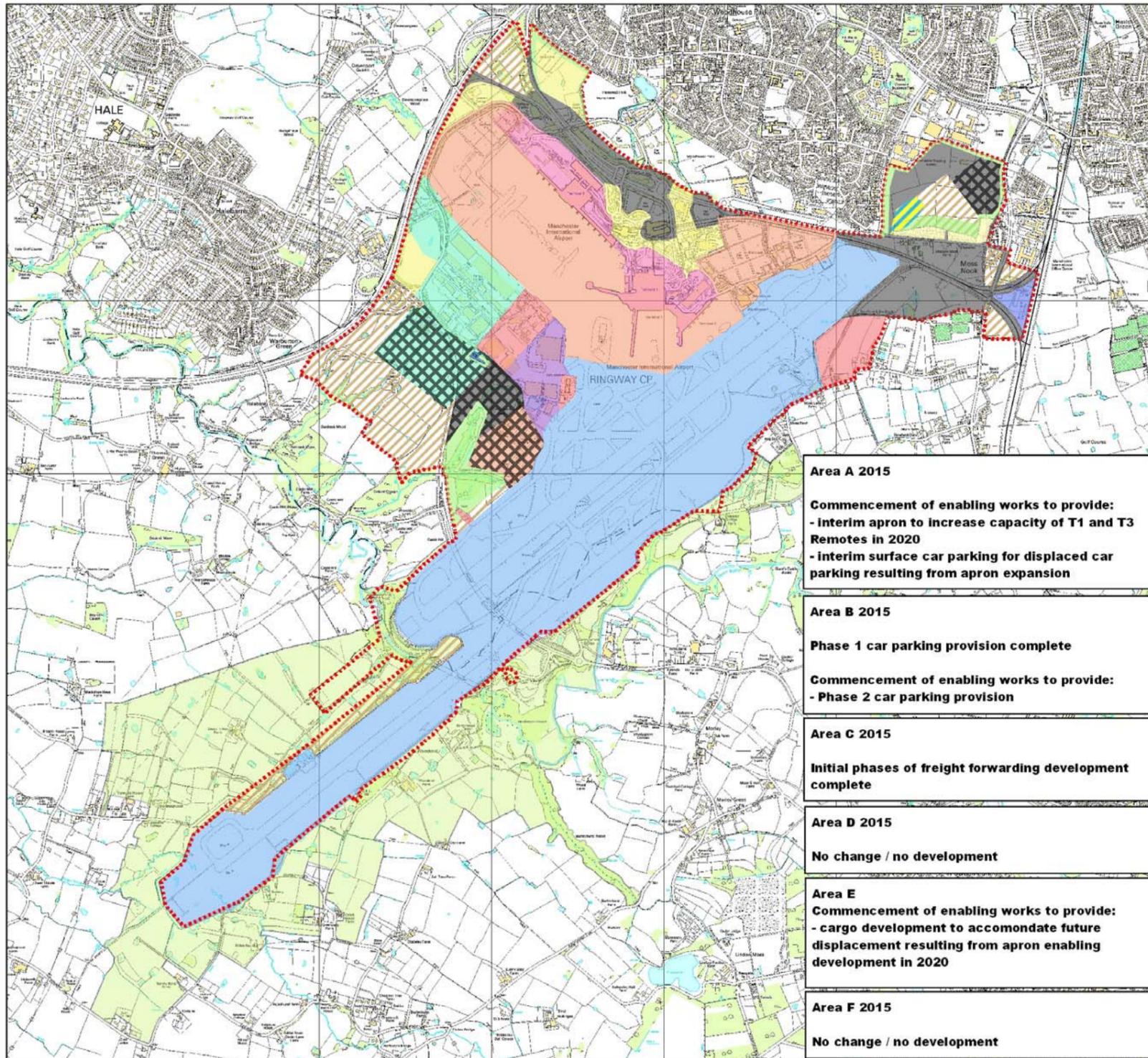
¹⁵ The majority of the Landscape and Habitat Management Plan lies outside the Operational Area and covers some 300 hectares. This figure relates to the section of LHMP within the Operational Area located at the western tip of Runway 23R-05L.

4. Airport Indicative Uses - Existing to 2030

Existing Airport Land Use



2015 Airport Land Use



Overall Airport Layout 2015

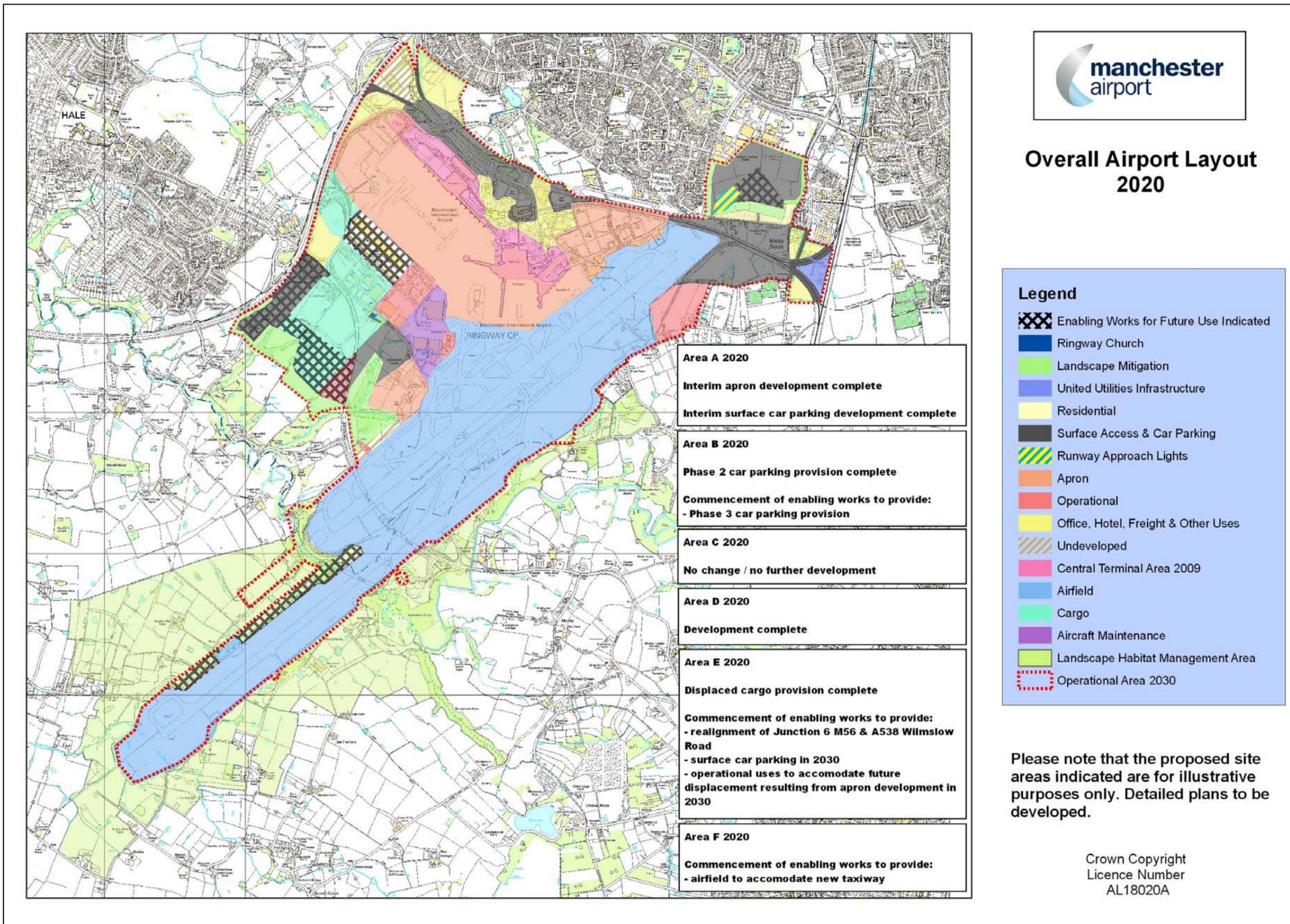
Legend

- Enabling Work for Future Use Indicated
- Ringway Church
- Landscape Mitigation
- Residential
- Surface Access & Car Parking
- Runway Approach Lights
- United Utilities Infrastructure
- Apron
- Operational
- Office, Hotel, Freight & Other Uses
- Undeveloped
- Central Terminal Area
- Airfield
- Cargo
- Aircraft Maintenance
- Landscape Habitat Management Area
- Operational Area 2030

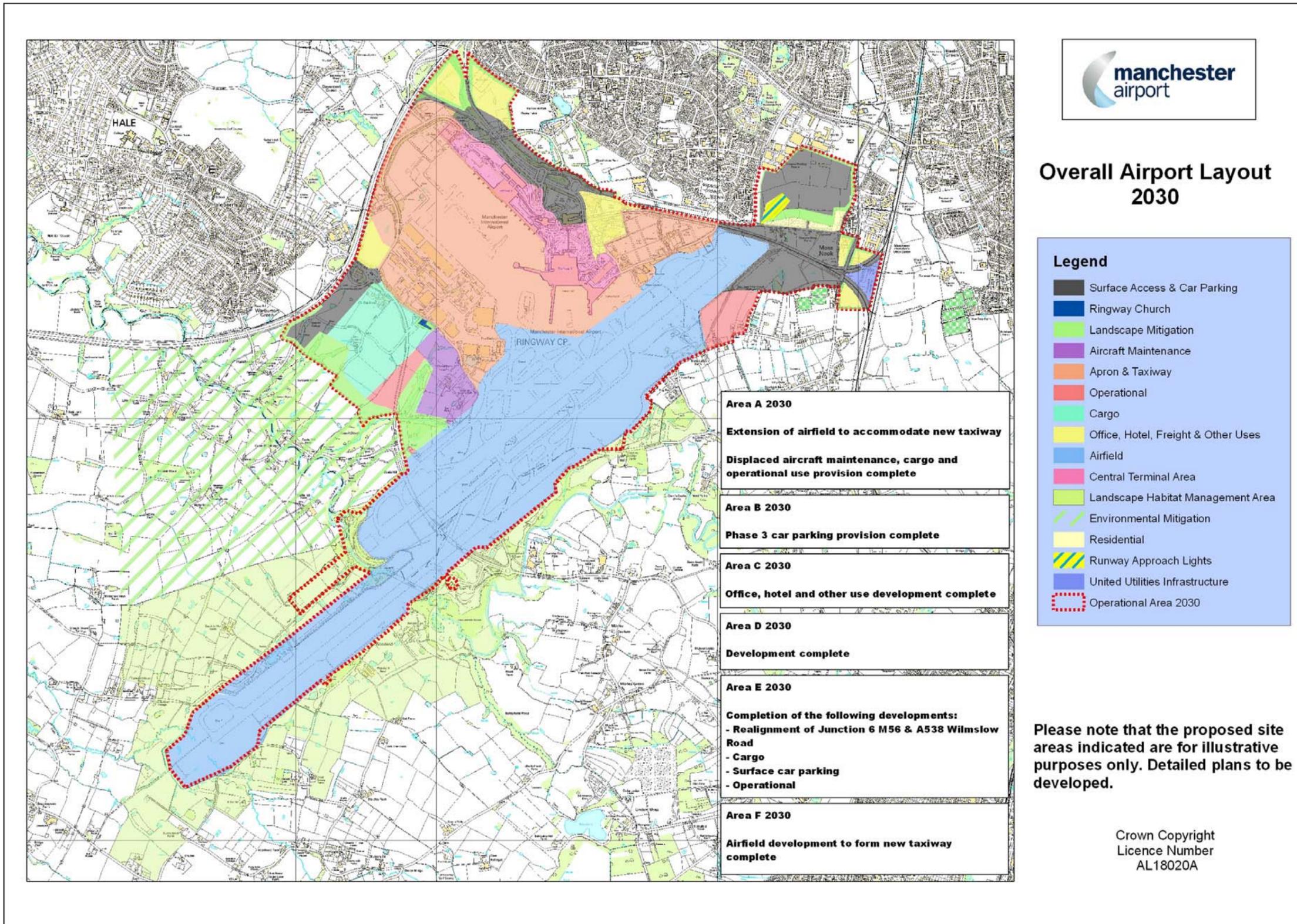
Please note that the proposed site areas indicated are for illustrative purposes only. Detailed plans to be developed.

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2020 Airport Land Use



2030 Airport Land Use



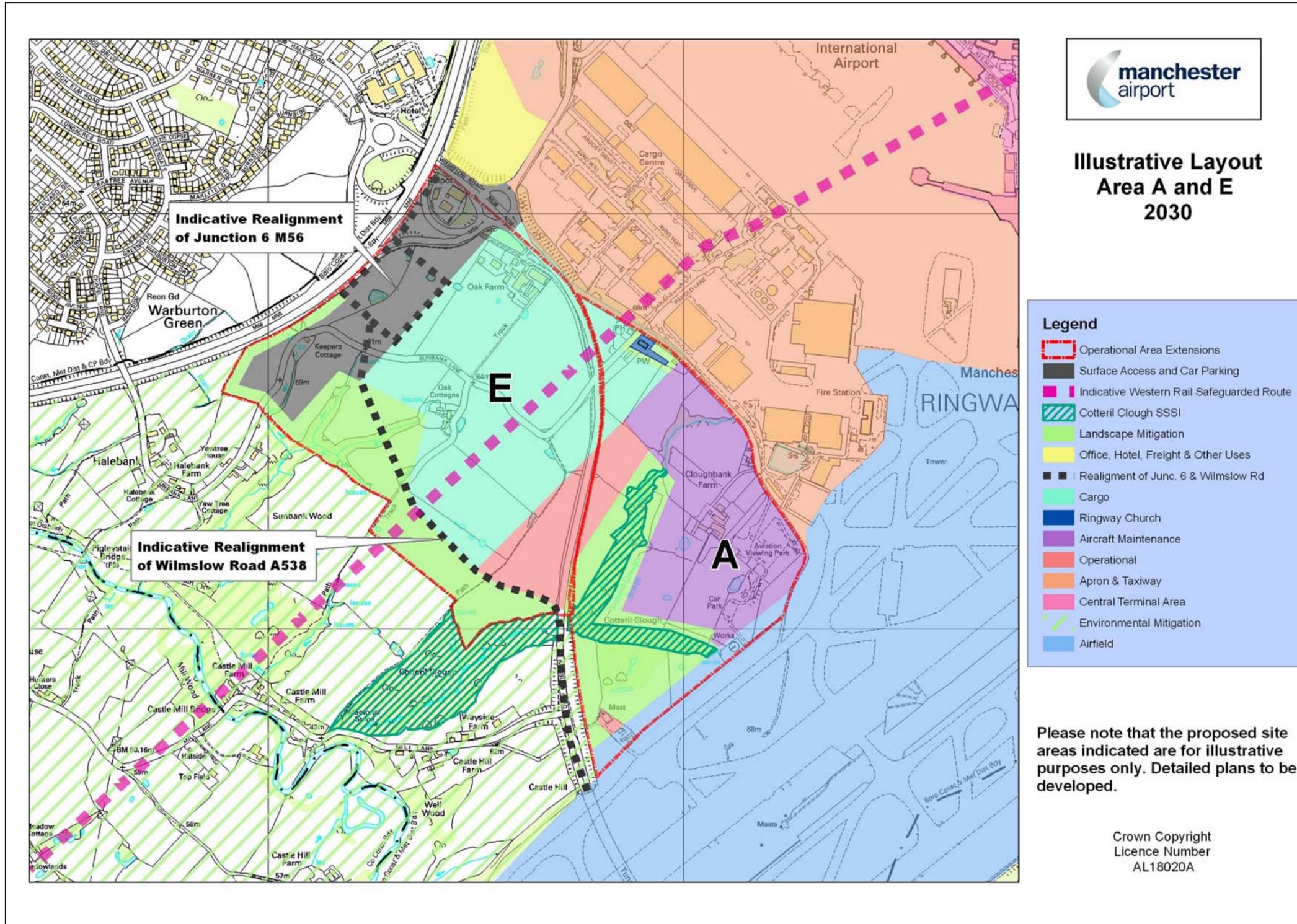
- The Operational Area to support a two runway, 50 million passenger per year, Airport has been defined following a detailed appraisal of the environmental effects, physical constraints, land demands and operational needs. It also brings together proposed extensions that have been previously identified in Development Strategy documents.

- **This is an Operational Area that provides for the Airport's long-term land requirements, provides a safeguarded allocation of land, and enables a long-term approach to airport development and environmental mitigation.**

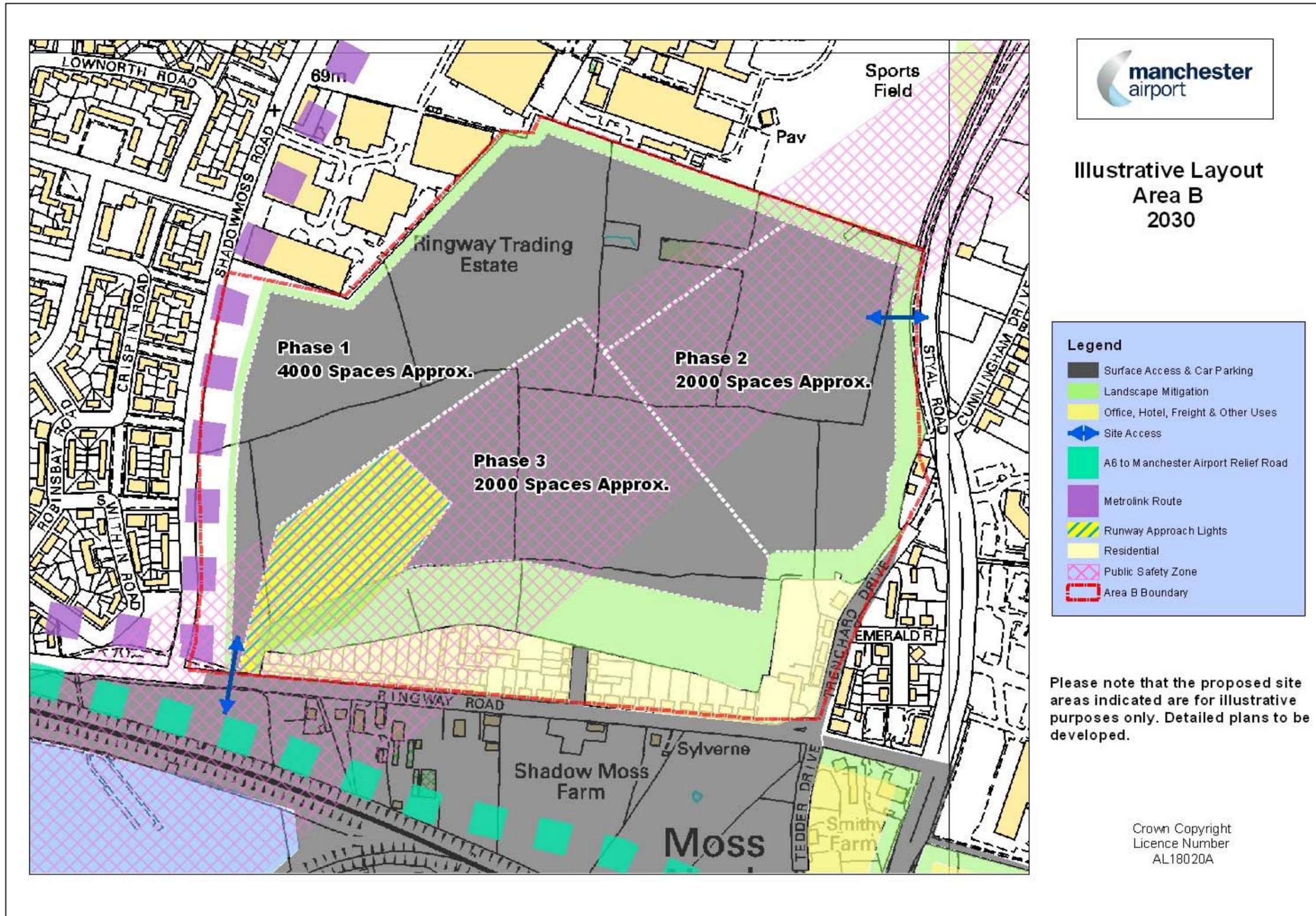
- The proposed extensions are relatively modest and would increase the Operational Area's existing 625 hectares by an additional 175 hectares and enable the Airport's development as envisaged in the Air Transport White Paper.

5. Operational Area Extensions

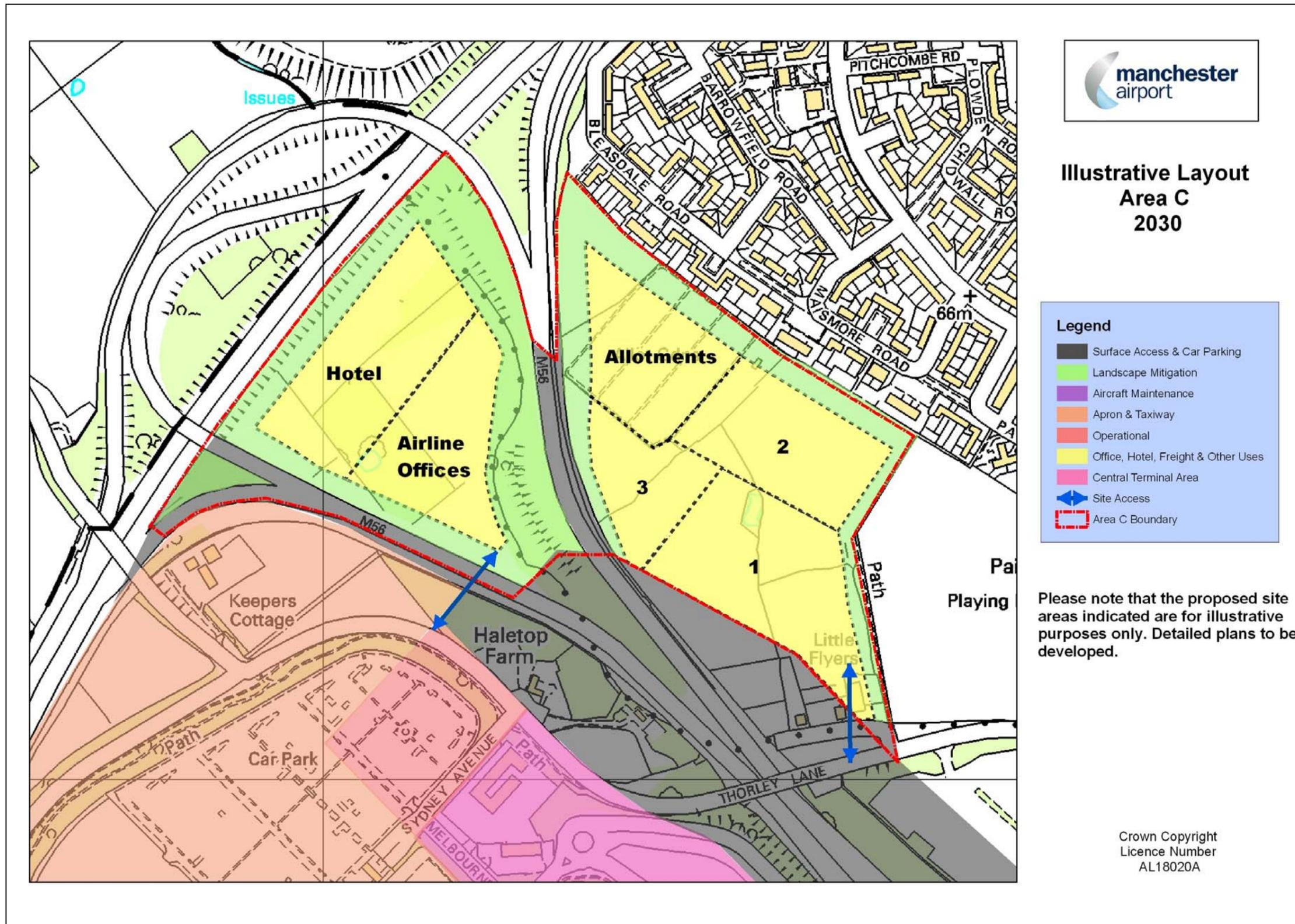
Areas A & E 2030



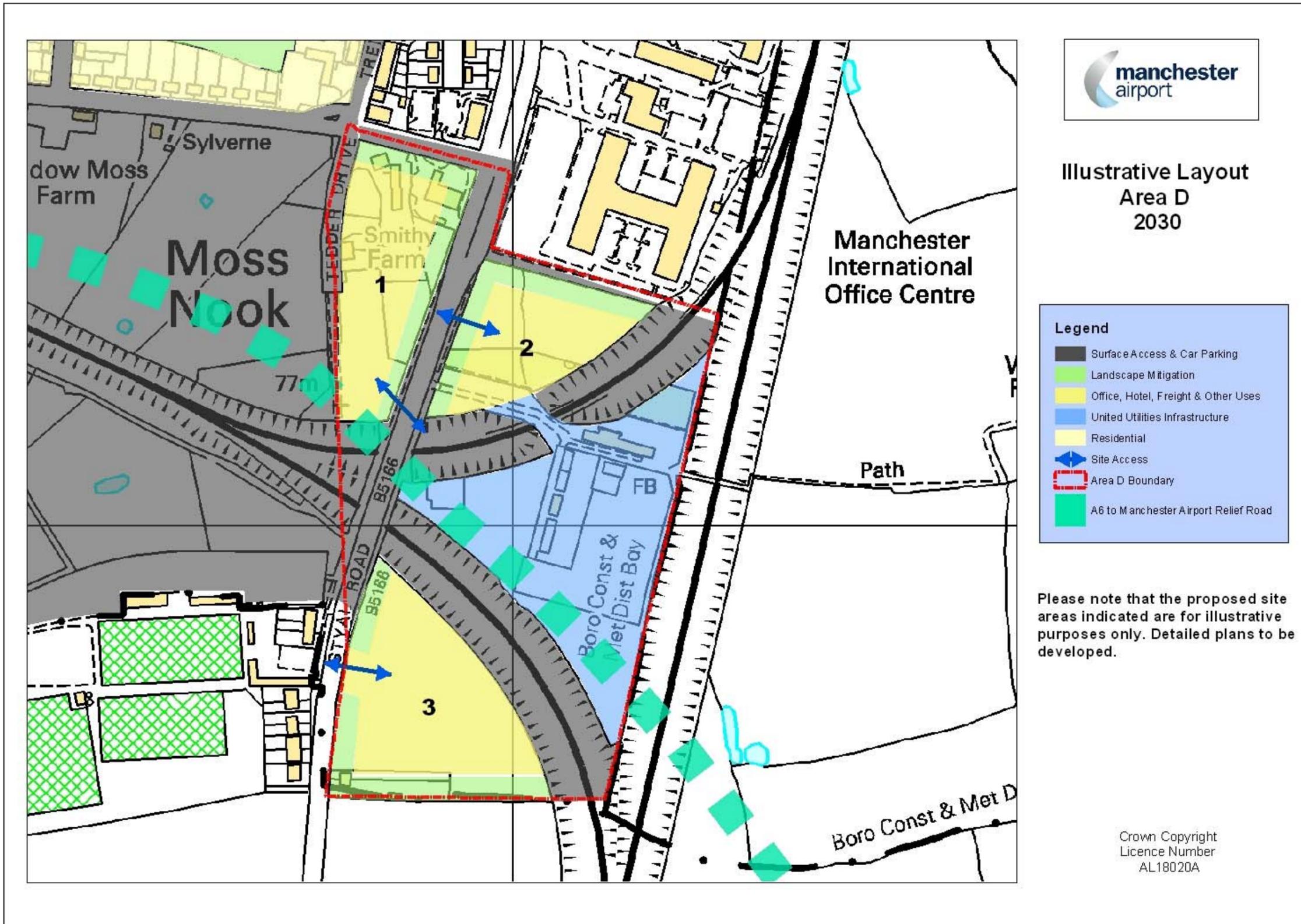
Area B 2030



Area C 2030



Area D 2030



6. Environmental Mitigation

- The Airport has considerable experience in the protection, mitigation and management of environmentally and ecologically sensitive sites within and outside the Operational Area. As part of the development of the Second Runway, the environmental mitigation was delivered through the development of a Landscape and Habitat Management Plan (LHMP). This covers an area of 350 ha, much of it designated as Site of Biological Interest.
- **To compensate for, and to mitigate any effects of increasing the Operational Area it is proposed to extend the LHMP working with the various landowners to enhance the ecological diversity within the area. This would be predominately located within parts of Areas A and E and land in the Bollin Valley outside the proposed Operational Area, enabling it to link up to the Second Runway LHMP area.**
- The area identified for the extension lies either side of the Bollin Valley between the M56 and Castle Hill Farm. The mitigation will be focused on increasing the overall biodiversity of the area, in particular enhancing the habitats of a number of Protected Species including amphibians (Great Crested Newts), badgers and bats.
- The mitigation works will be undertaken in advance of development taking place. This will include:
 - the creation and restoration of ponds. For every pond that is affected by development of land for Airport uses, the Airport Company will either create two new, or restore two existing, ponds as suitable habitats for amphibians and continue to manage them as such.
 - habitat creation works to cater for different species of bats. New bat barns and bat boxes will be provided where appropriate. These will be monitored and maintained to ensure that they remain suitable for habitation.
 - ensuring that the badger population remains unaffected by Airport operations.
 - strengthening and improving the existing landscape features and creation of new features such as woodland, grassland or hedgerows. Within the current LHMP Manchester Airport have created over 25 hectares of wildflower grassland and 50 hectares of woodland and scrub. These habitat creation works will be carried out in advance of development taking place.
 - geological and geomorphological features are also important considerations. Manchester Airport have exposed one Regionally Important Geological and Geomorphological Site in the Bollin Valley and allow educational access. Further detailed assessments will be undertaken to identify if similar opportunities exist.



Examples of MA 's track record for habitat creation work in the LHMP (from far left): new woodland in early stages; bat barns to cater for different species and the creation and restoration of ponds.

Cotteril Clough Site of Special Scientific Interest

- Area A includes part of the Cotteril Clough Site of Special Scientific Interest (SSSI) and consists of two arms of ancient clough woodland with a flowing watercourse. This constitutes a significant landscape feature and wildlife corridor. This woodland includes good populations of ground flora species and a bat and badger habitat. **As part of the approach to the development of Area A, the area of the SSSI be protected and managed, along with additional buffer woodland planting along the SSSI boundaries.**
- The management of the existing woodland would follow the same principles established as part of the LHMP. This encourages semi-natural ancient woodlands to develop naturally. This means that a non-intervention policy would be adopted in the woodlands. This seeks to encourage the natural regeneration of native species. Where trees need to be replaced, this would be done using locally native species. Other management would be directed to protecting and enhancing habitats for breeding birds, bats and badgers.
- To provide a buffer between airport development and the SSSI new woodland and scrub planting would be introduced. Some of this planting has already commenced. The aim is to develop high quality habitat, to provide protection for the SSSI, a feeding area for badgers, bats and amphibians; and maintain a wooded appearance that screens airport developments and becomes an attractive feature in the local landscape.

Approach to Environmental Design and Construction Management

Environmental Design

- The Airport Company has a detailed Environment Plan and a wide range of environmental monitoring systems. The general environmental principles are: -
 - Compliance with legislation, planning conditions and Section 106 Agreements are the minimum standards
 - The environmental approach is to deliver continual improvement'
 - Polluter Pays' charging regimes are implemented where possible
 - Wherever possible, the approach is to seek absolute reductions in environmental impacts as well as relative improvements
 - Partnership working with other on-site companies, contractors and statutory agencies to reduce environmental impact is an important part of the environmental management programme
 - Where necessary and appropriate, environmental training programmes are implemented.
- **The principal environmental impacts associated with major airport development in Areas A and E are:**
 - **Land Use** – Cotteril Clough is a SSSI ancient woodland. The approach to development is to avoid any direct impact and minimise as far as possible any secondary affects. Given the overall interest and importance of the SSSI the ecological approach is to increase the quality and the bio-diversity in the Clough. Future land uses will avoid the Clough and include clear boundaries for protection and enhancement works.

- **Landscape** – The objective is to retain the landscape feature of the Clough woodland and substantial buffer planting will be put in place around the site. This planting will be substantial in depth and will be of native species and its management will follow the principles established in the LHMP.
 - **Nature Conservation and Ecology** – Annual surveys will be undertaken as part of the overall LHMP. The condition of the SSSI is rated as ‘unfavourable’ by Natural England and improvement measures will form part of the management plan. It is known that a number of protected species are present in the area, including great crested newts, badgers and bats. A detailed mitigation plan that includes translocation, habitat improvement and site protection will be developed. This will follow the principles established in the LHMP and will be incorporated in the long-term management of the area.
 - **Archaeology and Heritage** – There are 3 Listed Buildings, along with the Church of Ringway St Mary within the existing and proposed Operational Area. Detailed surveys will be carried out to assess the historic importance of the Listed Buildings. Ringway Church will be retained and substantial screening and protection measures will be put in place.
 - **Water Quality** – Rainwater runoff is discharged into the River Bollin and several streams around the site including Cotteril Clough Brook. The development of new areas into apron, car parks or buildings will increase the area of hard standing and change the site’s drainage characteristics and may increase the discharge into Cotteril Clough. Automatic monitoring will continue in the Clough and all contaminated run-off will be stored and discharged for off-site treatment.
- **Detailed baseline field surveys of each of the proposed Operational Area Extensions have been undertaken by Axis PED¹⁶. These highlight areas where ecological constraints need to be addressed in future development proposals. Axis have also assessed the development scenarios for each of the extensions and, where required, have set out appropriate mitigation measures¹⁷. On going monitoring will also inform the scale and nature of ecological mitigation to be undertaken. A summary of the environmental constraints and mitigation for each Operational Area extensions is provided in Appendix D.**

Construction Management

- There is a potential environmental impact from construction activity. This can arise from enabling works, the direct construction activity, and the effects of construction works. The Airport Company has considerable experience of large-scale construction works (Terminal 2 and the second runway) in ecologically sensitive areas.
- Statutory requirements, Codes of Practice and compliance with the Airport Company’s environmental standards all form part of the instructions to all contractors. Construction Impact and Management Statements will be prepared and will cover measures to avoid, protect and manage impacts on Cotteril Cough and other sensitive areas. The statements will also detail measures to prevent incursion into sensitive sites, spill protection and clean-up measures.



From the left – construction of the Bollin Valley Tunnel (240m long, 18m high, 24m wide), archaeological dig, amphibian fencing used to protect new ponds and assist with the relocation of newts.

¹⁶ Environmental Baseline (Part 1) – Axis PED 2010

¹⁷ Environmental Appraisal (Part 2) – Axis PED 2010

7. Glossary

- **Standard Busy Hour (SBH)** - The conventional approach adopted by the International Air Transport Association (IATA) for Terminal Capacity planning is to assess the design capacity against the demand in an hour known as the ‘Standard Busy Hour’ (also known as Standard Busy Rate, SBR) defined as the 31st busiest hour in a year. The concept of SBH is rooted in civil engineering practice and is widely also used for example in determining the design volumes of highways.
- **International Air Transport Association (IATA) Service Standard C:** The International Air Transport Association (IATA) publishes Space Design Standards based on a level of service concept, where Level A is Excellent and Level D is desirably the lowest level achieved in peak operations. Level F is the point of system breakdown or congestion. These standards have been adopted for terminal planning and are shown in the table below. Most Airports use Level C for planning purposes.

IATA Level Of Service Space Standards For Airport Passenger Terminals Based On Busy Hour

Level of Service	A	B	C	D	E
Check-in Queue	1.8	1.6	1.4	1.2	1.0
Wait/Circulate	2.7	2.3	1.9	1.5	1.0
Hold Room	1.4	1.2	1.0	0.8	0.6
Baggage Claim Area	2.0	1.8	1.6	1.4	1.2
Government Inspection	1.4	1.2	1.0	0.8	0.6

Passenger numbers/M²

Level A: Excellent service, free flow, direct routes, no delay, excellent level of comfort.

Level B: High-level service, condition of stable flow, high level of comfort.

Level C: Good level of service, conditions of stable flow, provides acceptable throughput, related sub-systems in balance.

Level D: Adequate level of service, condition of unstable flow, delay for passengers, conditions acceptable for short periods of time.

Level E: Unacceptable levels of service, conditions of unstable flow, sub-systems not in balance, represents limiting capacity of the system.

Level F: System breakdown, unacceptable congestion and delays.

8. Appendices

A: Policy RT5 Table of Efficiencies

B: Appraisal of Area C – Drivers Jonas LLP, 2009

C: Car Parking Modelling – AECOM, 2009

D: Summary of Environmental Constraints and Mitigation

Introduction

Policy RT5 of the adopted Regional Spatial Strategy (2008) for the North West states:

“In determining requirements for the expansion of an airport beyond its existing boundary, plans and strategies should take account of:

- the scope for intensification and rationalisation of activities and facilities within the existing boundary;
- the scope for relocating existing activities or facilities off-site;
- the scope for developing proposed activities or facilities off-site”.

The Airports Master Plan sets out the overall vision and the strategic context for the growth and the development of the Airport.

The main principle is one of land use efficiency and technological improvement. Limits have been placed on the physical spread of the Airport site. The intention is for redevelopment of land within the existing boundary as far as possible and non-core activities moved to the site periphery, or off-site altogether.

As a high level measure, the efficiency of the Airport is set to increase to 2030:

	Capacity (MPPA)	Operational Land (Ha)	Efficiency (Passengers Per Hectare)
Current	25	625	40,000
2030	50	800	62,500

The following table details how Operational Uses at the Airport will be developed in the most efficient manner in order to meet the criteria set out within RSS Policy RT5.

Operational Use	Description	The scope for intensification and rationalisation of activities and facilities within the existing boundary	The scope for relocating existing activities or facilities off-site	The scope for developing proposed activities or facilities off-site	Location within the expanded Operational Area
Runways and Taxiways	<ul style="list-style-type: none"> Since February 2001 the Airport has two main operational runways (23R-05L and 23L-05R). The current operating capacity of both runways is 61 movements per hour. There are detailed international and national licensing requirements that determine the operation and layout of the airfield. These are set by the CAA and are included in CAP 168 and CAP 642. The Airfield currently comprises 312 ha (50% of the Operational Area) 	<ul style="list-style-type: none"> The two runways, when the airfield layout is fully developed, will provide sufficient runway capacity at Manchester to 2030. There are no plans for a third runway in the period up to 2030. Instead, capacity enhancements will be made to increase the peak hour capacity from 61 movements per hour to 76 movements per hour. These will comprise enhancements in five main areas <ul style="list-style-type: none"> Taxiway improvements Changes to local aircraft departure procedures An additional runway crossing point Refinements to airfield procedures Modifications to handle new large aircraft including the Airbus A380 	<ul style="list-style-type: none"> None – must be within the licensed aerodrome and adjacent to existing facilities 	<ul style="list-style-type: none"> None – must be within the licensed aerodrome and be located adjacent to existing facilities 	<ul style="list-style-type: none"> The airfield developments would largely take place within the existing Operational Area. The construction of a parallel taxiway for Runway 23L-05R would require an extension of some 15 ha (Area F). 4 ha of Area A will also be required for this purpose. The taxiway location and layout is determined by the aerodrome licensing requirements set out in the C.A.A.s CAP 168. In 2030, the Airfield will measure 334 ha (an increase of 22ha - 42% of the Operational Area)
Apron	<ul style="list-style-type: none"> The existing apron at Manchester Airport currently extends over 85 hectares (14% of the Operational Area) and has 99 aircraft stands that can be used to park a wide range of aircraft types. The range in aircraft size is considerable from aircraft with a wingspan of 20 metres through to the largest wide-bodied aircraft with a wingspan of 79 metres. Small, medium and large stands are therefore required to accommodate all aircraft sizes. The principal apron activities are: <ul style="list-style-type: none"> The parking aircraft for the loading and unloading of passengers The parking of aircraft for the loading and unloading of freight and mail The parking of aircraft awaiting entry into service or awaiting maintenance Aircraft turn-round activity, such as fuelling, servicing, and catering Airfield safety governs how much apron space is needed, and the requirements are set out in CAP 168 and CAP 642. 	<ul style="list-style-type: none"> The Apron must be of a sufficient size to cope with peak hour demand. As the Airport grows, there will be a need for additional areas of apron to provide the required numbers of aircraft parking positions. The priority will be to develop land within the existing Operational Area. In identifying the preferred location for future apron facilities, a number of alternate locations were considered. Some of the key issues in identifying the preferred location were: <ul style="list-style-type: none"> The proximity to the passenger terminals and the existing infrastructure The ability to provide additional apron that provides 'pier-service' for passengers The length of bussing operations that service the remote aircraft parking positions Aircraft taxing time to / from the parking positions and runway thresholds The effect of the location on the predominant flow of airfield activity The effect of congestion on the existing airside and taxiway layout Environmental and community impacts 	<ul style="list-style-type: none"> None – apron is one of an airport's core facilities and must be located with access to the airfield taxiways and be in close proximity/adjacent to the main terminal buildings. 	<ul style="list-style-type: none"> None – apron is one of an airport's core facilities and must be located with access to the airfield taxiways and be in close proximity/adjacent to the main terminal buildings. 	<ul style="list-style-type: none"> Increasing apron capacity is essential for the Airport to meet future aircraft movements. 44 additional aircraft stands are required and a number of potential remote apron areas were evaluated. These were on a number of sites within the existing and proposed Operational Area and included sites to the south of the runways. These alternative sites were dismissed as unfeasible due to the areas being already built up, not operationally appropriate or that the environmental or community impact was considered to be too great. The preferred option is to develop to the east of Terminal 3, to the north and west of Terminal 2 and through the development of remote apron to the west of the existing aircraft maintenance area. To maximise land use efficiency some existing uses will be displaced to the Airport edge to enable apron development. These will include Operational uses such as cargo transit sheds, freight forwarding units, aircraft maintenance hangars, business aviation facility, fuel farm and car parking. In 2030, the Apron will measure 185 ha (an increase of 100ha - 23% of the Operational Area)

Operational Use	Description	The scope for intensification and rationalisation of activities and facilities within the existing boundary	The scope for relocating existing activities or facilities off-site	The scope for developing proposed activities or facilities off-site	Location within the expanded Operational Area
Terminals	<ul style="list-style-type: none"> Manchester Airport has three passenger terminals. The terminals include facilities for: <ul style="list-style-type: none"> Passenger processing (including check in facilities) Baggage handling, including sorting and reclaim Security / Immigration controls Departure Lounges Gate Lounges The current annual terminal capacity is estimated to be between 23-25 million passengers a year. However, a peak hour passenger flow is a more appropriate measure and trigger of increased capacity. The Airport has a total departure and arrival capacity of 8,000 passengers in the busy hour, and the Standard Busy Hour throughput in 2008 was 6,706 passengers. The actual Busiest hour was 8, 528. The Central Terminal Area measures 33ha (5% of the Operational Area) 	<ul style="list-style-type: none"> The preferred option is to concentrate initially on enhancing the capacity of the existing terminal complex. This will require major extensions to Terminal 2 and the refurbishment extension and rebuilding of parts of Terminals 1 and 3. The development of the existing terminal complex brings several benefits and efficiencies, in that it centralises activity, improves connectivity between the terminals, and concentrates on the existing public transport and surface access links. 	<ul style="list-style-type: none"> Generally, most of terminal activities must be located centrally on the site and adjacent to existing core facilities and the principal airport surface access facilities. There is some scope for off site / remote check in facilities. 	<ul style="list-style-type: none"> Generally, most of terminal activities must be located centrally on the site and adjacent to existing core facilities and the principal airport surface access facilities. There is some scope for off site / remote check in facilities. 	<ul style="list-style-type: none"> Development of the existing terminal complex as opposed to developing a further terminal has several benefits including: <ul style="list-style-type: none"> Minimises the need to build on green field sites and reduces land take Flexibility – allows the ability to adapt to changes Consolidates the operations of the terminals and therefore allows economies of scale and reduced operational costs. Concentrates surface access into the existing public transport facilities and negates the need for any further large-scale redevelopment of the junctions connecting to the motorway. The development of the terminal complex will result in other existing operational uses such as car parking being displaced to the edge of the site. In 2030, the Terminal area will measure 41 ha (an increase of 8ha - 5% of the Operational Area)
Cargo - Transit Sheds	<ul style="list-style-type: none"> The World Freight Terminal is situated to the west of the passenger terminal complex but cargo aircraft share the Terminal 2 Apron. The Transit Sheds are used for: <ul style="list-style-type: none"> The processing of import and export air cargo- Security and Customs screening and processing The consolidation and loading of aircraft pallets Unit Load Devices 	<ul style="list-style-type: none"> Air cargo is an essential element of the airport activity and facilities will continue to be provided and developed as a core part of the Airport's activity. Cargo is valuable in maintaining the viability of passenger services, as a high proportion of the Airport's cargo throughout is carried in the holds of passenger aircraft Due to their age, the existing sheds will require modernisation to increase efficiency. 	<ul style="list-style-type: none"> Transit Sheds need to be located adjacent to the Apron and within the UK Border Agency Controlled Area to allow quick transfer onto cargo services. They therefore cannot be located off site. 	<ul style="list-style-type: none"> Transit Sheds need to be located adjacent to the apron and within a DFT approved secure airside location (UK Border Agency Controlled Area) which allows direct landing to allow transfer onto aircraft. They therefore cannot be located off site. 	<ul style="list-style-type: none"> Operational land will be reserved for redevelopment and extension of the World Freight Terminal. The existing Cargo Transit Sheds will be displaced by apron development. The preferred option is to redevelop modern Cargo Transit Sheds to the west of the existing World Freight Terminal Site, in Operational Extension Areas A and E.
Cargo - Freight Forwarding and Logistics	<ul style="list-style-type: none"> There is presently approximately 46,500 square metres of freight forwarding floor space within the World Freight Terminal. Freight forwarders process and consolidate air freight that is then transported to a Transit Shed. As speed of movement of goods is a specific requirement for air related logistics, freight forwarders need to be located close as possible to the Transit Shed activity at the Airport. 	<ul style="list-style-type: none"> Land for freight forwarding will continue to be provided as an important airport use and an integral part of the Airport's Air Cargo product. It is estimated that around 140,000 sq m of freight forwarding warehouse space will be required, however not all of this can be accommodated within the Operational Area. 	<ul style="list-style-type: none"> The major operators require an on-airport presence with convenient access to the Transit Sheds. There is however some freight forwarding activity located off-site, but in areas that are in close proximity to the Airport. 	<ul style="list-style-type: none"> Freight forwarding and logistics are an important economic opportunity for the City Region and for Wythenshawe. The Airport Company will therefore seek to identify one or more sites, preferably within the development corridors shown in the Wythenshawe Strategic Regeneration Framework area. Such sites will need to be in close proximity to the Airport and will require high quality links to the Airport site and the strategic road network. 	<ul style="list-style-type: none"> The existing Freight Forwarding Units will be displaced by apron development. By 2030 it is anticipated that an additional 37 hectares of Operational Area will be needed to support the future Transit Shed and Cargo activity. The preferred option is to redevelop the Freight Forwarding units to the west of the existing World Freight Terminal Site in Operational Extension Areas A and E.

Operational Use	Description	The scope for intensification and rationalisation of activities and facilities within the existing boundary	The scope for relocating existing activities or facilities off-site	The scope for developing proposed activities or facilities off-site	Location within the expanded Operational Area
Aircraft Maintenance	<ul style="list-style-type: none"> The aircraft maintenance village covers an area of some 9 hectares and is located on the West Side of the Airport. Aircraft maintenance includes regular in-schedule aircraft checks, major aircraft servicing, casualty maintenance and repair, aircraft interior and external livery painting. All aircraft are required to undergo regular inspections that can range from a simple check to major re-assembly. Compared to other European airports with similar throughput to Manchester, the scale of the existing operation is significantly smaller. This is influenced by the fact that there is no significant national airline based at the Airport. Aircraft Maintenance accommodates 13 ha (2% of the Operational Area). 	<ul style="list-style-type: none"> Most aircraft maintenance work needs to be undertaken in a hangar and is an essential part of an airline's operations and a key activity at many international airports. There is at present some spare hangar capacity at the Airport. The principal focus will be to maximise the use of the existing facilities before any additional land is allocated for this use. A more efficient layout could be achieved through redevelopment of the existing Aircraft Maintenance Maintenance companies need flexibility to ensure that the most efficient use is being made of the hangar space. 	<ul style="list-style-type: none"> None – must be located adjacent to the apron and taxiway to allow for access by aircraft. Most support activity is located off site (e.g. workshops, suppliers etc). 	<ul style="list-style-type: none"> None – must be located adjacent to the apron and taxiway to allow for access by aircraft. Most support activity is located off site (e.g. workshops, suppliers etc). 	<ul style="list-style-type: none"> In the longer term, post 2015 it is expected that land will be allocated for a further two aircraft hangars within an extended maintenance area covering 15 ha (2% of the Operational Area). With the development of additional apron, this may provide an opportunity for the redevelopment and relocation of the maintenance area. The existing Aircraft Maintenance Area will be displaced by apron development. The preferred option is to redevelop hangars to the west of the existing Aircraft Maintenance Village, in Operational Extension Area A.
Air Traffic Control and Navigation Aids	<ul style="list-style-type: none"> The Airport's Air Traffic Control facility is located within the Terminal 1 Tower Block where National Air Traffic Services (NATS) operate a major facility. This complex includes the Visual Control Room (VCR) that is on the top of the Tower Block and the Manchester Approach Centre that controls air traffic activity in the Manchester Control Zone. 	<ul style="list-style-type: none"> The VCR must be located on site. A new tower is proposed alongside the North Side Fire Station. Proposals will also include the installation of second Surface Movement Radar to be sited on land to the rear of the South Fire Station. The national en-route sub centre is to relocate from Manchester to Prestwick in December 2009. In addition some navigation aids can be located off site. 	<ul style="list-style-type: none"> None - must be located adjacent to and with clear views across the airfield. 	<ul style="list-style-type: none"> None - must be located adjacent to and with clear views across the airfield. 	<ul style="list-style-type: none"> The VCR has defined location criteria and must be situated on a site and at a height that gives the Air Traffic Controllers a clear view of the runway activity. The Manchester ATC Approach Centre needs to be located within the same unit as the VCR.
Fire and Rescue Facilities	<ul style="list-style-type: none"> The Airport has two existing fire stations – the South and North Fire Stations. They contain crew accommodation, training facilities, watchtower, appliance parking and maintenance. 	<ul style="list-style-type: none"> The CAA set out the requirements and facilities that are mandatory and includes the minimum levels for staffing and appliances. This is generally referred to as the Rescue and Firefighting Category (RFF). Currently Manchester is licensed to Rescue and Firefighting Category 9. This level of service covers the regular operation of aircraft up to Boeing 747-400 size and also permits operations by a limited number of aircraft from Category 10. This highest category includes aircraft such as the Antonov AN124 and the new Airbus A380. The North Fire Station was constructed in the 1960's and is becoming increasingly expensive and difficult to maintain. 	<ul style="list-style-type: none"> None - the Airport Fire Stations must be located so that the Fire and Rescue Service can reach all parts of the airfield in two to three minutes. It was for this reason that the South Fire Station was constructed as part of the Second Runway development. Fire and Rescue Facilities must be located on site for clear operational and safety reasons. 	<ul style="list-style-type: none"> None - the Airport Fire Stations must be located so that the Fire and Rescue Service can reach all parts of the airfield in two to three minutes. It was for this reason that the South Fire Station was constructed as part of the Second Runway development. Fire and Rescue Facilities must be located on site for clear operational and safety reasons. 	<ul style="list-style-type: none"> The site of the North Fire Station will be required for future taxiway/apron improvements. A site will be identified in the vicinity of the existing facility or in Area A for a new Fire Station. The Fire and Rescue Service must continue to meet the CAA's requirements.
Flight Catering	<ul style="list-style-type: none"> The flight catering units are located on the west side of the Airport. Flight catering activities include cooking and in-flight meal assembly, equipment storage, and Customs Bonded Stores 	<ul style="list-style-type: none"> Land will continue to be provided for Flight Catering Facilities within the Operational Area. Modernisation will increase productivity within the existing facilities and the changing 	<ul style="list-style-type: none"> Certain elements such as meal assembly, equipment storage and the Custom's Bonded Store on the Airport site allow use of specialist vehicles. The flight catering loading areas have to offer aircraft delivery 	<ul style="list-style-type: none"> Yes – some facilities can be located off site but are complementary to the core on-site catering activity. 	<ul style="list-style-type: none"> The existing flight catering units will be displaced by apron development. The preferred option is to redevelop units to the west of the existing World Freight Terminal, in Operational Extension Area E.

Operational Use	Description	The scope for intensification and rationalisation of activities and facilities within the existing boundary	The scope for relocating existing activities or facilities off-site	The scope for developing proposed activities or facilities off-site	Location within the expanded Operational Area
	<ul style="list-style-type: none"> There are additional facilities away from the Airport on nearby industrial estates. 	<p>airline requirements will result in changes to the overall in-flight catering product. Increases in long haul travel will increase need for in flight catering.</p>	<p>vehicles convenient access to the apron.</p> <ul style="list-style-type: none"> Some elements of the flight catering activity can be located away from the main airport site, but in locations that provide good and convenient access. 		
Fuel Farm	<ul style="list-style-type: none"> The Fuel Farm is situated on the West Side of the Airport between the aircraft maintenance village and the World Freight Terminal. It is necessary to have sufficient fuel storage capacity within the Fuel Farm to balance the fuel within the system and also to ensure a continuity of supply should there be any faults with the main supply pipeline. Facilities on the farm include major storage tanks, offices, vehicle depots, specialist equipment and maintenance. 	<ul style="list-style-type: none"> Capacity for additional aircraft fuel capacity will be provided by the development of enlarged and new tanks within the existing Fuel Farm. Currently the farm has capacity for only one additional tank. 	<ul style="list-style-type: none"> An underground pipeline supplies most of the aviation fuel to the site and is distributed through an underground hydrant system serving all new aircraft stands. The location of the existing pipeline restricts alternative relocation sites. An alternative location needs to be able to connect onto the pipeline. There must be an onsite presence of fuel for reasons of security and government regulations. This avoids the need for substantial tanker movements on the local road network. Distribution of fuel within the airfield is through an underground hydrant system and all new aircraft stands are to be served by the hydrant system 	<ul style="list-style-type: none"> The core fuel storage facility should be provided on site. 	<ul style="list-style-type: none"> Aviation fuel is transported to the Airport by pipeline. This establishes the main locations for the Fuel Farm and main fuel storage depot. In the longer term a second fuel pipeline may be required.
General and Business Aviation	<ul style="list-style-type: none"> General and Business Aviation facilities are presently provided on the West Side of the Airport. There is a purpose-built facility to the rear of the aircraft maintenance village. Business Aviation is the principal activity, made up of corporate aircraft operations and air taxi services. 	<ul style="list-style-type: none"> Land will continue to be provided for Business Aviation, as it is an important part of the overall airport activity, serving the business and corporate sector in the North West. This will include aircraft parking, passenger terminal and aircraft maintenance facilities. General aviation activity will be displaced as a result the development of apron and taxiway. 	<ul style="list-style-type: none"> The Business Aviation facility needs a site within the Operational Area with direct access to the taxiways and the runways. 	<ul style="list-style-type: none"> Flying school and private flying facilities will be displaced to other airfields. 	<ul style="list-style-type: none"> The Business Aviation facility requires a convenient location adjacent to the Airport's runways and taxiways. The existing Business Aviation facility will be displaced by apron development. An expanded or redeveloped Business Aviation facility could form part of future apron development on the west side of the Airport site.

Operational Use	Description	The scope for intensification and rationalisation of activities and facilities within the existing boundary	The scope for relocating existing activities or facilities off-site	The scope for developing proposed activities or facilities off-site	Location within the expanded Operational Area
Office Accommodation	<ul style="list-style-type: none"> Offices located at the Airport include: <ul style="list-style-type: none"> Airport Company offices. Airline, Handling Agents and Aviation related offices. Statutory and Control Authority offices. Ancillary offices including commercial and related activities. Some of these offices are located with the three passenger terminals and the World Freight terminal, as their function needs to directly relate to operational activity within the terminals. Other offices are located in four buildings in the Operational Area: <ul style="list-style-type: none"> Tower Block 5,200 m² Olympic House 7,780 m² Voyager 6,800 m² 4M (The Station) 8,000 m² 	<ul style="list-style-type: none"> Current vacancies will be filled unless customized single occupier space is demanded. Any new operational office accommodation will generally be provided within the expanded terminal facilities. Where office space is ancillary to a main use such as aircraft maintenance or cargo, then space will continue to be provided as part of that use. A range of office accommodation will continue to be provided and sites will be identified within the existing Voyager, 4M and Olympic House axis, where there is a high density of development and in close proximity to the Station. 	<ul style="list-style-type: none"> The majority of the office accommodation on the Airport site supports the core airline operation. These offices generally include the local airline base with accommodations for airline crews and other support activities. 	<ul style="list-style-type: none"> Some office facilities can be developed away from the Operational Area, but in locations that have convenient access to the main site. 	<ul style="list-style-type: none"> The on-site office facilities need to be located with convenient access to the Central Terminal Area. This is to provide accommodation for airlines, the Airport Company, the Control Authorities and airport support activities.
Security and Control	<ul style="list-style-type: none"> The existing Police Station is located adjacent to Terminal 3 and provides control and support accommodation for the Greater Manchester Police Airport Sub-Division. Other specialist activities are located across the site e.g. police firing range UK Border Agency – substantial office presence and other support activities such as detention centres and dog kennels. 	<ul style="list-style-type: none"> This existing police station is too small for the present and future operational demands of the Airport and cannot easily be extended. In the long-term, a site for a new Police Station will be required within the Operational Area. Certain Border Agency facilities require replacing e.g. kennels do not meet current animal welfare standards 	<ul style="list-style-type: none"> None – The Police station is one of the core operational and security facilities and must be located within the Operational Area. Other specialist facilities may be moved to Moss Lane. 	<ul style="list-style-type: none"> None – must be located within the Operational Area. Some back up facilities are located in Greater Manchester. 	<ul style="list-style-type: none"> Some temporary accommodation has been provided for Greater Manchester Police, but it is considered that a new Police Station will be required. This will need to be within the Operational Area with access to the Terminals and the local road system. The Terminal 2 Phase 2 development and its associated road scheme may provide a site in the Thorley Lane / Runger Lane area, however detailed feasibility studies will be required. The current Border Agency I facilities within the West Side area will also require relocation as part of the redevelopment of that area. The preferred option is to redevelop these facilities to the west of the Airport, in Operational Extension Areas A and E.
Utilities	<ul style="list-style-type: none"> Over the years a network of services and utilities has been developed across the site. The Airport has a substantial utility network that includes electricity sub-stations, drainage reservoirs switch rooms and storage. 	<ul style="list-style-type: none"> As the Airport grows there will be a need to upgrade and increase the capacity of all the principal services. The increase in efficiency in the use of energy and the developing use of renewable energy technologies will result in a change from the traditional approach to utility management. 	<ul style="list-style-type: none"> The core utilities need to be provided within the Operational Area. 	<ul style="list-style-type: none"> The core utilities need to be provided within the Operational Area, however there may be an opportunity for the development of renewable energy sources away from the main Airport site. 	<ul style="list-style-type: none"> The core utilities such as energy generating plant need to be in close proximity to the Central Terminal Area.
Hotels	<ul style="list-style-type: none"> It is important that a major international airport provides a portfolio of hotel facilities that meets the different needs and expectations of passengers and users. 	<ul style="list-style-type: none"> It is important that a major international airport provides a range of on-site hotel facilities to meet the needs and the expectations of passengers. They serve business and leisure passengers and also the demand generated by domestic and foreign-based airline crews. The Operational Area provides the core hotel provision although some hotels close to the Airport site also provide part of the overall hotel supply. 	<ul style="list-style-type: none"> It is important that a major international airport provides a range of on-site hotel facilities to meet the needs and the expectations of passengers. They serve business and leisure passengers and also the demand generated by domestic and foreign-based airline crews. The Operational Area provides the core hotel provision although some hotels close to the Airport site also provide part of the overall hotel 	<ul style="list-style-type: none"> There is scope for some of the overall hotel supply to be provided in areas outside the Operational Area, however it is important that the Operational Area provides a core level of hotel provision with accessibility and connectivity to the Central Terminal Area. 	<ul style="list-style-type: none"> Hotels need to have good connectivity and accessibility to the Central Terminal Area and the Airport's principal surface access links.

Operational Use	Description	The scope for intensification and rationalisation of activities and facilities within the existing boundary	The scope for relocating existing activities or facilities off-site	The scope for developing proposed activities or facilities off-site	Location within the expanded Operational Area
Car Parking	<ul style="list-style-type: none"> Short-stay car parking is provided in the central terminal area in multi-storey car parks. Surface car parks on the edge of the Operational Area provide both long-stay and staff car parking. The short-stay car parks are the most intensively used, and it is essential that they are close to the terminals. 	<ul style="list-style-type: none"> The Airport will develop additional short stay parking capacity within the central terminal area. This is most likely to include extensions to existing multi-storey car parks at Terminal 2 and Terminal 3 along with the possibility of a new multi-storey car park to the rear of Voyager. The Airport will seek to optimise the density of long-stay car parking on the Airport site in the context of the varied needs of our consumers and the Ground Transport Plan, this may include exploring decking or multi-story products. 	<p>supply.</p> <ul style="list-style-type: none"> The majority of spaces for long stay parking are 'offsite' in car parks that are independently managed and operated. A core supply of long-stay car parking needs to be provided within the Operational Area and the car parks on the main Airport site act as the 'provider of last resort' as the off-airport operators all operate pre-booked facilities. 	<ul style="list-style-type: none"> The Airport will explore opportunities to identify and promote park and ride facilities remote from the Airport site. The supply of off-airport car parking sites is uncertain in the long-term as no provision for this use is made in the local authorities' development plan documents. 	<ul style="list-style-type: none"> Long-stay car parks can be provided to the periphery of the Operational Area. This provides a convenient location to the main road links and the car parks are connected to the Central Terminal Area by regular courtesy bus services.
Vehicle Maintenance and Other Operational Facilities	<ul style="list-style-type: none"> The vehicle maintenance area is currently located in the West Side of the Airport needs to be located in a location convenient to all Airport vehicles. Other operational functions required to keep the Airport operating safely and efficiently include: <ul style="list-style-type: none"> Accommodation for Airport Operations; Parking and storage for apron and airfield equipment; Aircraft cleaning and washing facilities - At major airports with a substantial fleet of based aircraft, there is a need to provide facilities for Handling Agents to wash aircraft in dedicated areas in order to comply with stringent controls on the quality of run-off from the airfield; Material storage; Snow fleet; Vehicle Fuelling Point; De-Icing Silos; Waste; Aircraft Safety Unit - This provides accommodation and vehicle parking for airfield safety and airfield maintenance activities Retail consolidation; Contractors compounds; Vehicle washing facilities; Emergency services rendezvous site; Aircraft toilet drop. 	<ul style="list-style-type: none"> Vehicle maintenance currently occupies the old wartime hangars - there is opportunity to rationalise the vehicle maintenance area through purpose built buildings. The area of existing operational uses can be rationalised through storage off site. Safeguarding a site of similar size to existing should enable future expansion of operational uses as required by any changes to operational or security regulations. 	<ul style="list-style-type: none"> Some of the more specialised vehicles (tugs, hols baggage belts etc) are not licensed for the public road and therefore requires on-site maintenance of vehicles. Smaller vehicles can be maintained off site by third parties. Other than storage off site, the majority of operational uses require a location with convenient access to the apron. 	<ul style="list-style-type: none"> Some of the more specialised vehicles (tugs, hols baggage belts etc) are not licensed for the public road and therefore requires on-site maintenance of vehicles. Smaller vehicles can be maintained off site by third parties. Other than storage off site, the majority of operational uses require a location with convenient access to the apron. 	<ul style="list-style-type: none"> The existing Vehicle Maintenance and other Operational Facilities will be displaced by apron development. The preferred option is to redevelop these facilities to the west of the Airport, in Operational Extension Areas A and E.

File Note

To: **Manchester Airport Group**

Date : 02 December 2009

Appraisal of Area C

Proposed Operational Area Extension

1. Area C is 18.2 hectares with a developable area of circa 12 hectares contained within two distinct sites: on land to the north of Thorley Lane ("Thorley Lane") and land encapsulated by the Junction 5 slip road and M56 spur ("M56 spur"); as illustrated on the plan below.
2. The sites are relatively flat, with localised raised land associated with the highway embankments of both the slip roads. Both areas sit on the northern edge of the current operational area and washed over by the green belt. Land to the north of Thorley Lane is further safeguarded against development by environmental policy¹ within the Manchester UDP.



3. Area C is identified within the Manchester Airport Land Use Plan² as one of five proposed extensions to the airport operational area that will contribute to planned and projected growth to 2030. Manchester Airport estimates that a total of **800 hectares** of operational land will be required to accommodate a capacity of 50 million passengers per annum by 2030. An increase of 175 hectares.
4. The planned expansion at Manchester seeks to intensify and rationalise existing activities through land use efficiency and technological improvement. The airport

¹ Manchester Unitary Development Plan, 1995, Policies EW27-EW29

² Manchester Airport Land Use Plan (part of the Manchester Airport Masterplan to 2030)

currently processes 40,000 ppha³, through the expansion of the operational area this will increase to an efficiency of 62,500 ppha by 2030.

5. As a comparator airport, Barcelona currently accommodates approximately 30 million passengers per annum. Its operational area has increased from 845 hectares to 1,533 hectares in 2009⁴ (35,500 ppha), to provide further physical expansion in order to accommodate 70 million passengers per annum by 2018 (45,600ppha). In physical size and potential patronage numbers, this helps to demonstrate the continued efficiency of Manchester Airport's core operational area and its functionally-tied activities.
6. MIER highlights the importance of Manchester Airport for the long term economic growth of the city region⁵ and the critical role of the airport in driving up productivity and boosting the economy. However, in comparison to other European airports, Manchester has not yet fulfilled its potential or maximised its opportunities for development. As such, the growth of Manchester Airport must be supported in order for it to be truly recognised as major international airport, on par with major European airports such as Barcelona, Madrid or Amsterdam.
7. Studies carried out on employment and economic impact (York Aviation) point to the scale of benefit accruing from airport growth. This indicates an operational area of need to include:
 - a) Commercial activities within the core airport site (the Operational Area) to directly support passengers, freight and related activities; this includes the direct business requirements of an airport, which are required to be 'functionally-tied' to primary airport-related activities. These are directly dependent on the airport, its operational requirements and its location.
8. Core operational activity within an airport includes 'functionally-tied' operational facilities and infrastructure, passenger terminals, cargo facilities, aircraft maintenance and ancillary airport infrastructure (including airport hotels, ancillary office accommodation and retail uses).
9. Area C is not suited to core operational activities related to aircraft parking, movement or uses requiring apron access by virtue of its location, accessibility and direct physical relationship to the existing terminals. However, is very well suited to the accommodation of cargo/logistics and hotel uses which are functionally-tied and directly proximate to the airport. These uses are reliant on accessibility, strong physical links to the airport and a prominent gateway position.
10. The demand for cargo/logistics floorspace is led by a significant growth⁶ of world wide air cargo traffic and a change in distribution operations away from a central model to a number of decentralised, supply chain and time critical networks particularly in the sectors of fresh product, fast moving consumer goods and pharmaceuticals.
11. In floorspace terms this equates to a demand for approximately 220,000 sqm (2,365,000 sqft) for future developments up to 2030⁷ broken down as:

³ Passengers per hectare

⁴ <http://www.airport-technology.com/projects/barcelona/>

⁵ Manchester Independent Economic Review, March 2009, p24

⁶ 253% over 20 years - Buck Consultants International – Summary Paper to Manchester City Council, November 2008

⁷ Buck Consultants International – Summary Paper to Manchester City Council, November 2008

⁸ Buck Consultants International – Summary Paper to Manchester City Council, November 2008

- 50,000 sqm (538,195 sq ft) transit sheds;
 - 70,000 sqm (538,195 sq ft) freight forwarding;
 - 50,000 sqm (753,473 sq ft) warehousing/distribution; and
 - 50,000 sqm (538,195 sq ft) mixed use (including offices).
12. The demand for hotel floorspace is based on research undertaken by Jones Lang LaSalle. It points to the historic growth of 100 rooms/1 million passengers. On this trajectory a further 900 rooms will be required once airport capacity reaches 30 million passengers.
13. Analysis of demand and location demonstrate that Area C would be suited for development of the following:

CARGO/LOGISTICS:	
Thorley Lane	<p>There is potential to locate cargo / logistics facilities to directly serve the core airport business. This would include value added occupiers, couriers, freight forwarders, perishable warehousing and high value warehousing. These types of companies include e.g. DHL, UPS, TNT and Excel.</p> <p>A 6% growth in cargo volume at Manchester Airport is projected over the short and long term – this reflects the non-linear demand patterns which require supply to respond in a flexible manner to market developments⁸.</p> <p>Access to transport networks and airport facilities - alongside security - are key factors in logistics operations. Logistics and cargo uses would be most suited to land situated to site "Thorley Lane" by virtue of its accessibility and size.</p>
M56 spur	<p>Land within the M56 spur would not be a viable option due to site accessibility and actual developable area, which is not sufficient to generate any 'critical mass' on the site.</p>
COMMERICAL DEVELOPMENT:	
Thorley Lane or M56 spur	<p>Office accommodation is a key requirement for successful airport operation. The increasing scale of airport operations, the enhanced expectations of airport users and operators; and potential benefits of capitalising on the economic benefit opportunities that the airport brings to the area will deliver the requirements for new space.</p> <p>Occupiers located within the airport's operational area would have a strong association with the Manchester Airport operation, brand and corporate image. There is the potential for quality flexible commercial accommodation which has strong links to the airport and its core activity – displacement of existing services to accommodate an expanded apron could be accommodated in newly developed office space.</p> <p>A prominent gateway position and strong visibility give a significant commercial market appeal for new high quality office headquarters development. A range of major corporate occupiers would include airlines, catering and travel companies such as Delta or Singapore Airlines. Connectivity with the airport's core activities, highway network, public transport hub and regional centre are key to the suitability of Area C for these commercial uses.</p>
HOTEL:	
Thorley Lane or	<p>It is imperative that a major international airport provides an on-site portfolio of hotel accommodation that can meet the needs and expectations of passengers.</p>

M56 spur	As airport throughput increases, the demand for a variety of high quality, gateway hotels will increase. Accessibility and connectivity to the main terminal buildings and multi-modal transport hub are crucial to the commercial viability of a hotel use on Area C. It is an ideal site for this type of use.
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14. The potential uses require a number of issues to be addressed; including the following.
- § **Accessibility:** Airport related activity would require adequate access to both the motorway network and existing airport activities at Site "A". Site "B" has good access which could be improved/enhanced to accommodate a range of uses. Proposals exist to provide a link bridge to Area C via a new Terminal Two / Second Runway road.
 - § **Connectivity:** the separate parcels of Area C will require improved connectivity (cycle, pedestrian and public transport shuttle) with the terminal buildings (especially terminals 1 & 3) and The Station public transport hub.
 - § **Legibility:** there is the potential to isolate any commercial uses due to a possible lack of legibility and synergy with other uses. Occupiers would require strong visibility and strong association with the airport brand which befits the location of Area C on a primary high quality gateway to the airport. Site "B" provides the opportunity to offer a greater legibility, sense of arrival and promotion of this brand. Site "A" in a sunken position, is less visible on either entry or exit from the airport. A landmark building would, however, combat this issue.
15. There is a clear and identified need for the release of development land to meet operational area demand. There is a lack of available land within the current operational area to match this recognised need. The release of identified operational extension area, which benefit from strong links to core airport activity, will be necessary for the airport to match growth aspirations which are identified in the Aviation White Paper, Regional Spatial Strategy and Airport Masterplan to 2030.
16. Area C provides the capacity and opportunity to accommodate the expanding operational needs of Manchester Airport within the range of uses listed above. The site is attractive in terms of its high profile, high visibility position on the strategic road network offering a unique opportunity to frame a key entrance point and create a strong sense of arrival into Manchester International Airport and the City Region.
17. Suitable commercial uses, as identified above, could not be accommodated elsewhere within the operational area, due to the expanding space requirements of other core operational activities and the need for accessibility to the existing highway network and tri-modal transport hub.

Project: **Manchester Airport LDF**

Job No:

Subject: **Model Overview**

Date: **15 December 2009**

Overview

AECOM has carried out ground transport modelling and car park demand forecasting work on behalf of Manchester Airport for over a decade. Since the choice of mode of access and demand for car parking are closely related, it was decided to integrate the two separate spreadsheet based models (MANSAM and Airpark); this took place in 2004. This has provided the Airport with a tool that is used to test the impact of various policy options (such as cordon charging, rail service frequency and so on) on both mode share and car parking demand.

MANSAM

Overview

The MANchester Airport Surface Access Model (known as MANSAM) is capable of assessing the impact of various measures that can be implemented to increase the proportion of trips made to the airport by public transport. The original aim of the model was to assist the airport in identifying means of achieving a 25% mode share for public transport modes for surface access trips to the airport, in accordance with the planning requirements for the second runway, to accommodate 40 million passengers per year.

MANSAM is a mode choice model that is used for the derivation of airport related traffic flows. The propensity to use a mode depends upon the availability of the mode to the traveller (affected by group size and geographical location), as well as time, cost and attractiveness of using that mode, that is its 'utility'. MANSAM predicts forecast usage of different modes of travel by calculating the proportion of the market captured by each. The mode choice models used in MANSAM were developed from Stated Preference and Revealed Preference survey data collected in 1996 that was segmented according to the type of passenger and where their surface journey started.

Model Outputs

The output from MANSAM is the mode share for air passengers and staff for an average busy September day (other months or individual days can be selected if required, however this does not impact on the mode share but provides output in terms of numbers of passengers/car trips required etc). The daily total does not include any indication of time of day, but the mode share can be shown for each zone as well as overall.

AIRPARK

Overview

Those passengers who choose to drive to the Airport can choose to park in either long stay or short stay car parks. Those who get a lift may be dropped off, which will not create any demand for a car park space, or may be seen off, which will. Similarly, the number of parking spaces required for staff at the Airport will be dependent on the proportion who travel by car, but also on the degree of car sharing which will tend to reduce the number of vehicles and hence demand for car parking. Thus, mode share as predicted by MANSAM impacts directly on demand for parking that is modelled by AIRPARK.

The demand for parking not only depends upon the number of vehicles entering a car park, but also for how long the vehicles stay in the car park. A single vehicle parked for a week occupies the equivalent of 168 spaces by 168 vehicles parked for one hour.

AIRPARK predicts how many parking spaces are required based on different durations of stay for air passengers, staff and other visitors to the Airport. Durations of stay differ for air passengers making flights of different categories (domestic, long haul, charter, European scheduled). The parking

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propensities and durations of stay also differ for the driver escorts ('dropping off' and 'picking up') of the four flight categories.

The forecast model used to prepare the estimates for future parking requirements predicts how many parking spaces are required, based on the different durations of stay for air passengers, staff, and other visitors to the airport. Parking behaviour is disaggregated by:

- Type of Parking – long stay, medium stay, short stay and staff;
- Driver's Journey Purpose – air passenger, dropping off an air passenger, picking up an air passenger, and airport visitors;
- Flight Type – domestic, European scheduled, charter and long haul scheduled.

The model also includes sensitivity tests that allow the effects of varying car park charges, and the impact of differing levels of public transport usage, to be assessed.

Model Outputs

Outputs show the demand for parking by duration of stay. These divide into four categories:

- 0 to 4 hours, this group generally consists of people meeting an air passenger, people dropping off an air passenger, and people visiting the airport to conduct business;
- 4 to 24 hours, this group may include some visitors on business but in the main will be dominated by passengers and are most likely to be short haul European or domestic flight related;
- 1 to 4 days, this group will almost exclusively consist of air passengers, a proportion of whom will choose a short stay car park while the rest park long stay; and
- > 4 days, these are all air travellers, with a higher proportion of charter and long haul flights, exclusively in long stay car parks.

The changes in parking for all the above groups can be related directly to the number of air passengers that are forecast, by flight category.

Demand for parking varies through the year, with peaks in demand tending to coincide with the main holiday periods, and although related to flight schedules, the relationship is complex because of the accumulation of cars staying longer than one day in particular car parks. The demand predicted by AIRPARK is based on unconstrained demand; that is, it assumes there is no limit to the availability of parking.

Traffic Modelling

'MANSAM is not a traffic assignment model and thus does not assign trips to particular links on the road network nor does it take into account congestion on particular routes. The allocation of vehicles to particular roads was performed manually for each of the 242 zones with and without SEMMMS in place¹.

We have used a number of models for assignment purposes including GMTU's strategic transport model to inform the distribution within the MANSAM model.

Internal Circulation Model

AECOM has developed a micro-simulation traffic model for the Airport's landside road network and those roads in the immediate vicinity. Developed in VISSIM² it is able to model traffic during both AM and PM peak hours.

¹ This extract is taken from AECOM latest report dated August 2005 on Manchester Airport at 55MPPA in 2030 Traffic Study.

² Modelling Software VISSIM is used for general modeling, simulation and control system design applications.

The demand matrices for the model are based on passenger survey data and traffic counts on key links/junctions. Traffic movements split into several categories such as; long stay and short stay parkers, staff, hotel traffic etc.

Other Highway Models

Two main strategic highway models include the Airport. They are:

- The South-East Manchester Multi-Modal Study (SEMMMS) model. Currently the subject of a recalibration exercise, this was developed in SATURN³ and focuses mainly on the area to the East and Northeast of the Airport.
- The Manchester SATURN model developed by the Greater Manchester Transportation Unit (GMTU) which was developed as a general forecasting tool for the whole of Greater Manchester.

These models show the strategic re-assignment of traffic resulting from major developments or the introduction of significant transport schemes, either of which may result in a re-assignment of road traffic that may have an impact on the Airport.

Although neither of these models is owned or operated by the Airport, AECOM are retained as specialist consultants, ensuring inputs to any modelling exercise accurately represent the nature of road traffic that requires access to the Airport and the proposals for future development.

³ Modelling Software –Simulation and Assignment of Traffic to Urban Road Networks (SATURN)

Operational Area Extension	Description	2030 Operational Uses	Phasing			Site Constraints Summary	Mitigation Summary
			2015	2020	2030		
A	Site A comprises approximately 39hectares (ha) of land, approximately triangular in shape, bounded by the A538 (Wilmslow Road) to the west and Wilmslow Old Road and the existing Airport Operational Land (runway) to the south.	Comprises combination of <ul style="list-style-type: none"> ■ Airfield ■ Aircraft Maintenance ■ Operational Uses ■ Cargo ■ Landscape Mitigation and Landscape Buffer Zone to be provided 	- Enabling works for Airfield. - Interim Car Parking.	- Interim Airfield and Car Parking Complete.	- Extension to Airfield. Maintenance, Operational Uses, Cargo Complete.	<p>Nature conservation features include:</p> <ul style="list-style-type: none"> ■ Cotteril Clough SSSI, ■ Cotteril Clough SBI (Grade A) ■ Ponds Near Runway SBI (Grade C). <p>Potential protected species include:</p> <ul style="list-style-type: none"> ■ Great crested newts ■ Common toad ■ Breeding birds ■ Bats ■ Otter ■ Water vole ■ Adder, ■ Native bluebell. <p>Historic Environment</p> <ul style="list-style-type: none"> ■ Cloughbank Farm, Grade II Listed Building, ■ 'Site of Ringway Chapel' a historic interest feature listed on the HER but with no statutory protection it is currently used as an office. ■ Designated as Green Belt. 	<p>Nature conservation:</p> <ul style="list-style-type: none"> ■ Cotteril Clough SSSI is to be unaffected by the proposals. The SSSI has been identified as being in unfavourable condition. As part of the approach to the development of Area A, the SSSI will be protected and managed, along with additional buffer woodland planting along the SSSI boundaries. ■ The management of the existing woodland would follow the same principles established as part of the LHMP. ■ There would be a loss of a small section of the Cotteril Clough SBI and Ponds Near Runway SBI. However, as noted within the Need for Land document, this would be kept to an absolute minimum and through the full implementation of mitigation measures as well as the use of positive management measures established as part of the LHMP, the Airport would ensure that the ecological effects would be reduced as far as possible. <p>Species Mitigation:</p> <ul style="list-style-type: none"> ■ Appropriate survey (arboriculture, ponds, farmland birds, reptiles, badgers and bats) will be carried out ■ Creation of new habitat through watercourse enhancement, replacement planting of woodland and hedgerow, pond creation and the installation of bat roost and bird nest habitat. <p>Historic Environment Mitigation</p> <ul style="list-style-type: none"> ■ Cloughbank Farm listed building has already been substantially modified and therefore mitigation by recording is likely to be considered as acceptable. ■ The Site of Ringway Chapel and its graveyard would be retained and have an additional landscape buffer to protect its setting.
B	This site comprises approximately 33ha of land, approximately square in shape, bounded by the B5166 (Styal Road)/Trenchard Drive to the east, Ringway Road to the south, Shadowmoss Road to the west and the Ringway Trading Estate to the north.	Comprises: <ul style="list-style-type: none"> ■ Phased surface car parking with access to Ringway Road and Styal Road ■ Landscape mitigation, most significantly to the south adjacent to Ringway Road ■ Retention of runway approach lights and safeguarded corridor for future Metrolink route that passes to the west of the site 	- Phase One Car Parking Complete. - Enabling works for Phase Two.	- Phase Two Complete. - Enabling works for Phase Three.	- Phase Three Complete.	<p>Nature conservation features include:</p> <ul style="list-style-type: none"> ■ The site has no statutory ecological designations. <p>Historic Environment</p> <ul style="list-style-type: none"> ■ The site has no historic environment designations. There are two sites listed within the HER; however, both are situated outside the developable footprint. <p>Potential protected species include:</p> <ul style="list-style-type: none"> ■ great-created newts, ■ bats, ■ common toad ■ breeding birds. <ul style="list-style-type: none"> ■ Land to the west, along the site boundary, is safeguarded for the future expansion of the Metrolink. ■ The site is within an area designated as Green Belt. 	<p>Nature conservation:</p> <ul style="list-style-type: none"> ■ The site has little ecological or historic environmental interest. ■ The appearance of the car parking would be mitigated by the proposed landscape buffer <p>Species Mitigation:</p> <ul style="list-style-type: none"> ■ Appropriate surveys (arboricultural, ponds, farmland birds, reptiles, badgers and bats) and relocation will be carried out <p>Additional mitigation will include</p> <ul style="list-style-type: none"> ■ Careful designing of the layout to retain and reinforce existing tree and hedge lines ■ Planting of fast growing tree belt along the western perimeter ■ Denser and more diverse structure planting ■ Landscaping scheme combining hard and soft landscaping to create an attractive setting <p>Historic Environment</p> <ul style="list-style-type: none"> ■ The setting of historic environment features would be protected by the landscape mitigation buffer zone.
C	This site comprises approximately 18ha of land, approximately rectangular in shape, bounded by the M56 motorway to the west, the urban boundary of Wythenshawe to the north/east, a hedgerow boundary to Woodhouse Park to the east and Ringway Road serving as the slip road from the Airport to Junction 5 of the M56 (M56 bound), to the south.	Comprises commercial operational development to include: <ul style="list-style-type: none"> ■ Airline offices ■ Freight ■ Hotel Retention of allotments on-site or their retention until latter phases of the site's development.	- Freight Forwarding Development.	Some Offices, Hotels and other facilities.	- Development Complete	<p>Nature conservation features include:</p> <ul style="list-style-type: none"> ■ The site has no statutory ecological or historic environment designations and no sites listed within the HER. ■ Land Use features include the Little Flyers Nursery and Allotments. 	<p>Nature conservation:</p> <ul style="list-style-type: none"> ■ The site has little ecological or historic environmental interest. <p>Mitigation would be provided in the form of:</p> <ul style="list-style-type: none"> ■ a high quality landscaping scheme, reflecting its location at the gateway to the Airport ■ Retention of embankment planting adjacent to the M56 and its spur roads ■ landscape scheme to the east would be designed to ensure the residential amenity of properties located within Woodhouse Park to the north. ■ The loss of the Little Flyers Nursery could be mitigated through relocation or reprovided in the existing area. ■ The allotments are to be retained (or could be relocated).

Operational Area Extension	Description	2030 Operational Uses Proposed	Phasing			Site Constraints Summary	Summary of Mitigation
			2015	2020	2030		
D	This site comprises approximately 9ha of land, rectangular in shape, bounded by railway line to the east, hedgerow to agricultural land to the south, Hollin Lane/Styal Road (B5166) to the south-west, Tedder Drive to the north-west, Ringway Road to the north-west and hedge/tree line to the north-east.	Comprises commercial operational development including <ul style="list-style-type: none"> Offices Hotels Other commercial facilities 	- No Development	- Some Offices, Hotel and Commercial Facilities complete.	- Development Complete	<p>Nature conservation features include:</p> <ul style="list-style-type: none"> The site has no statutory ecological or historic environment designations. <p>Historic Environment:</p> <ul style="list-style-type: none"> There are two sites listed within the HER; Smithy Farm, which is identified as being within the developable footprint to the west, Site of structures within Styal Road outside the developable footprint. <p>Potential protected species include:</p> <ul style="list-style-type: none"> Bats Reptiles Badger Invertebrates Breeding birds <ul style="list-style-type: none"> The site is within an area designated as Green Belt. 	<p>Nature conservation:</p> <ul style="list-style-type: none"> The site has little ecological or historic environmental interest. <p>Species Mitigation:</p> <ul style="list-style-type: none"> Appropriate surveys and relocation will be carried out <p>Historic Environment</p> <ul style="list-style-type: none"> The demolition of Smithy Farm, listed on the HER but attracting no statutory protection, will not be significantly detrimental. <p>Land identified for both the future implementation of:</p> <ul style="list-style-type: none"> SEMMMS road link (cutting through the centre-east and western areas); and Railway improvements to the chords <p>will be safeguarded and is therefore outside the developable footprint.</p>
E	This site comprises approximately 58ha of land, approximately square in shape, bounded by the A538 (Wilmslow Road) to the north-east/east, the M56 to the north-west/west, and field boundaries to the south.	Comprises combination of: <ul style="list-style-type: none"> Operational Uses Cargo Car parking. Includes for the construction of a new junction with the M56 (junction 6) The realignment of the A538 Old Wilmslow Road 	- Interim Development of Cargo	- Commencement of enabling works for realigned A583, car parking and Operational Uses	- Realigned A583, J6, Cargo, Car Parking and Operational Uses	<p>Nature conservation features include:</p> <ul style="list-style-type: none"> Sunbank Wood SBI (Grade A) <p>Potential protected species include</p> <ul style="list-style-type: none"> Great crested newt, badger, Common toad, Birds, Otter, Water vole Adder, Native bluebell. <p>Historic Environment:</p> <ul style="list-style-type: none"> There is one site listed within the HER, the 'site of Broad Oak Farm'. <ul style="list-style-type: none"> The site is within an area designated as Green Belt. 	<p>Nature conservation:</p> <ul style="list-style-type: none"> Sunbank Woods SBI and ancient woodland would be largely excluded from the developable footprint. <p>Species Mitigation:</p> <ul style="list-style-type: none"> Appropriate survey including arboricultural, water vole, riverine invertebrates, great crested newt, bat, farmland birds, amphibians and badgers will be carried out <p>Provision of similar habitats to the SBI within the landscape buffer and/or off-site within the LHMP including:</p> <ul style="list-style-type: none"> Replacement woodland/plantation of an appropriate native species Replacement hedgerow planting The retention/replacement of open watercourse (possibly in combination with a Sustainable Urban Drainage System) and Pond creation Careful design of the road realignment scheme to avoid impingement upon the SBI and control over construction would ensure impact are kept to a minimum. <p>Historic Environment</p> <ul style="list-style-type: none"> The 'site of Broad Oak Farm' has largely been redeveloped with post-war terraced residential dwellings (Oak Cottages).
F	This site comprises approximately 18ha of land, rectangular in shape (orientated north-east to south-west), bounded by existing Airport Operational Land to the south, east and west, and cutting through agricultural land to the north.	Comprises <ul style="list-style-type: none"> Airfield Retention of landscaping forming part of the Runway 2 Landscape Habitat Management Area over an extensive area of land surrounding the runway. 	- No Development	- Commencement of enabling works for Taxiway.	- Taxiway Complete.	<p>Nature Conservation:</p> <ul style="list-style-type: none"> There are two SBIs that encompass the majority of the site falling within Cheshire East Council's authority. <p>Potential protected species include:</p> <ul style="list-style-type: none"> Great crested newts Bats Otter Common toad Water vole Badger Breeding birds. <p>Historic Environment</p> <ul style="list-style-type: none"> There are no historic environment designations within the site. <ul style="list-style-type: none"> The site is within an area designated as both Green Belt (both MCC and CEC) and as an Area of Special County Value (CEC). 	<p>Nature conservation:</p> <ul style="list-style-type: none"> The SBIs within Area F are a small section of much larger SBIs located outside of the boundary of Area F. In comparison to the wider SBIs, the SBI within Area F has little specific ecological interest. The proposed development comprises a relatively minor northern extension to the existing airfield. The proposals incorporate the retention of landscaping forming part of the Runway 2 Landscape Habitat Management Area, covering an extensive area of land surrounding the runway. <p>Species Mitigation:</p> <ul style="list-style-type: none"> Appropriate surveys and relocation will be carried out <p>Historic Environment</p> <ul style="list-style-type: none"> The site has no historic interest

Environmental Information Addendum - Development Impacts and Mitigation

- Axis PED have appraised the impact of the development scenarios (pages 36 – 39) on each of the Operational Area extensions. The purpose of their study is to understand, at a strategic level, the potential environmental consequences of the Airport's expansion and assist the Airport in the process of decision-making on the most appropriate use of land. The study has concluded the following:

Operational Area Extension A is set within existing Airport context with the A538 Wilmslow Road forming a barrier at the western end of the site. Consequently, whilst there would be a notable change to the landscape, the significance of effect would be moderated by its proximity to existing airport buildings, lighting and activity. Cotteril Clough SSSI would remain unaffected. Moreover, as part of the approach to the development of Area A, the SSSI will be protected and managed, along with additional buffer woodland planting along the SSSI boundaries. There would be a small incursion into the Ponds Near Runway SBI and a section of Cotteril Clough SBI will be lost. However, through the full implementation of mitigation measures and the use of positive management measures established as part of the LHMP, the ecological effects could be reduced to slight adverse in the short-term. This can be reduced to negligible in the long term through the full implementation of additional mitigation comprising appropriate surveys and the creation of new habitat through translocation of ancient woodland soils, watercourse enhancement, replacement planting of woodland and hedgerow, pond creation and the installation of bat roost and bird nest habitat, accompanied with careful lighting design and control over construction. Cloughbank Farm listed building has already been substantially modified and therefore mitigation by recording is likely to be considered as acceptable. The Site of Ringway Chapel and its graveyard would be retained and have an additional landscape buffer to protect its setting. A few Airport owned residential properties would require demolition with tenants displaced. The loss of the Aviation Viewing Park would be mitigated by re-provision at an alternative site and footpath loss mitigated by diversions. Consequently, whilst there would be some adverse environmental effects arising from the proposals, the Axis study concludes that these could be mitigated to an acceptable level

Operational Area Extension B is set within an urban context in close proximity to the Airport's runway. The proposed surface car parking development would result in some effect on the landscape or residential/visual amenity of nearby receptors. This could however be mitigated through the proposed landscape buffer zone. Additional mitigation including careful layout to retain and reinforce existing tree and hedge lines, the planting of fast growing tree belt along the western perimeter, denser and more diverse structure planting and a landscaping scheme combining hard and soft landscaping to create an attractive setting would further lessen any impact. The site has little ecological or historic environmental interest. The setting of historic environment features would be protected by the landscape mitigation buffer zone. Consequently, the study concludes that the proposals at Site B would not give rise to any significant environmental adverse effects.

Operational Area Extension C comprises two relatively small sites on land to the north of Thorley Lane and land encapsulated by the Junction 5 slip road and M56 spur. Given the introduction of new buildings within an otherwise undeveloped site, there would be notable effects on the landscape and visual amenity. Mitigation would be provided in the form of a high quality landscaping scheme, reflecting its location at the gateway to the Airport, the retention of embankment planting adjacent to the M56 and its spur roads and ecological and landscape features where feasible, and site security. To the east the landscape scheme would be designed to ensure the residential amenity of properties located within Woodhouse Park to the north. Few ecological interest features were identified which were not capable of mitigation. Key effects on land use and recreation include the loss of the Little Flyers Nursery although this could be mitigated through

relocation. The allotments are to be retained (or could be relocated). Consequently, whilst there would be some adverse environmental effects arising from the proposals these could be mitigated to an acceptable level.

Operational Area Extension D is close to the north western end of the Airport's runways. The proposed development for commercial uses and hotel would result in only a slight change to the landscape. With relatively few sensitive receptors, the effects on visual amenity would also be slight. Features of ecological interest capable of being mitigated. The demolition of Smithy Farm, listed on the HER but attracting no statutory protection, is unlikely to be controversial. Development proposals would result in the demolition of a few residential properties with residents displaced. A single footpath passing through the site could be either accommodated in the development proposals or diverted. Consequently, the proposals at Site D would not give rise to any significant environmental adverse effects.

Operational Area Extension E is located adjacent to the M56 with limited direct connectivity to the Airport's current Operational Area. Proposals at Site E include for major alterations to the M56 junction 6 and the subsequent realignment of the A538 Wilmslow Road. The introduction of airport operations into this otherwise undeveloped agricultural land would result in a notable change to the landscape. This could, however, be mitigated by a new landscape buffer adjacent to the realigned A538 which would assist in forming a strong boundary to the open countryside to the west. Slight adverse impacts would be experienced by properties at Halebank to the west assuming retention of the existing Sunbank Woods as reinforced by the proposed landscape mitigation scheme. Sunbank Woods SBI and ancient woodland would be largely excluded from the developable footprint. Additional mitigation should include appropriate survey (arboricultural, water vole, riverine invertebrates, great crested newt, bat, farmland birds, amphibians and badgers). The subsequent provision of similar habitats to that lost from the SBI within the landscape buffer and/or off-site within the LHMP including replacement woodland/plantation of an appropriate native species, replacement hedgerow planting, the retention/replacement of open watercourse (possibly in combination with a Sustainable Urban Drainage System) and pond creation, accompanied with careful design of the road realignment scheme to avoid impingement upon the SBI and control over construction would serve to reduce the effects. Assuming the above mitigation, the effects on landscape and nature conservation could be reduced to negligible in the longer term. A few residential properties would be lost, including Oak Farm, Keepers Cottage and Oak Cottages. Up to five footpaths would require either closure or significant diversion with opportunities for mitigation limited by the nature of the development and need for site security. On balance, whilst there would be some adverse environmental effects arising from the proposals, however, these could generally be mitigated to an acceptable level.

Operational Area Extension F is immediately adjacent to Runway 23L-05R and directly connected to the Airport's existing Operational Area. Extension of this boundary would result in little noticeable effect on the landscape and only a slight effect on visual amenity. The site has little ecological interest and no historic interest. The proposals would result in the loss of a single residential property and disruption to the nearby Stock-in-Hey Farm off-site. Two footpaths would be affected their loss could be mitigated by alternative provision. Consequently, the proposals at Site F would not give rise to any significant environmental adverse effects.

- None of the identified extension sites attracts a designation of international or European importance, and only Site A has features of national importance.
- The environmental effects will need to be mitigated through the implementation of the additional measures, which Axis have identified in their appraisal. The mitigation measures are based on the Airport's approach to mitigation as set out within its Environment Plan (2007) and

within page 40 of this document and will be carried out in advance of development. They follow the principles established as part of the Second Runway's LHMP. The recommendations will be fully considered as plans to develop the proposed extensions are developed in detail.

- **Consequently Axis PED have concluded that, at a strategic environmental level, none of the identified sites attract such significant environmental baseline conditions so as to rule them out for consideration for future development.**