

Project Ark

Technical and commercial assessment of future
development options for RAF Northolt

1 February 2012

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1 February 2012

Dear [REDACTED]

Project Ark

In accordance with our contract dated 25 November 2011, we have prepared this report which outlines our findings in relation to the commercial options for the future development of RAF Northolt, working with Mott MacDonald as a subcontractor.

Purpose of our report and restrictions on its use

This report was prepared on your instructions solely for the purpose of the Ministry of Defence and should not be relied upon for any other purpose. Because others may seek to use it for different purposes, this report should not be quoted, referred to or shown to any other parties unless so required by court order or a regulatory authority, without our prior consent in writing. In carrying out our work and preparing our report, we have worked solely on the instructions of the Ministry of Defence and for the Ministry of Defence's purposes.

Our report may not have considered issues relevant to any third parties. Any use such third parties may choose to make of our report is entirely at their own risk and we shall have no responsibility whatsoever in relation to any such use. This report should not be provided to any third parties without our prior approval and without them recognising in writing that we assume no responsibility or liability whatsoever to them in respect of the contents of our deliverables.

Scope of our work

Our work in connection with this assignment is of a different nature to that of an audit. Our report to you is based on inquiries of, and discussions with, management. We have not sought to verify the accuracy of the data or the information and explanations provided by management.

Our work has been limited in scope and time and we stress that a more detailed review may reveal material issues that this review has not.

If you would like to clarify any aspect of this review or discuss other related matters then please do not hesitate to contact us.

Yours sincerely

[REDACTED]


[REDACTED]

Partner

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Contents

1. Executive Summary	1
1.1 Background.....	1
1.2 Response to the requirement.....	2
1.2.1 Requirement 1	2
1.2.2 Requirement 2	4
1.2.3 Requirement 3	4
1.2.4 Requirement 4	6
1.2.5 Requirement 5	6
1.2.6 Requirement 6	9
1.2.7 Requirement 7	10
1.2.8 Requirement 8	11
1.3 Methodology	13
1.4 Key assumptions underpinning the study.....	14
1.5 Key risks and considerations	14
1.6 Structure of the report.....	16
2. Setting the context.....	17
2.1.1 Background.....	17
2.1.2 Key policy issues	17
2.1.3 Overview of business/commercial aviation in the region	18
3. Technical assessment.....	22
3.1 Requirements to obtain a CAA licence.....	22
3.2 Costs associated with obtaining a CAA licence	24
3.3 Timeline for obtaining a CAA licence.....	24
3.4 Planning process required to obtain a CAA licence	26
4. Business models.....	27
4.1 Overview	27
4.1.1 Business models outline.....	27
4.1.2 The case for Option 2 - CAA licensed 50k commercial aircraft model	28
4.2 Option 1 – MOD 20k business jet model – MOD operated.....	28
4.2.1 Demand	28
4.2.2 Revenue and costs.....	28
4.2.3 Infrastructure requirements	29
4.3 Option 2 – CAA licensed 50k commercial aircraft model – Privately operated	29
4.3.1 Aircraft to use the site.....	29
4.3.2 Demand and forecast passenger throughput.....	29
4.3.3 Revenue and costs.....	30
4.3.4 Infrastructure required	31
4.4 Option 3 – MOD 50k commercial aircraft model – Privately operated	32
4.4.1 Aircraft, demand and forecast passenger throughput.....	32
4.4.2 Revenue and costs.....	32
4.4.3 Infrastructure required	33
4.5 Additional options identified	33
4.5.1 Short term lease with upfront monetisation	33
4.5.2 Short term lease with ongoing landing charges and tiered incentive sharing mechanism	33
4.5.3 Business jets increased movements	33
4.5.4 Option 1 transaction followed by Option 2 enhancement	34
4.5.5 No rental cost under private sector operator	34
4.6 Key risks and constraints	34
4.6.1 Air traffic control.....	34
4.6.2 Military use of the runway	34
4.6.3 Number of movements	35
4.6.4 Licensing requirement.....	35
4.6.5 Transfer of South-side operations to the private sector	36
4.7 Commercial implications & considerations	36
4.7.1 In line with current aviation policy	36
4.7.2 Wider economic benefit.....	36
4.7.3 Planning approvals.....	37
4.7.4 Requirement for clear Government support	37
4.7.5 [REDACTED]	37
4.8 Assessment of commercial structures	38
5. Realising value from future increase in activity	40
5.1 Introduction	40
5.2 Key considerations in structuring a claw back mechanism.....	40

5.2.1	Level of competition.....	40
5.2.2	Ability to identify specific and measurable triggers	40
5.2.3	Aligning incentives of both parties	41
5.2.4	Impact of claw back on upfront cash receipts	41
5.2.5	Delivery model adopted.....	41
5.2.6	Summary of key findings on claw back mechanisms.....	46
6.	Financial assessment of the business models.....	47
6.1	Methodology and assumptions	47
6.1.1	Methodology	47
6.1.2	Key assumptions	47
6.2	Indicative values	48
6.3	Risk considerations	49
6.4	Detailed analysis of Options.....	49
6.4.1	Overview	49
6.4.2	Option 1	50
6.4.3	Option 2	50
6.5	CSR impact.....	53
6.6	Benchmark comparison transactions.....	54
6.7	Analysis of alternative options.....	54
6.7.1	Short term lease with upfront monetisation	54
6.7.2	Short term lease with ongoing landing charges and tiered incentive sharing mechanism.....	54
6.7.3	Option 1 transaction followed by Option 2 enhancement	55
6.8	Summary.....	56
7.	Conclusions and recommendations	57
7.1	Summary of business models	57
7.1.1	Option 1 – MOD 20k Business Jet Model – MOD operated	57
7.1.2	Option 2 – CAA licensed 50k commercial aircraft model – Privately operated.....	57
7.1.3	Option 3 – MOD 50k commercial aircraft model – Privately operated	57
7.2		58
Appendix A	Detailed assumptions for financial analysis	
Appendix B	Precedent transactions	
Appendix C	Detailed assessment of commercial structures	
Appendix D	Mott MacDonald report – CAA Licence Compliance	
Appendix E	Mott MacDonald report – Estimates of passenger traffic, aircraft types and movements for a shortened runway and the existing runway	
Appendix F	Outputs from EY financial model	

1. Executive Summary

1.1 Background

The Ministry of Defence (MOD), as part of its ongoing Asset Management Programme, is seeking to explore the range of options for the future development of RAF Northolt (Northolt). One of the options being considered is the sale of the site and conversion into a civilian operated airport. MOD engaged the Ernst & Young (EY) and Mott MacDonald (MM) team to assess the business models that could be employed at Northolt and outline the commercial options available to MOD to deliver best Value for Money (VfM) for the Government.

EY and MM were previously engaged by MOD in April 2011 to undertake a high level assessment of four specific options. The report titled *Project Noah – Asset review of RAF Northolt*, dated 10 May 2011 (to be read separately) outlined the market opportunity, estimate demand and costs, and showed a range of possible cash receipts that the MOD could realise. The conditions of the *Project Noah* study are laid out in that report and should be considered in assessing the outputs of that report.

Following the completion of the *Project Noah* report, the MOD has commissioned this further study, *Project Ark*, which seeks to identify the optimal business model for conversion of the site into a civilian operated airport. This report, therefore considers a shorter list of options for operating the airfield with the best alignment to MOD's objectives. It is noted that although significantly bigger development options (to cater for 150,000 movements) were considered as part of the *Project Noah* work (see the options 4, 4B and 4C above), the scope of this study does not consider these options further. The assumption is that the MOD will retain the North-side of the site with 7,000 military movements per annum under all Options and the new commercial aviation development will be restricted to the South-side.

The following options are considered in this report:

- ▶ **Option 1 – MOD 20k Business Jet Model (MOD operated)** – this option is to increase the current business from 7,000 business jet movements to 20,000 per annum, but MOD retain the operations of the airfield. The RAF inform us that this would not have any military impact and would not impact the cost the MOD of running the airfield, but it is assumed that an additional hangar would be required.
- ▶ **Option 2 – CAA licensed 50k commercial aircraft model (Privately operated)** – the optimal business model for developing the site under a CAA licence is a commercial aviation operation with 50,750 commercial movements per year. In this model, the runway thresholds would be inset to increase obstacle clearances under the approach. Consequently, the landing distance for Runway 25 would be reduced to 1,354m. The aircraft type would be limited to turboprops and small jets carrying an average of 65 passengers per movement.
- ▶ **Option 3 – MOD 50k commercial aircraft model (Privately operated)** – the business model described under Option 2 could also be applied to a military owned and governed structure, but with new operator responsible for the operations of the airfield, hence operating without a CAA licence. This could allow the current runway length to be retained allowing more operations by larger aircraft carrying on average 75 passengers.

In developing this report, a further underlying consideration is the impact of the Comprehensive Spending Review (CSR) requirements for releasing cash receipts for the Government before the end of 2014. The cash impacts to the MOD of the options assessed are presented in terms of payments which are released within the CSR period and beyond the CSR period.

The *Project Ark* team have also considered additional options as part of the study including the option of a short-term lease with LCY (or alternative private sector business jet operator) with and without an incentivised revenue sharing mechanism, the option of significant

movement increase with only business jets, the option of swapping between business models and the option of an alternative structure of rental payment.

1.2 Response to the requirement

This report is structured to provide responses to the 8 requirements set out by the MOD in its scope of work. The following summarises the response to the 8 requirements, based on the findings of this report:

1.2.1 Requirement 1

“What specific work would need to be undertaken to enable RAF Northolt to attain an International Civil Aviation Organisation (ICAO) licence in accordance with Annex 14 standards and Civil Aviation Policy 168 requirements? This should include consideration of innovative solutions and evidence of where derogations might be sought to overcome constraints (for instance based on operations at other airfields or airports).”

MM's main conclusions are that there are a number of differences to the Licensing (or Certification) requirements that could be corrected in a relatively straight-forward manner. However, the proximity of the existing runway to the site boundary at each end:

- ▶ Prevents the development of the required runway strip and runway end safety areas.
- ▶ Results in a substantial number of obstacles infringing the obstacle limitation surfaces (OLS) on the approach, departure and to the runway sides, some by significant amounts.
- ▶ Results in aircraft crossing the public roads just outside the boundary at a very low height.

The obstacle environment is significantly worse at the east end, than at the west end of the runway. The traffic lights on West End Road are not effective as some drivers disobey them and congestion tailing back from adjacent traffic light controlled junctions means that vehicles may not be able to clear the area.

MM consider the extent of these non-compliance issues to be sufficient to state that the aerodrome could not be licensed in its current form. That conclusion would apply with the existing operations and is not related to whether or not the aerodrome was to be developed as an airport.

For the same reason, MM also consider the existing runway configuration unsuitable for airline operations even if it remains a Government Aerodrome.

In order to achieve a Licence (or a Certificate), these prime issues would need to be addressed. Some of the obstacles, such as lamp posts, aerials and trees could be lowered or removed. A considerable number of buildings penetrate the existing Optical Landing System (OLS) and some are have listed building protection. It would be impractical, or not permitted and certainly very costly to remove all of these. If necessary, it might be possible to remove a small number of buildings that are significant obstacles. However, even in combination, these do not resolve the infringement issue.

It is necessary to raise the OLS at each end and re-assess the approach and departure procedures (by reference to the provisions of ICAO PANS-OPS¹). This would be achieved by inseting the start and end points of those parts of the runway that are used for take-off or landing and in each direction. The effect of such changes would to reduce the runway distances declared for landing and take-off. Of course, if these were reduced by too great an extent, then the runway would no longer be suitable for its intended uses. Indeed, any

¹ Regulations as declared under the The International Civil Aviation Organisation's (ICAO) Procedures for Air Navigation Services (PANS) – aircraft operations.

reduction would have some impact on operations that take place at Northolt today and in particular, those which require the full use of the distances available.

A detailed design or consultation with the CAA on suitable changes has not been part of the scope of this study. However MM have undertaken some detailed studies to indicate that inseting the thresholds (the start of the landing distances) by 240m from the east end of the pavement (for westbound approaches) and 214m from the west end of the pavement (for eastbound approaches) will considerably improve the obstacle environment. That is not to state that there will no longer be any infringements of the new OLS. However there will be fewer infringements and they will be reduced in their amount. In addition, MM have assessed the Runway 25 3.5° glideslope approach in relation to a 2.8% approach OLS, the Runway 07 departure against a 2.8% OLS and the Runway 25 Cat 1 ILS approach in relation to the ICAO Obstacle Assessment Surface (OAS) for Code C² aircraft.

This proposed shortened runway would also more than double the height of aircraft as they pass over West End Road on the Runway 25 approach. Reliance on the existing traffic control lights ceases and these could then be removed.

Some infringements remain, but these are small in number and extent. Those penetrations would be taken into account to adjust the minimum decision heights for aircraft on the approach. MM anticipate that such adjustments would result in acceptable decision heights that would not significantly reduce the availability of the runway when the visibility conditions are reduced (and indeed it may improve runway availability in comparison with the existing runway arrangement).

The resulting declared distances are tabulated below. These would be slightly more than those presently available at London City Airport and quite useable for civil airliners on regional routes.

	Runway	TORA	TODA	ASDA	LDA
Existing	07	1684	1768	1684	1592
	25	1687	1701	1687	1684
Proposed	07	1444	1504	1649	1435
	25	1526	1586	1594	1354

The shortened runway may no longer be suitable for some existing business jet operators. No consultation with NetJets or any other business jet users has taken place.

MM have asked the MOD to review the impact of the shorter runway on military operations. This is work that is in hand, but at the time of writing no response had been received.

MM have some concerns regarding tailwind operations, particularly in relation to landing on Runway 25. The required landing and take-off distances can increase significantly in tail-wind conditions. These do not occur at London City, but would have to at Northolt, due to the need to operate in the same direction as the Heathrow runways. Heathrow operations have a westerly bias for environmental reasons and due to the long runways available, Heathrow can readily accommodate tail-wind operations.

It will still also be necessary to provide arrestor beds at each end of the runway and improve the under-shoot RESA provision. MM are of the opinion that the above proposals to shorten the runway were applied, then the CAA may accept the existing arrestor beds as being adequate for the existing traffic volumes and types. However, if commercial airliners were to

² Code C aircraft are those with a wingspan of less than 36m and apply to all but one narrow bodied type

operate in the numbers being considered, then MM anticipate that the CAA would want the existing lightweight aggregate arrestor beds to be replaced with EMAS³ arrestor beds.

These beds would then provide a predictable aircraft stopping performance that does minimal damage to an overrunning aircraft and protects the passengers, crew and the general public on the highways outside of the airport boundary.

MM have completed a technical assessment of the existing runway and infrastructure at RAF Northolt and what would need to be done to obtain a CAA licence, the full standalone report is available in Appendix D.

1.2.2 Requirement 2

"What would be the estimated cost?"

The total capital cost of the development required to achieve a CAA licence for the Option 2 model is [REDACTED]. In EY/MM's view the planning process would be most beneficially structured in two phases:

- ▶ Phase 1 – a CAA licence is achieved for the current operations with the business jet movements increased from the self imposed cap of 7,000 to 20,000 movements with construction of new hangarage. This could be done quite quickly and at a relatively low cost [REDACTED] for licence requirements and [REDACTED] for planning and construction of hangar). Achieving this licence would make the asset more attractive to buyers and could provide greater comfort to investors for Phase 2 developments.
- ▶ Phase 2 – a CAA licence is achieved for the business model described as Option 2, which is a model similar to London City, carrying regional and short haul European turboprops and small jets. This capex cost totals [REDACTED].
- ▶ Phase 3 – this is optional, and in MM's view not a requirement for the CAA licence. However the RAF have stated that they would like further changes to the infrastructure to be made at the airfield to improve operational capability. The total of the capital costs of these options is [REDACTED].

Further details are included Section 3 and attached at Appendix D.

1.2.3 Requirement 3

"How long would it take to complete the work?"

The EY/MM team propose that the development of the site is phased so to spread the cost, meet build up of demand and match the proposed deal structure, the following two phased approach for development is recommended:

- a. The first phase would involve obtaining a CAA licence under the existing business jets model thereby not requiring a large amount of capital expenditure now (i.e. updates not required to arrestor beds, terminal, lighting, etc) hence returning a reasonable amount of value from the transaction upfront. This first phase of capex is forecast as [REDACTED] that would be incurred over the first two years, on top of the [REDACTED] cost for additional hangars.
- b. The second phase would involve the construction of infrastructure associated with increasing throughput at the airport to include commercial passenger aircraft. This would include the construction of a passenger terminal, improvement of arrestor beds, lighting, ATC, other associated infrastructure and new Code D aircraft apron, totalling [REDACTED]. It is assumed that it would take between 3-5 years to obtain planning permissions so depending on when this was commenced by the new

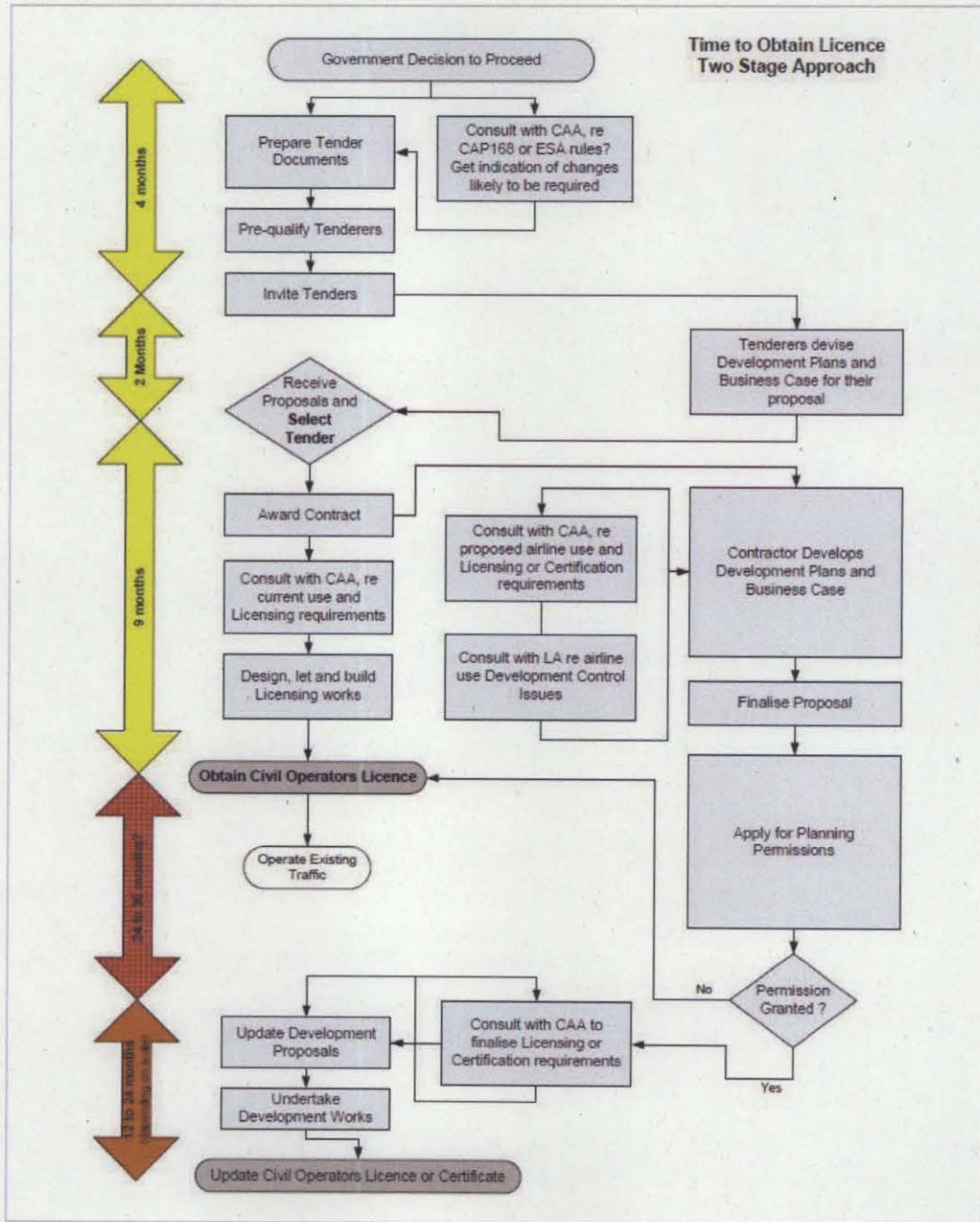
³ EMAS is an Engineered Material Arresting System developed in the USA and comprising of crushable concrete blocks

operator, it is assumed that construction commences in 2017 with operations commencing in 2019.

The proposed timetable for obtaining a Civil Operators Licence is outlined in the diagram below:

Figure 1: Two stage planning process

Source: Mott MacDonald



1.2.4 Requirement 4

"What consultations and planning permissions (including if necessary obtaining legal opinion on existing and transferrable rights and permissions) would be required to convert Northolt into a civilian airfield?"

Any development at Northolt will require planning consents which would be done through submission of detailed planning submission to the local planning authority (in this case Hillingdon Council) and would need to include a full Environmental Impact Assessment (EIA). MOD has sought a formal legal Counsel opinion regarding the requirement of planning approvals in a development scenario. Although Counsel has not provided a formal response (Counsel states that the questions did not provide sufficient information), it is unequivocal in its advice that the MOD cannot fast-track through the planning process and that any development or change of use would require planning permissions to the local authority. Therefore planning and the risk of not obtaining the relevant approvals will be a key concern of investors, thereby reducing value of the asset.

The following areas have been identified as requiring consultations and permissions, if Northolt were to be used as a civilian airfield:

- ▶ Provision of additional facilities to handle airline passengers will require appropriate aircraft, passenger and baggage handling facilities and open public access to the south side of the aerodrome. Such facilities would generally be new and those that are relevant to licensing would be built accordingly. However, these facilities would require planning permission which can be sought using a conventional application to the Local Planning Authority.
- ▶ The RAF also stated that a number of facilities located to the north of the runway may need to be relocated to the south and some military facilities to the south located to the north or moved off-site. These include the fire station, fire training ground and ATC control tower. In assessing the aerodrome against licensing requirements, some upgrades of these facilities may be required, but there is no specific need to move these.
- ▶ In response to an application for a Licence for Northolt, MM would expect the CAA to consider this as being an existing operating aerodrome and to review all aspects and identify any areas that do not comply with its requirements. The CAA would then request that the operator bring those facilities into compliance with the provisions of CAP168, or to demonstrate a safety case for retaining the existing situation, or some modification thereof.
- ▶ In order to convert the airport into a civilian airfield with increased capacity new aprons, taxiways, lighting systems and road connections will be required. Accompanying an application to the Local Planning Authority the following documents will also be required: an Application Form, Plans, Consultation Statement, Design and Access Statement, Planning, Environmental Statement (including noise assessment), Surface Access Strategy and Sustainability Strategy.

It is recommended that a formal legal opinion is obtained in relation to planning requirements of the preferred option.

MM have completed a technical assessment of the existing runway and infrastructure at Northolt and what would need to be done to obtain a CAA licence. This includes permissions and consultations that would need to be sought, further details are in the standalone report is available in Appendix D.

1.2.5 Requirement 5

"What are the realistic business models that a civilian operator might adopt, and the commercial options for use of the site as a civilian operated airfield that Government could pursue? This analysis would include options for the commercial terms of MOD's continuing assured access to the runway."

On the basis of EY's analysis in this report, the following business models options are considered to be the realistic options that a civilian operator would adopt based on the restrictions of the site:

- ▶ **Option 1 – MOD 20k Business Jet Model (MOD operated)** – sale of the jet centre business with a continuation of current business plus an uplift in business jet movements from 7,000 to 20,000, with the MOD retaining the existing 7,000 military movements. The operation of the site would be retained by the MOD. This option does not maximise the value of the site but provides an option to release a cash receipt for the MOD in the event that the development Options 2 and 3 are not deemed acceptable/preferable by Ministers.
- ▶ **Option 2 – CAA licensed 50k commercial aircraft model (Privately operated)** – the development of the site into a commercial airport under a CAA licence. The business model would be similar in terms of aircraft type to the current London City Airport operations, with turboprops and small jets used to service UK regional and short-haul European regional flights with an average of 65 passengers. This option would also assume transferring the existing business to a single private party for planning, development and operations. This allows the option of a cash receipt to be realised upfront on the basis of the existing business, with potentially further receipts on achievement of planning consent for the commercial airport development. The MOD would therefore become a customer of the airport and buy an allocation of slots as required. This model is outlined in more detail in Section 4.3 of this report and represents EY's view as to the model which maximises potential value from a CAA licensed airport approach.
- ▶ **Option 3 – MOD 50k commercial aircraft model (Privately operated)** – the development of the site to accommodate commercial aircraft under a military owned airport model. The business model under this option is similar to Option 2 in terms of the type of business model, however the absence of a CAA licence allows larger aircraft to land due to the absence of the runway restrictions in the CAA option (Option 2). This therefore increases the potential revenue which can be generated from the site, however this revenue stream is at greater risk as it relies on airlines being willing to use an unlicensed airport. The development costs for Option 3 are forecast to be marginally higher than Option 2, due to a larger terminal building required for the higher number of passengers, although this is offset against the cost saving from the absence of the CAA license requirements. As per Option 2 this option would also assume the transfer of the existing business to a single private party for planning, development stage and operations. This allows the option of a cash receipt to be realised upfront on the basis of the existing business, with potentially further receipts on achievement of planning consent for the commercial airport development. The MOD would therefore become a customer of the airport and buy an allocation of slots as required. This model is outlined in more detail in Section 4.4 of this report and represents the benchmark model which maximises potential value from a military airport model, against which Option 2 is assessed.

It is noted that the civilian operator model (Option 2) is likely to be more attractive to the market, given the benefits it has in securing a more secure revenue stream than the non-CAA licensed options – MM believe that airlines would be unlikely to accept the safety risk. These models could be less attractive for investors and operators seeking a typical airport risk profile. Similarly the market appetite for the sale of the Jet Centre business under Option 1 could be limited given the strength of the incumbent operator's position in any sales process. This could restrict potential bidders under Option 1 and adversely affect the value achieved given any lack of competition.

In terms of viability – Options 1 and 2 are technically and commercially viable. MM advise that under Option 1 improvements to the obstacle environment, regardless of licensing or provision of scheduled services, may be advisable. Option 3 is less viable as there is a risk associated with the revenues as airlines may not choose to operate at an unlicensed airport. This requires market testing, however due to the safety issues and reputational and political

risk associated in the event of an accident, MM do not consider Option 3 to be a realistic or viable solution.

The MOD could consider the following commercial structures for these business models:

- ▶ **A joint venture (JV)** – A developer/operator partner is engaged now to use the facility partly and begin development. The MOD continues military operations, potentially assisted by the partner for a fee. Both parties share in the risk and returns from the development. A JV is delivered through both parties 'buying in' to the equity of the JV, with the MOD investing the value of the site and the JV partner investing (either through investment into the asset or cash payment to MOD) into the agreement. The amount invested by each party will determine the percentage share holding in the JV. This would determine the level of any future investment required from both parties as well as returns/dividends receivable.
- ▶ **Short terms lease** – The MOD retain ownership of the site and let a short term lease for a private sector party to operate the site. The key issue for MOD under this option is that there is no incentive for the lessor to invest in the infrastructure.
- ▶ **Concession** – The MOD retain ownership of the site and let a long term concession for development and operations of the site, with a payment made upfront to reflect the value of the existing business. Further payments could be agreed based on future revenue increases at the site following planning consents. This is viewed as the optimal structure for meeting the MOD's objectives.
- ▶ **Share Sale** – A straight sale of the site in its current form where the MOD relinquishes all control of the Northolt site in return for a payment from a buyer and, as for a short term lease or concession, the MOD would become a customer of the new operator.

All of these commercial options could be structured to ensure the continued access to the runway for the MOD, however this would potentially erode value as higher revenues may be achieved by bringing planes with more passengers under private ownership. The structure of the MOD use could be done by paying per use as a regular customer or could be structured under a lease which allows a set cap of movements per annum under the terms of the lease.

The models were assessed against a set of commercial objectives agreed with the MOD at the Project Board meeting on the 11 January 2012. The results of this assessment are as follows:

	JV	Short-term lease	Concession	Share sale
1. Release value in the short term (i.e. during CSR period)	✓	✓	✓	✓
2. Structure business model to enhance market appeal and value	✓✓	x	✓✓	✓✓
3. Maximise whole life value to MOD, including clawback of value from future increased activity	✓✓	x	✓✓	x
4. Minimise capital investment required	x	x	✓✓✓	✓✓✓
5. Assured continued military use	✓✓	✓✓✓	✓✓✓	x

	JV	Short-term lease	Concession	Share sale
Total score	7	4	11	6
Rank	2	4	1	3

The concession is recommended as the as the optimal structure for meeting the MOD's objectives, as it can be structured to allow an upfront payment (on account of the Option 1 business) with the opportunity to benefit from future increases in revenue following the achievement of planning consents (under either Option 2 or Option 3).

1.2.6 Requirement 6

"How would MOD realise value from a future increase in activity at RAF Northolt under a civilian operator?"

Structures which attempt to realise value or "claw back" revenue from future increases in activity are unlikely to deliver VfM on a share sale basis. It is easier to structure mechanisms to share in future profits from the development where the MOD retains a stake through either a JV or concession arrangement.

In EY's view the optimal outcome is where a long term concession is structured which allows the MOD to receive a cash receipt reflective of the value of the existing business (7,000 military and 20,000 business jet movements) upfront – based on EY's financial analysis this could be in the range of [REDACTED]. The developer is required to deliver the planning consents required to develop the site and achieve the required license. At this point, MOD has the ability to "step in" to the concession and renegotiate an uplift in the concession fee reflective of the enhanced future revenue potential as a result of the planning approvals. This could be structured either as a one-off payment or an annual concession fee, potentially linked to passenger volumes or similar indicator. Based on EY's financial analysis this additional payment could be in the range of [REDACTED] depending on the pricing model achievable. Should the MOD not feel that a VfM outcome was achieved through negotiations, they could seek to terminate the agreement and re-let the concession with the planning consent.

The concessionaire would be incentivised to obtain planning permission by the opportunity for them to make an increased return from the commercial operations (higher passenger numbers and increased margin). The private sector operator will have the first right of refusal to retain the concession under the larger development hence being incentivised to obtain planning permissions and agree a renegotiated deal for a long term concession with significant growth potential.

The key considerations for the MOD in structuring a claw back mechanism are as follows:

- ▶ The value for any mechanism will be maximised where the MOD is able to attract significant competition for the asset. This will provide leverage to negotiate the optimal outcome.
- ▶ The key trigger to value will be the successful achievement of planning approval. It is unlikely that any agreement will be able to be negotiated on what this triggers in terms of a price. This will most likely be negotiated with the private party on achieving planning approval. The MOD would need the ability to terminate at this point, in the event that it felt the negotiations were not delivering a VfM outcome. The termination costs could then be netted off against any future payment received from the new concession payment.

- ▶ The sharing mechanism needs to be structured to retain the incentive to improve performance, so that the quantum of claw back is reasonable and that the indicator considers all of the costs that the operator incurs, e.g. IRR rather than revenue.
- ▶ Any claw back mechanism needs to be considered in light of the impact on the upfront payment and hence the overall VfM for the MOD. It may be conservative to exclude a claw back mechanism from the VfM analysis where the risks around the claw back payments are significant.

1.2.7 Requirement 7

"How could a deal be structured?"

- ▶ In order to maximise the value of the site, under the development options (Options 2 and 3), it will be vital to position the airport based on its prime location next to Heathrow (to target the connectivity of regional airports to Heathrow) and near to central London (to act as a destination airport for business travellers for west and central London). If this is positioned properly, the value of the asset can be maximised by achieving a premium on airport fees as London City has been able to achieve. This will be subject to the following:
 - ▶ Obtaining buy in from NATS, DfT and other stakeholders for the development.
 - ▶ Achieving the necessary planning approvals.
 - ▶ The market conditions at the time the transaction occurs and market appetite for the transaction.
 - ▶ The ability to sell the concept to the major business carriers.
- ▶ In order to achieve the best value for the site, the deal structure must be taken to the market in a way which attracts the greatest competition. It is recommended that a full market sounding process has been undertaken prior to taking the project to market. Subject to the market sounding exercise, the recommended approach to structuring the deal is as follows:
 - ▶ Step 1 – a long term lease is structured to generate a cash receipt on the basis of the maximisation of the existing business option. This could include the benefit of increasing the movements from 7,000 to 20,000 and driving down the costs of running the existing facilities by a private party (based on discussions with the market, this could be up to 30% if they were to take over the running of the existing airport operations).
 - ▶ Step 2 – the lessee is incentivised to achieve the planning required to develop the commercial airport facilities via a condition which entitles them to first right of refusal on the expansion of the cap to 50,750 commercial movements under a commercial aviation option.
 - ▶ Step 3 – on achievement of planning approval, the MOD has a right to step in and renegotiate the concession fee on the basis of an increase from 20,000 to 50,750 movements. The uplift in value would also reflect the increase in passenger throughput on the existing 20,000 movements as a result of the move from business jet to commercial aircraft and respective increase of margin.
 - ▶ Step 4 – the MOD receives a payment to reflect the uplift in value for the site following planning approvals.

1.2.8 Requirement 8

“So that MOD can be sure that it is pursuing the deal that offers best value for money for the taxpayer, a benchmark option should be developed demonstrating how MOD could maximise the commercial revenues from RAF Northolt under the current ownership arrangements.”

An assessment of the indicative value of the Northolt site has been completed based on the business models and suggested commercial structures described in Section 4. For Option 2 and 3, the value is generated from 3 sources:

- ▶ **Upfront cash realisation** (Options 1, 2 and 3) – equivalent to the discounted future cashflows of the increased business jet movements. Under Option 2 and 3, the assumed profit margin is that of a private sector operator whereas under Option 1 the margin is significantly higher as the MOD will continue to bear the cost of operating the military operations. The value will be realised in the CSR period.
- ▶ **Second cash realisation from clawback** (Options 2 and 3) – represents the discounted future cashflows of the commercial passenger operations under a private sector operator. The uplift in value is net of the present value of the cashflows generated from the business jet operations i.e. the cashflows included in the calculation of the upfront cash realisation of Option 1 and 2. The second cash realisation is realised after the CSR period and could be structured either as an upfront payment or ongoing concession fee.
- ▶ **MOD transferred cost** (Options 2 and 3) – the MOD currently bears the cost of operating the military operations at Northolt site. Therefore, under the scenario of a private sector operator completing the South-side operations, there will be a significant saving associated with the transfer of this cost to the private sector. The calculation of the transferred cost is provided in Appendix A.
- ▶ **Terminal value** (Options 1, 2 and 3) – represents the value of the airport following the development once it is transferred back to the MOD at the end of the agreed contract term.

All the analysis of the options assumes a long term concession structure with further payment following planning consent for Option 2 and 3.

For Option 1 the cost associated with running the South-side operations remains with the MOD. Therefore, to make the scenarios comparable under Option 2 and 3 the savings that would be achievable from the MOD transferred costs have been separately identified. Based on the assumptions detailed in Appendix A and the resulting cashflows, the range of net present values for Northolt under the 3 business models are shown below.:

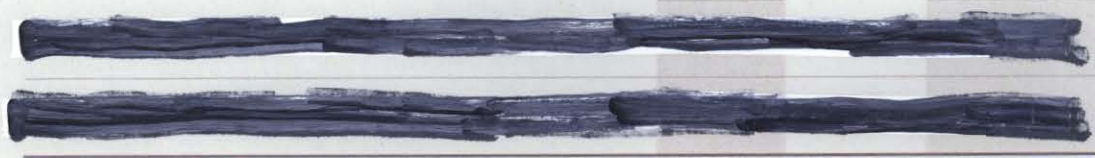
- ▶ Option 1 – MOD 20k business jet model – MOD operated
- ▶ Option 2 – CAA licensed 50k commercial aircraft model – Privately operated
- ▶ Option 3 – MOD 50k commercial aircraft model – Privately operated

In relation to Option 2, there is a significant opportunity to make Northolt into a London City type model obtaining higher charges from its users due to its location inside the M25, easy links to central London and proximity to Heathrow. Therefore, should the concessionaire be able to increase charges to a level closer to that of London City then this would increase the value, and hence return, to MOD. Assuming charges per passenger of £24.87 then the implication on Option 2 is shown below.

⁴ The MoD transferred costs are discounted at 3.5%.

⁵ Option 1 and Option 2 are discounted at 8%, 9% and 10% for the Low, Mid and High discount rates. Option 3 is discounted at 9%, 10% and 11% due to the greater level of risk. All discount rates are calculated on a market based WACC.

⁶ The MoD transferred costs are discounted at 3.5%.



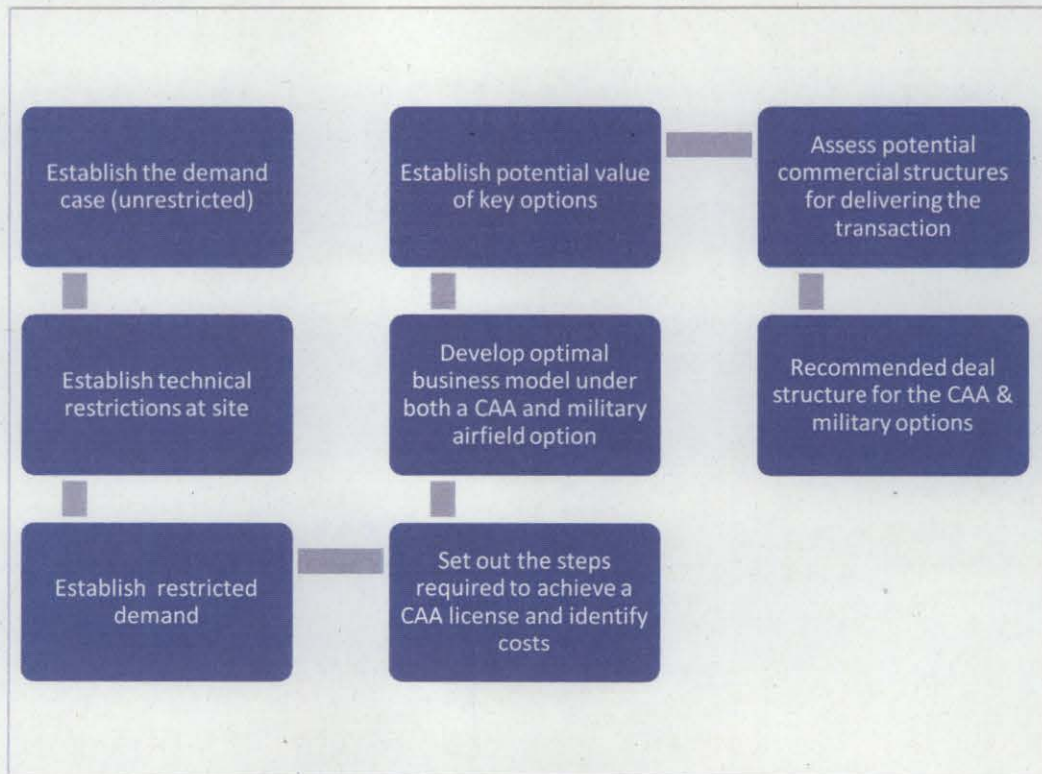
The financial analysis suggests that value can be created for the MOD through a civilian operated CAA licensed airport model (Option 2). In EY's view this value could be maximised by positioning the deal in a way which provides a West London equivalent to London City Airport, increasing value by c.47-50%. Given the location, the airport could gain a premium if positioned as a connection for the regions to Heathrow and as a destination for business travellers for West London, the City and the Thames Valley.

1.3 Methodology

In developing the responses to the requirements as outlined above, the following methodology has been followed:

Figure 2: Project Ark methodology

Source: EY analysis



In undertaking the methodology outlined above the following points have been relied upon:

- ▶ The underlying assumptions for the demand and capacity are provided by MM, engaged by EY as a subcontractor for this purpose. Industry benchmarks have been used for calculating revenues and profits using EY's experience of other airports, publicly available data and inputs from MM. Some benchmarks have been taken from the *Project Noah* report to ensure consistency.
- ▶ Estimated capital expenditure is based on estimates and assumptions provided by MM in order to bring the airport up to specification to achieve the CAA license and to deal

with the number of forecast movements and the number of passengers under each of the options.

- ▶ Interviews have been conducted with MOD and RAF personnel and with the London City team who operate the Jet Centre. Some of the information gained from these discussions has been used as assumptions in EY's analysis.
- ▶ There has been no engagement with other key stakeholders such as NATS, CAA, Hillingdon Council or potential investors – these will be essential prior to launching any transaction and fine tuning the structure.

1.4 Key assumptions underpinning the study

A number of key assumptions have been made in delivering this report, based on the scope of work set by the MOD and by discussions with MOD, RAF, Treasury and Shareholder Executive staff through the study period. These include the following:

- ▶ There is a desire to realise a cash receipt within the CSR period – this has been considered in structuring the commercial options.
- ▶ There is a desire from the MOD that it does not take development risk and invest significant additional capital – this has been considered in structuring the commercial options.
- ▶ The MOD are assumed to remain on the site under all of the options assessed. The sale or lease of the site to a private party would only include the South-side with the military remaining on the North-side. No costs have been included in the analysis for the relocation of the MOD's services other than as a sensitivity, the results of which are presented in Section 6.
- ▶ When calculating the value of the existing operations, EY have not been able to apportion any additional cost incurred by the MOD in providing the services (ATC, etc.) to the Jet Centre. This holds for both the current 7,000 movements and the assumed increase to 20,000 movements. This is based on discussions with Wing Commander [REDACTED] of RAF Northolt, who has stated that the services provided to the Jet Centre are provided by utilising down time in the existing labour and asset base, and hence do not add incremental cost to the MOD operations. As a result the value of the Jet Centre business under military operations is significantly higher than under private control due to the differential in the operating costs. This is in part offset by an assumption that under private control, the MOD becomes a customer of the new private operator and pays landing charges for the 7,000 military movements it uses. This is detailed further in Section 4.6.2.
- ▶ Throughout the report costs and benefits are discussed in relation to the MOD and do not specify the allocation of costs or benefits to the RAF budget allocation – EY has not sought to differentiate between costs or benefits of the MOD and the RAF.

1.5 Key risks and considerations

This analysis has been balanced by a high level assessment of the risks and constraints which exist in developing the site into a commercial airport and must be considered further in determining the way forward for the site. Key areas of risk which need to be considered include:

- ▶ **Airspace/NATS** – achieving a successful agreement with NATS on the ability to increase the usage of Northolt within the current airspace movements is critical to the success of any development at Northolt. Engagement with NATS is required to determine the deliverability of the options from an airspace capacity basis.

- ▶ **External transport links** – costs of additional infrastructure upgrades that may be necessary outside the site boundary (e.g. to the road network) have not been estimated. The impact on the surrounding transport network needs further consideration in terms of project cost.
- ▶ **Market appetite and market sounding** – the success of any transaction is contingent on strong competition for the asset. No market sounding has been undertaken to assess market appetite, therefore the appetite of airlines in using Northolt is un-tested at this point, as are the commercial structures described in this report. Any options should be properly market tested.
- ▶ **MOD transferred cost** – The MOD cost saving (under Option 2 and 3) is hard to forecast for the MOD/RAF due to the complex level of fixed/variable costs and interlinked costs with other parts of running the site – the RAF have provided high level cost saving assumptions for maintenance, running costs and personnel costs totalling [REDACTED] however these are deemed to be high level in nature and therefore the EY calculation, detailed in Appendix A, using industry benchmarks was deemed a better method for assessing the cost savings. The cost saving that could be achieved from private sector operations is a key driver to the overall realised value to MOD, therefore if the assumed cost savings are overstated (due to the inclusion of fixed costs) the overall value to MOD may be overstated.
- ▶ **Planning** – although this reports outlines the requirements from a planning perspective and the processes required to achieve planning, no formal legal advice has been obtained in relation to the achievability of the proposals in this report, other than the limited legal view provide from the MOD in relation to the impact of the usage at the airport on planning restrictions. No cost or consideration has been included in relation to compensation for disaffected stakeholders or similar.
- ▶ **MOD risk position** – the analysis suggests that one of the options which may offer the best value from the site is for the military to retain the ownership and control of the site under a military airport model. The MOD would need to consider the risks for them of such an approach in terms of their ongoing obligations for the site and potential stakeholder issues which may arise of the development. Equally the impact of existing operating and maintenance costs have not been fully considered as part of this study due to the lack of available information. Therefore the financial impact of options in this report may have to be adjusted to reflect these impacts.
- ▶ **DfT aviation policy** – the proposed option needs to be cognisant of the DfT aviation policy – engagement with the DfT would be required to determine the impacts on the surrounding airspace and wider transport network.
- ▶ **Legal opinion** – it is recommended that a formal legal opinion is obtained in relation to the likely planning issues which may arise as a result of the changes required at the site to deliver the Options 2 and 3.

1.6 Structure of the report

In following the methodology above, the report has been set out in accordance with the table below. The table identifies where each Requirement is addressed in the report.

Section No.	Sections – description	Requirements under the MOD - Scope of Work
2	Setting the context	-
3	Technical assessment	1,2,3,4
4	Business models	5
5	Realising value from future increase in activity	6
6	Financial assessment of the business models	8
7	Conclusion and recommendations	7

2. Setting the context

2.1.1 Background

In its most recent forecasts of August 2011, the The Department for Transport (DfT) forecast that passenger demand for flights in the South-East will exceed capacity by c.100 million passengers per annum (mppa) by 2030. This creates an opportunity for the development of Northolt to take advantage of this shortfall in capacity in the airspace and potentially release some cash for the site as part of the MOD's asset sales programme.

2.1.2 Key policy issues

Government policy

The Coalition Government rejected the new runway proposed at Heathrow and in doing so stood by its aviation policy that 'no new runways' are to be constructed in the South East of England and that airports should be 'better not bigger'.

Northolt is an existing runway in the London area and therefore the proposed business models discussed in Section 4 in theory comply with the Government's aviation policy of 'better not bigger' by enhancing existing infrastructure. However, any development of Northolt for commercial aviation will require endorsement not only from the MOD, but from other government agencies including the DfT and also will need to be considered with NATS in light of the airspace restrictions in the area.

Northolt has recently been subject to an increasing level of interest, demonstrated by:

- ▶ A paper on UK aviation policy in March 2011 by the Air League, specifically citing the important role that Northolt could play in UK air transport.
- ▶ An article in 'House' Magazine in April 2011 by the Chairman of the All Party Aviation Group calling for innovative ways to maintain the vital air links to the peripheral regions of the UK through better use of runway capacity and co-located runways.
- ▶ A debate on Northolt held in the House of Lords on 26 April 2011, led by Lords Spicer and Clinton-Davies.

As far back as 1998, the House of Commons Transport Select Committee's report on Regional Air Services recommended that Northolt should be developed as a reliever runway linked to Heathrow. The possibility of such a role for Northolt was also mentioned in the Future of Air Transport 2003 White Paper, though not pursued thereafter.

Government objectives

There are a number of key policy areas where the development of Northolt could contribute towards a range of Government objectives. These are:

- ▶ Regional and national economic development – the economic impact on peripheral UK regions resulting from reconnecting them to London could be significant, potentially relieving congestion in the South East of England by redistributing aspects of economic growth back to the regions. Additional capacity created in the London area would also strengthen the competitiveness on the UK and London at an international level.
- ▶ Defence requirement – the MOD requirements at the airfield could be retained in parallel with a commercial airport. For civil operations of up to 50,750 flights a year at Northolt it will not be necessary for the civil owner to occupy any land north and west of the runway, leaving all of the Model site and the military operations area on the north side intact.

- ▶ Transport links – the success of Northolt as a commercial airport is contingent on appropriate transport links being developed linking it to Heathrow and London. Initially, dedicated coach services to each terminal, requiring c.20 minutes off-peak but 30-40 minutes in peak periods (possibly more). This compares with the 60 to 90 minutes needed by the almost one million or so passengers making flight connections between Gatwick and Heathrow each year. With some changes being made to the existing heavy rail track between South Ruislip and Hanwell via Greenford, including electrification, it could be possible to link Heathrow Airport by direct rail to Northolt in approximately 15 minutes for the ten mile route. Detailed route evaluation and costings in relation to infrastructure links outwith the site have not been considered as part of the scope of this study. These upgrades may not be viable for the relatively small development being envisaged here, unless part of a larger regeneration programme such as the DLR extension to London City Airport and beyond.

CAA

On 10 January 2012, the UK Civil Aviation Authority (CAA) issued a press release advising the Government that a long-term Aviation Policy Framework is required that focuses on consumers, not airlines or airports, and allows capacity to develop sustainably. The CAA warned that without such a policy it is likely that prices will rise, route choice will drop and ultimately the UK economy will suffer.

The CAA states that a long term policy is required in order for the private sector to have sufficient confidence to invest in delivering additional capacity.

The CAA sets out five criteria which it feels any new capacity must meet to be effective:

- ▶ Overall be beneficial to the consumer.
- ▶ Be affordable and commercially viable.
- ▶ Be operationally feasible.
- ▶ Be integrated into the surface transport network.
- ▶ Be environmentally sustainable.

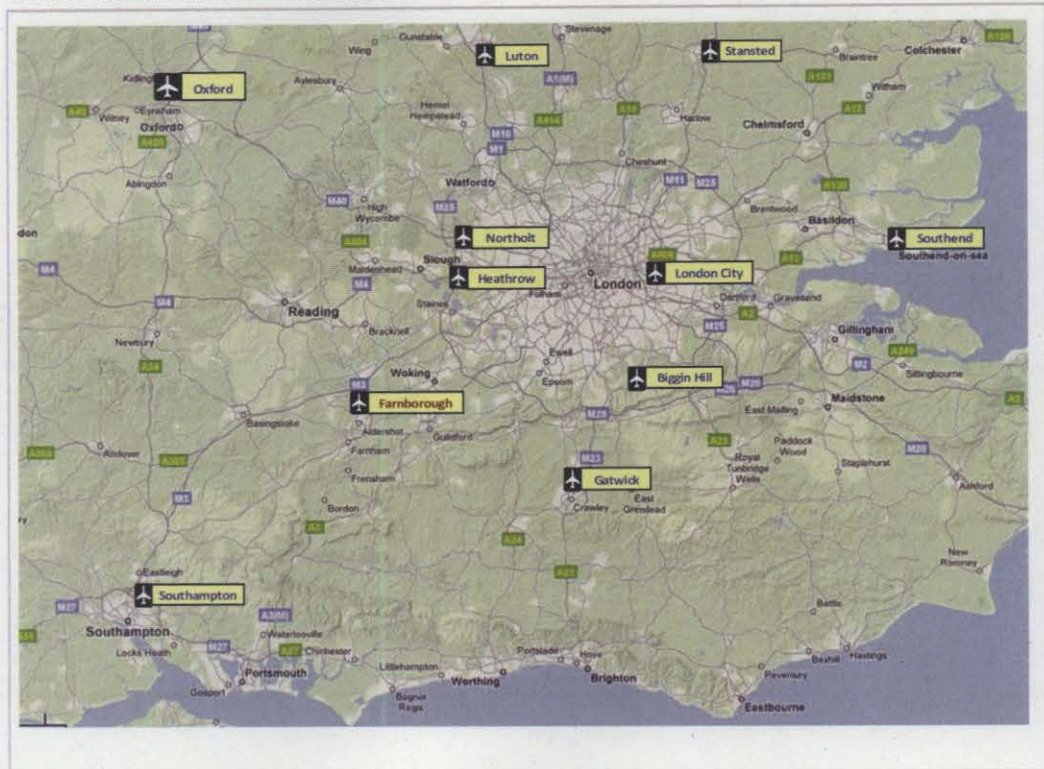
2.1.3 Overview of business/commercial aviation in the region

Business aviation

As indicated in the *Project Noah* report, there are eleven airports catering for business aviation flights in South East England, as shown in the map below. Of these, capacity is heavily constrained at all airports at Heathrow, Gatwick, Northolt and London City, and Luton is approaching capacity. There is spare capacity available at the peripheral airports, however these offer significantly inferior access to London and as a result are less attractive to business passengers.

Figure 3: Location of Northolt and major participants in the South East England business aviation market

Source: Mott MacDonald via Google maps

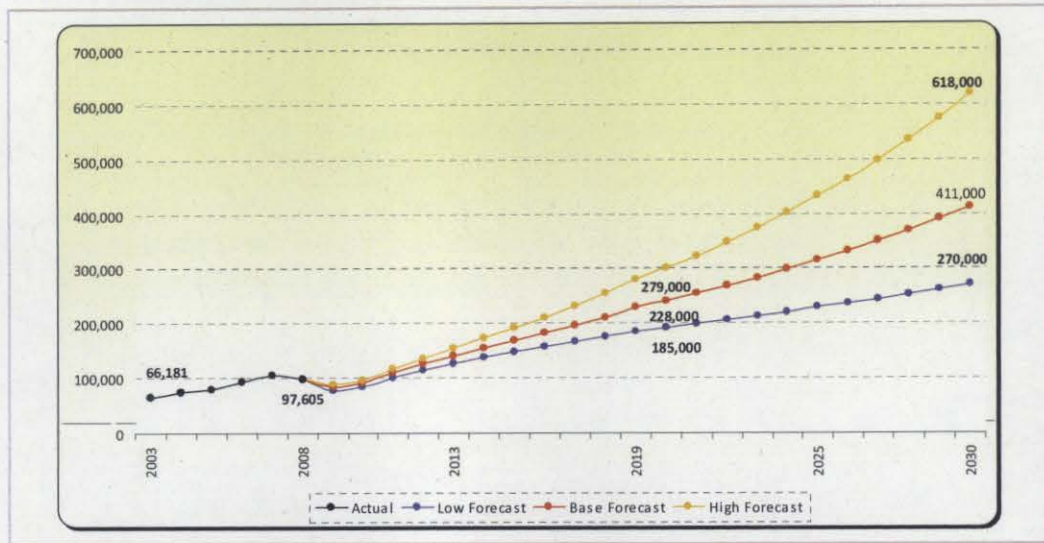


Northolt currently handles c.7,000 executive jet movements per annum, the maximum number of movements voluntarily capped by MOD. This represents only c.6.5% of the South East business aviation market despite its prime location close to West London. MM forecast that the number of movements could be increased, should the MOD increase the current cap to 20,000. Based on discussions with the RAF, this is assumed not to incur any planning of airspace restrictions however the risk of planning and/or NATS issues with such an increase in traffic should be highlighted as a potential constraint to value of this option.

MM has prepared forecasts of business aviation movements in the London region, as shown below.

Figure 4: Growth of business aviation movements in South East England to 2030

Source: Mott MacDonald



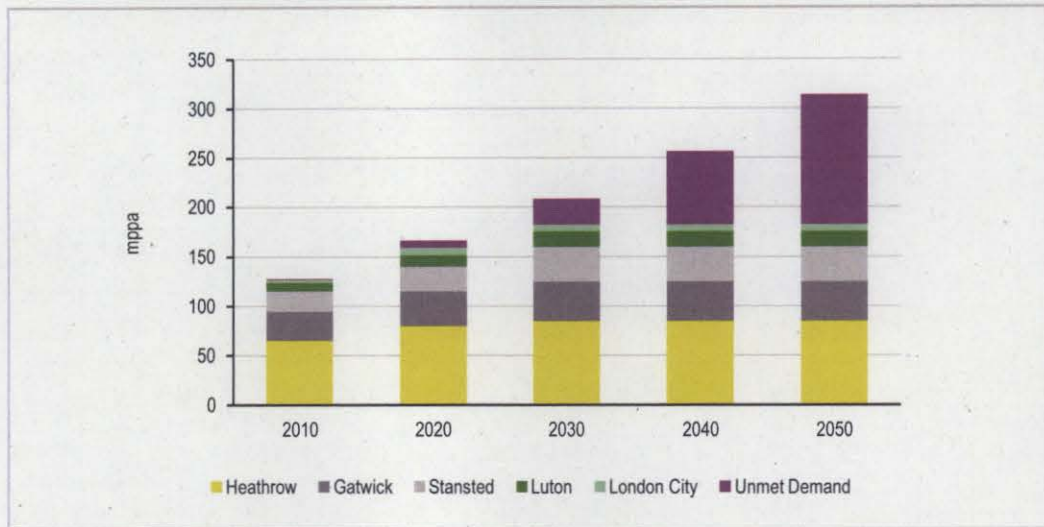
- ▶ It is anticipated that by 2020, total demand will be between 185,000 and 279,000 movements per annum but capacity will be only c.120,000 movements and therefore unmet demand will be between 65,000 and 159,000.
- ▶ This unmet demand does provide a potential opportunity for increased use at Northolt. However this is tempered by EY's understanding that there are plans for expansion at other airports in the London area to meet this demand;
 - ▶ In 2011 Farnborough was granted permission to increase business jet movements from the current limit of 28,000 to 50,000 by 2019 (on a phased basis).
 - ▶ We also understand that developments are planned to increase business jet capacity at Luton.

Therefore it should be highlighted that Northolt will have to compete for this unmet demand with other established operators who are investing in their facilities.

Commercial aviation

Passenger capacity in South East England is expected to be met by 2020; this is a delay compared to the previous DfT report issued in 2009 which forecast capacity to be met by 2016. The chart below shows the 2011 forecast of passenger demand and capacity for the South East commercial aviation market. It is noted that this has changed the short term outlook since the *Project Noah* report in April, but the revised numbers have not affected the mid to long term position.

Figure 5: Constrained demand forecast for the South East England commercial aviation market
Source: DfT UK Aviation Forecasts, August 2011 and CAA Airport Statistics 2010⁷



The above graph indicates unmet demand of 7mppa will be created by 2020; with subsequent planned increases in airport capacity to 2030 outpaced by forecast increases in demand. As such, there is an opportunity at Northolt to take some of this demand under the development options 2 and 3.

3. Technical assessment

MM have completed a technical assessment of the existing runway and infrastructure at Northolt and what would need to be done to obtain a CAA licence. Summarised below are the key points of MM's work relating to the first 4 requirements, the full report by MM can be seen in Appendix D and should be read separately.

3.1 Requirements to obtain a CAA licence

There are a number of differences to the Licensing (or Certification) requirements that could be corrected in a relatively straight-forward manner. However, the proximity of the existing runway to the site boundary at each end:

- ▶ Prevents the development of the required runway strip and runway end safety areas.
- ▶ Results in a substantial number of obstacles infringing the obstacle limitation surfaces (OLS) on the approach, departure and to the runway sides, some by significant amounts.
- ▶ Results in aircraft crossing the public roads just outside the boundary at very low heights.

The obstacle environment is significantly worse at the east end, than at the west end of the runway. The traffic lights on West End Road are not effective as some drivers disobey them and congestion tailing back from adjacent traffic light controlled junctions means that vehicles may not be able to clear the area.

MM consider the extent of these non-compliance issues to be sufficient to state that the aerodrome could not be licensed in its current form. That conclusion would apply with the existing operations and is not related to whether or not the aerodrome was to be developed as an airport.

For the same reason, MM also consider the existing runway configuration unsuitable for airline operations even if it remains a Government Aerodrome.

In order to achieve a Licence (or a Certificate), these prime issues would need to be addressed. Some of the obstacles, such as lamp posts, aerials and trees could be lowered or removed. A considerable number of buildings penetrate the existing OLS and some are have listed building protection. It would be impractical, or not permitted and certainly very costly to remove all of these. If necessary, it might be possible to remove a small number of buildings that are significant obstacles. However, even in combination, these do not resolve the infringement issue.

It is necessary to raise the OLS at each end and re-assess the approach and departure procedures (by reference to the provisions of ICAO PANS-OPS). This would be achieved by inseting the start and end points of those parts of the runway that are used for take-off or landing and in each direction. The effect of such changes would to reduce the runway distances declared for landing and take-off. Of course, if these were reduced by too great an extent, then the runway would no longer be suitable for its intended uses. Indeed, any reduction would have some impact on operations that take place at Northolt today and in particular, those which require the full use of the distances available.

A detail design or consult with the CAA on suitable changes has not been part of the scope of this study. However MM have undertaken some detailed studies to indicate that inseting the thresholds (the start of the landing distances) by 240m from the east end of the pavement (for westbound approaches) and 214m from the west end of the pavement (for eastbound approaches) will considerably improve the obstacle environment. That is not to state that there will no longer be any infringements of the new OLS. However there will be fewer infringements and they will be reduced in their amount. In addition, MM have assessed the

Runway 25 3.5° glideslope approach in relation to a 2.8% approach OLS, the Runway 07 departure against a 2.8% OLS and the Runway 25 Cat 1 ILS approach in relation to the ICAO Obstacle Assessment Surface (OAS) for Code C⁸ aircraft.

This proposed shortened runway would also more than double the height of aircraft as they pass over West End Road on the Runway 25 approach. Reliance on the existing traffic control lights ceases and these could then be removed.

Some infringements remain, but these are small in number and extent. Those penetrations would be taken into account to adjust the minimum decision heights for aircraft on the approach. MM anticipate that such adjustments would result in acceptable decision heights that would not significantly reduce the availability of the runway when the visibility conditions are reduced (and indeed it may improve runway availability in comparison with the existing runway arrangement).

The resulting declared distances are tabulated below. These would be slightly more than those presently available at London City Airport and quite useable for civil airliners on regional routes.

	Runway	TORA	TODA	ASDA	LDA
Existing	07	1684	1768	1684	1592
	25	1687	1701	1687	1684
Proposed	07	1444	1504	1649	1435
	25	1526	1586	1594	1354

The shortened runway may no longer be suitable for some existing business jet operators. No consultation with NetJets or any other business jet users has taken place.

MM have asked the MOD to review the impact of the shorter runway on military operations. This is work that is in hand, but at the time of writing no response had been received.

MM have some concern regarding tailwind operations, particularly in relation to landing on Runway 25. The required landing and take-off distances can increase significantly in tailwind conditions. These do not occur at London City, but would have to at Northolt, due to the need to operate in the same direction as the Heathrow runways. Heathrow operations have a westerly bias for environmental reasons and due to the long runways available, Heathrow can readily accommodate tail-wind operations.

It will still also be necessary to provide arrestor beds at each end of the runway and improve the under-shoot RESA provision. MM are of the opinion that the above proposals to shorten the runway were applied, then the CAA may accept the existing arrestor beds as being adequate for the existing traffic volumes and types. However, if commercial airliners were to operate in the numbers being considered, then MM anticipate that the CAA would want the existing lightweight aggregate arrestor beds to be replaced with EMAS arrestor beds.

These beds would then provide a predictable aircraft stopping performance that does minimal damage to an overrunning aircraft and protects the passengers, crew and the general public on the highways outside of the airport boundary.

MM have completed a technical assessment of the existing runway and infrastructure at RAF Northolt and what would need to be done to obtain a CAA licence, the full standalone report is available in Appendix D.

⁸ Code C aircraft are those with a wingspan of less than 36m and apply to all but one narrow bodied type

3.2 Costs associated with obtaining a CAA licence

Provision of additional facilities to handle airline passengers will require appropriate aircraft, passenger and baggage handling facilities and open public access to the South-side of the aerodrome. Such facilities would generally be new and those that are relevant to licensing would be built accordingly. They will also require planning permission, as discussed in Section 3.4.

MM have also identified areas where the pavement strength may not be adequate for the intended aircraft types.

The RAF also stated that a number of facilities located to the north of the runway may need to be relocated to the south and some military facilities to the south located to the north or moved off-site. These included the fire station, fire training ground and ATC control tower. In assessing the aerodrome against licensing requirements, some upgrades of these facilities may be required, but there is no specific need to move these, although there may be other military/MOD reasons for their relocation which MM have not assessed. These costs are categorised as Phase 3 costs below.

The total cost of the development required to achieve a CAA license for the Option 2 model is [REDACTED]. In MM's view the planning process would be most beneficially structured in two phases:

- ▶ Phase 1 – a CAA license is achieved for the current operations with the business jet movements increased from the self imposed cap of 7,000 to 20,000 movements with construction of new hangarage. This could be done quite quickly and at a relatively low cost [REDACTED] for licence requirements and [REDACTED] for planning and construction of hangar). Achieving this license would make the asset more attractive to buyers and could provide greater comfort to investors for Phase 2 developments.
- ▶ Phase 2 – a CAA license is achieved for the business model described as Option 2, which is a model similar to London City, carrying regional and short haul European turboprops and small jets. This capex cost is estimated to be [REDACTED].
- ▶ Phase 3 – this is optional, and in MM's view not a requirement for the CAA license. However the RAF have stated that they would like further changes to the infrastructure to be made at the airfield to improve operational capability. The total of the capital costs of these options is [REDACTED].

Further details are included in Appendix D.

3.3 Timeline for obtaining a CAA licence

The EY/MM team propose that the development of the site is phased so to spread the cost, meet build up of demand and match the proposed deal structure, the following two phased approach for development is recommended:

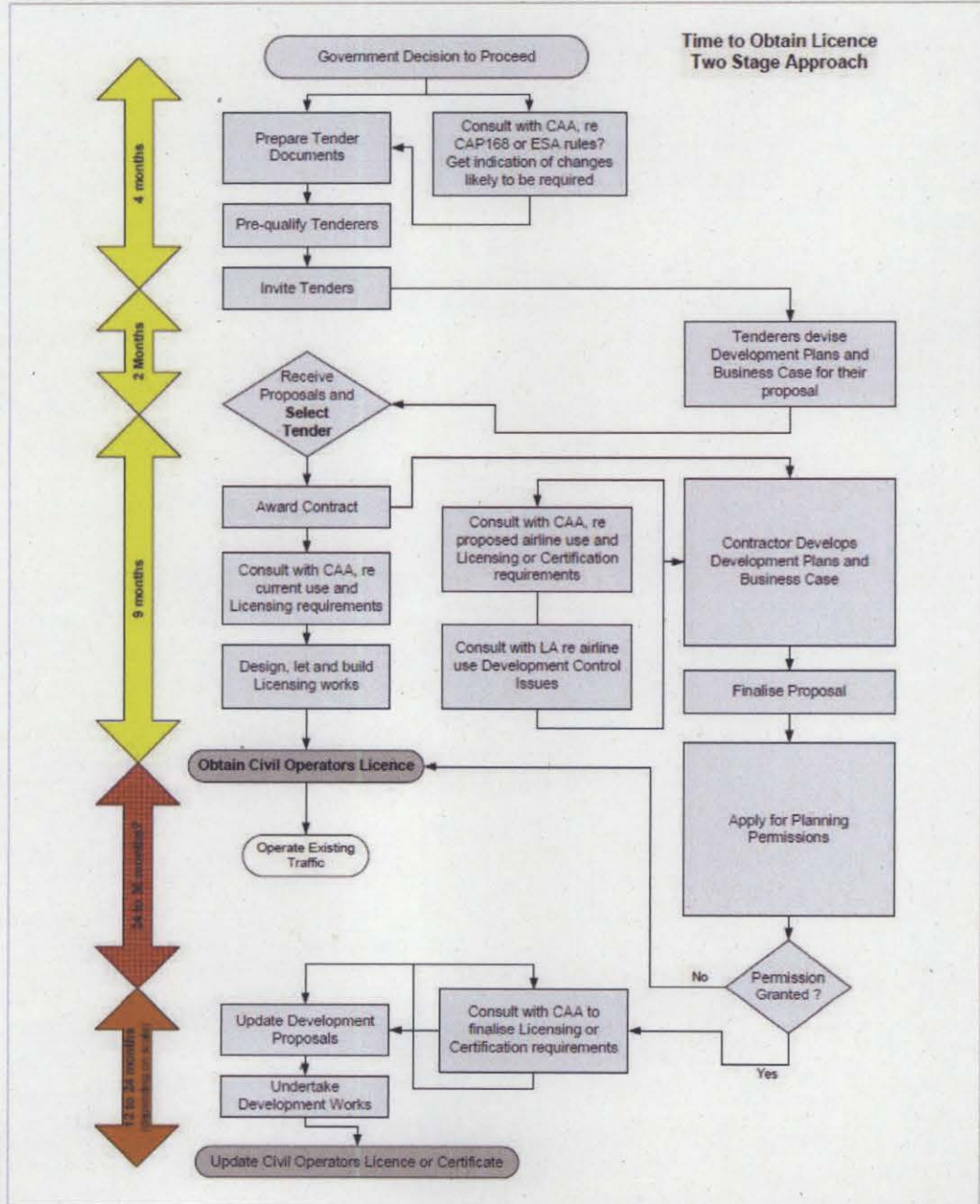
- a. The first phase would involve obtaining a CAA licence under the existing business jets model thereby not requiring a large amount of capital expenditure now (i.e. updates not required to arrestor beds, terminal, lighting, etc) hence returning a reasonable amount of value from the transaction upfront. This first phase of capex is forecast as [REDACTED] that would be incurred over the first two years, on top of the [REDACTED] cost for additional hangars.
- b. The second phase would involve the construction of infrastructure associated with increasing throughput at the airport to include commercial passenger aircraft. This would include the construction of a passenger terminal, improvement of arrestor beds, lighting, ATC, other associated infrastructure and new Code D aircraft apron, totalling [REDACTED]. It is assumed that it would take between 3-5 years to obtain planning permissions so depending on when this was commenced by the new

operator, it is assumed that construction commences in 2017 with operations commencing in 2019.

The overall timeline for the proposed two phase approvals process is shown below.

Figure 6: Two stage planning process

Source: Mott MacDonald



3.4 Planning process required to obtain a CAA licence

Any development at Northolt will require planning consents which would be done through submission of detailed planning submission to the local planning authority (in this case Hillingdon Borough) and would need to include a full Environmental Impact Assessment (EIA). MOD has sought a formal legal Counsel opinion regarding the requirement of planning approvals in a development scenario. Although Counsel has not provided a formal response (Counsel states that the questions did not provide sufficient information), it is unequivocal in its advice that the MOD cannot fast-track through the planning process and that any development or change of use would require planning permissions to the local authority. Therefore planning and the risk of not obtaining the relevant approvals will be a key concern of investors, thereby reducing value of the asset.

The following areas have been identified as requiring consultations and permissions, if Northolt were to be used as a civilian airfield:

- ▶ Provision of additional facilities to handle airline passengers will require appropriate aircraft, passenger and baggage handling facilities and open public access to the south side of the aerodrome. Such facilities would generally be new and those that are relevant to licensing would be built accordingly. However, these facilities would require planning permission which can be sought using a conventional application to the Local Planning Authority.
- ▶ The RAF also stated that a number of facilities located to the north of the runway may need to be relocated to the south and some military facilities to the south located to the north or moved off-site. These include the fire station, fire training ground and ATC control tower. In assessing the aerodrome against licensing requirements, some upgrades of these facilities may be required, but there is no specific need to move these.
- ▶ In response to an application for a Licence for Northolt, MM would expect the CAA to consider this as being an existing operating aerodrome and to review all aspects and identify any areas that do not comply with its requirements. The CAA would then request that the operator bring those facilities into compliance with the provisions of CAP168, or to demonstrate a safety case for retaining the existing situation, or some modification thereof.
- ▶ In order to convert the airport into a civilian airfield with increased capacity new aprons, taxiways, lighting systems and road connections will be required. Accompanying an application to the Local Planning Authority the following documents will also be required: an Application Form, Plans, Consultation Statement, Design and Access Statement, Planning, Environmental Statement (including noise assessment), Surface Access Strategy and Sustainability Strategy.

It is recommended that a formal legal opinion is obtained in relation to planning requirements of the preferred option.

Further detail is available in the MM technical report available in full in Appendix D.

4. Business models

4.1 Overview

4.1.1 Business models outline

This section outlines 3 business models, which are assessed as part of this study. These have been structured to meet the following requirements of the MOD identified in the 8 key requirements for this study and in discussions with the MOD project team:

- ▶ Provide an option which maximises cash receipts in the CSR period (refer to Option 1 below).
- ▶ Provide the business model which a civil operator would pursue to maximise the value of the site (refer to Option 2 below).
- ▶ Provide a military airport benchmark model against which the civil model can be assessed for VfM (refer to Option 3 below).

Option 1 – MOD 20k business jet model – MOD operated

This model is to increase Jet Centre movements under the existing LCY operation (or alternative commercial Jet Centre operator) to 20,000 movements per annum under ownership of the MOD, thereby not requiring a CAA licence. This has been assessed to allow the MOD to determine the value of a cash receipt which could be released upfront from expansion of the existing business under MOD operation without the need for major development. It effectively reflects a monetisation of the enhanced existing business and is the option which maximises proceeds without the requirement to expand facilities significantly; planning permissions will still be required for construction of an additional hangar. Option 1 also maximises the cash receipts in the CSR period.

Option 2 – CAA licensed 50k commercial aircraft model – Privately operated

This model seeks, in the long term, to develop the site to cater for commercial passenger aircraft providing flights to the UK and Northern Europe operating under a similar model as London City. The model assumes a ramp-up of business jets movements to 20,000 p.a. whilst the operator applies for planning applications to develop a fully commercial airport with circa 50,750 commercial movements with a CAA licensed code 3 runway. This is assessed as the optimal value maximisation model that a civil operator would pursue under a CAA licensed airport, in accordance with Requirement 5.

Option 3 – MOD 50k commercial aircraft model – Privately operated

This model has been developed to act as a benchmark to compare to the Civilian Option 2. It is the same as Option 2 other than the key point that a CAA licence is not obtained and the operator seeks to operate commercial passenger aircraft under the military's responsibility and a longer runway.

The following assumptions are assumed under all models:

- ▶ The MOD remain on the North-side of the site and have use of the runway, with the transaction and commercial structuring only involving the South-side thereby reducing relocation costs.
- ▶ All income from landing charges, parking charges and all income from operations at the site are assumed to transfer to the concessionaire (currently received by MOD), in return for an upfront payment and/or ongoing concession fee.

4.1.2 The case for Option 2 - CAA licensed 50k commercial aircraft model

If the challenges associated with planning and delivery of the model can be addressed, the proposed business model for maximising value to the MOD (Option 2) is based on the model of small commercial aircraft serving UK regional and European airports, with a focus on business travellers and regional carriers, with a similar traffic type to London City. In EY's view, this business model could potentially be sold for a premium over other regional airports on account of the prime location of Northolt.

The airport has the potential to offer an alternative to London City Airport, feeding the business communities to the west of the City, with a focus on businesses in areas such as the West End, Mayfair, Hammersmith and the Thames Valley. Also, with Central Line connectivity to Bank in c.40 minutes it does provide an alternative to London City Airport for business travellers to the City.

4.2 Option 1 – MOD 20k business jet model – MOD operated

MOD currently estimate that Jet Centre movements of up to 20,000 per annum could be achieved at Northolt given the current infrastructure and resource and what the MOD believe the Local Authority would allow without intervention. This forecast has not been verified (on grounds of infrastructure) but it is accurate to assume that there is excess demand which could be met at Northolt. It is assumed however that an additional hangar will be required to meet the needs of the increased number of business jets.

4.2.1 Demand

This scenario assumes a build-up of the existing business jets operation rising from the existing level of 7,000 movements per annum to 20,000 per annum by 2016 (as provided by MOD delayed 1 year for transaction/structuring), with military movements remaining at 7,000 per annum, as shown below.

	2012	2013	2014	2015	2016 onwards
Business jet movements	7,000	10,000	13,000	16,000	20,000
Military movements	7,000	7,000	7,000	7,000	7,000

4.2.2 Revenue and costs

MOD have provided a detailed breakdown of revenue received from the existing operations and a forecast of revenue under the assumption of increasing movements to 20,000 per annum – this assumption has been used in forecasting the revenue under this model. MOD inform us that average landing charges at Northolt are c.£900 per landing – this landing fee has been benchmarked against other comparable business jet sites and whilst the landing fees charged at Northolt are marginally higher than those at other similar UK business jet airports (Biggin Hill, Farnborough and Oxford Airport), the charges reflect the location of the airport and its proximity to M25 and access to central London. This is reinforced by the fees being broadly in line with Frankfurt-Egelsbach which is in close proximity to the financial capital of Germany.

MOD inform us that Jet Centre operations currently use the MOD irreducible spare capacity – meaning that the civilian operations are facilitated using MOD personnel when not being used for military requirements, with little or no impact on operating costs. There is a cost associated with LCY running the Jet Centre passenger services. MOD inform us that increasing movements to 20,000 p.a. would be possible using the existing irreducible spare capacity, i.e. requiring no increase of resource or personnel.

Detail on the costs of running the site, additional opex or maintenance from increased movements has not been provided therefore the EBTIDA margin for the Jet Centre

operations of 70% has been used to assess the financial impacts for the MOD of this option. However in assessing the Options 2 and 3, an adjustment to reflect the additional costs incurred by the MOD in operating Option 1 have been included which are transferred to the private sector under Options 2 and 3.

4.2.3 Infrastructure requirements

MOD inform us that they estimate that this level of movements can be serviced at Northolt using the existing infrastructure. However, given the increased business jet throughput it is assumed that additional hangars will be required, therefore, it is assumed that capex will be required for the planning and construction of this additional hangarage.

4.3 Option 2 – CAA licensed 50k commercial aircraft model – Privately operated

Based on the technical assessment, detailed in Section 3, the proposed features of the civil operator business model are detailed below. The technical elements of the business model are discussed further in the MM reports in Appendix D and E.

4.3.1 Aircraft to use the site

MM advise us that a Code 3 runway with a landing distance of 1,354m would be suitable for:

- ▶ All the types of aircraft currently using London City but with fewer payload/range restrictions.
- ▶ All turboprop aircraft on regional services with up to approximately 70 seats.
- ▶ Small type of regional jets (up to approximately 100 seats), including the A318, Embraer 170 and Embraer 190.
- ▶ Most executive jets other than the large types (for long-range) though the range of some of the existing users may be limited.

4.3.2 Demand and forecast passenger throughput

MM inform us that the runway would be marginally longer than that currently available at London City. London City itself is now handling c. 3 million commercial aircraft passengers a year on a point to point basis with key routes including Edinburgh and Glasgow in the top 10.

This scenario is based on a two stage build up of capacity, firstly it is a build up of the existing business jets operation rising to 20,000 by 2016 (as provided by MOD delayed 1 year for the timing of potential transaction/structuring) followed by the concessionaire applying for consents to develop the site to a fully commercial airport. Demand assumed for business jets and military use is shown below.

	2012	2013	2014	2015	2016-2018
Business jet movements	7,000	10,000	13,000	16,000	20,000 p.a.
Military movements	7,000	7,000	7,000	7,000	7,000 p.a.

The analysis of likely market demand for commercial passenger aircraft against possible operational and environmental constraints at Northolt with a circa 50,750 p.a. movement limit (discussed in 4.6.3 below), suggests that under a CAA licence Northolt could expect to handle 3.3mppa, of which 64% would be UK domestic.

Fifteen domestic airports would be expected to be served, including six that are currently served from Heathrow. Six smaller domestic destinations are considered unlikely to obtain

slots, including Exeter and Cardiff. This would allow Northolt to become the UK regions' key access airport for both central London and the world-wide connectivity afforded by Heathrow. A number of secondary cities in Europe have been included as they either had a record of previous service into Heathrow, or represent growing markets that are un-served or under served from London and would benefit from the proximity to Heathrow and the world-wide connectivity it affords.

The development (design, planning and construction) of the larger airport is assumed to be complete by the end of 2018 with operations starting in 2019. MM forecast that due to the unique opportunity that Northolt presents that ramp up of operations could happen over 3 years if operators are signed up during the design, planning and construction phase. Sensitivities have been run on this key assumption in Section 6.4.3. The detailed MM assessment of demand is detailed in Appendix E and should be viewed separately. The summary demand forecast for commercial aircraft however is outlined below.

	2019	2020	2021 onwards
Commercial movements	35,525	45,675	50,750
Average pax flight	65	65	65
Mppa	2.31	2.97	3.30
Military movements	7,000	7,000	7,000

It should be noted that both the number of passengers per aircraft (pax/aircraft) and the average passenger load factors used in the MM estimates are higher than for similar (regional) airports of this general size because Northolt is a London airport benefiting from substantial demand for central London as well as for onward connecting flights from Heathrow.

It is noted that the mix of business jets and commercial aircraft movements will ultimately be based on a commercial decision by the operator.

4.3.3 Revenue and costs

- ▶ For the first stage of the model (business jets to 20,000 movements p.a.) the revenue is the same as in Option 1, the responsibility and cost associated with operating the South-side operations (airfield and other operating infrastructure) are assumed to transfer to the private sector operator.
- ▶ Under the second stage of the model (commercial aircraft to 50,750 movements p.a.) revenue will be generated from landing charges, fuel levy, parking charges, non-aeronautical income (retail, etc), and there will be operational costs associated with operating the airport (personnel, repairs, maintenance, etc).
- ▶ The EBITDA margin for the business jet operations has been assumed as 11.0%, revenue for the commercial aircraft operations assumed as ██████████ per pax and margin for the commercial aircraft operations assumed as 32.3%. These have been obtained from assessing a benchmark sample of similar size and type of operated airports in the UK (outlined in Appendix A).

For both stages of Option 2 and 3, there will be a cost saving to the MOD of no longer being responsible for the operations on the South-side of the site. The LCY operators of the Northolt Jet Centre believe that if they (or another private sector operator) obtained a long term lease to operate the South-Side of the site (e.g. ATC, fire, security, maintenance, etc) that this could drive opex savings from improved efficiency and multi-tasking of up to 30% on the current cost of operations. Therefore, included in the analysis is the cost saving (value realisation to MOD) associated with the MOD passing operational responsibility of the South-

side operations to the private sector. Sensitivities around this assumption have been run to provide a range of potential values.

The cost saving to the MOD of a single private party operating the South-side operations has been calculated by EY, derived from market benchmarks and first principles of airport costings as follows:

- ▶ An assumed level of costs that a private sector party would incur to run the South-side operations (using appropriately benchmarked EBITDA margins), based on current business jet movement levels (7,000 per annum).
- ▶ A small mark-up of cost to represent less efficient operations – LCY operators inform us that they believe that costs could be reduced by 30%.
- ▶ Less the assumed rental charge that the MOD would pay back to the private sector operator to use the site – assumed to be equivalent to the landing charges levied under each scenario (as it reduces the number of commercial movements).

The percentage cost saving that could be achieved from private sector operations is a key driver to the overall realised value to MOD, therefore sensitivities have been run on this number to assess the likely outcome, as outlined in Section 6. It should be noted however that one of the key drivers of PFI contracts are to capture the savings possible through improved efficiency of the private sector over that of the public sector through economies of scale, competition, etc, therefore, the assertion of LCY delivering savings up to 30% does not seem unreasonable.

This cost saving is hard to forecast for the MOD/RAF due to the complex level of fixed/variable costs and interlinked costs with other parts of running the site. The RAF have provided high level cost saving assumptions for maintenance, running costs and personnel costs totalling [REDACTED]. However these are deemed to be high level in nature and therefore the calculation above using industry benchmarks was deemed a more appropriate, market based method for assessing the cost savings.

See Appendix A for detailed assumptions referred to above.

4.3.4 Infrastructure required

The EY/MM team propose that the development of the site is phased so to spread the cost, meet build up of demand and match the proposed deal structure, the following two phased approach for development is recommended:

- a. The first phase would involve obtaining a CAA licence under the existing business jets model thereby not requiring a large amount of capital expenditure now (i.e. updates not required to arrestor beds, terminal, lighting, etc) hence returning a reasonable amount of value from the transaction upfront. This first phase of capex is forecast as [REDACTED] that would be incurred over the first two years, on top of the [REDACTED] cost for additional hangars.
- b. The second phase would involve the construction of infrastructure associated with increasing throughput at the airport to include commercial passenger aircraft. This would include the construction of a passenger terminal, improvement of arrestor beds, lighting, ATC, other associated infrastructure and new Code D aircraft apron, totalling [REDACTED]. It is assumed that it would take between 3-5 years to obtain planning permissions so depending on when this was commenced by the new operator, it is assumed that construction commences in 2017 with operations commencing in 2019.

Given the scale of an Option 2 and 3 transaction, there will be considerable advisory professional fees (legal, financial, commercial, etc) associated, these fees are already included in the second phase capex cost.

There are some additional capex costs that RAF personnel on-site inform us would be required to segregate the civilian and military operations under the options where a civilian operator operates the airfield, however MM do not believe that these costs are required to be incurred as part of the proposed approach as the existing infrastructure is assumed to be used and just upgraded. Therefore, these costs (totalling [REDACTED]) have not been included in the base case calculations but are shown as a downside sensitivity, further detail of these costs are in Appendix A.

One of the overarching assumptions in the study is that the MOD would retain use of the site. There are however some aircraft which would require additional infrastructure than that required for commercial use – if the RAF wished to continue to operate Code D type aircraft (C130, A400M, or C-17A) MM anticipate that a new and separate apron would be required for military aircraft located to the north of the runway because of the required space and clearances. The capex figures for this additional infrastructure are already included in Option 2 and 3 second construction phase (totalling [REDACTED]) as MOD have stated that they require access, but it should be noted that Code D aircraft could not land on the length of runway declared in Option 2, any landings by Code D aircraft under Option 2 would be outside of the licensed runway length (the longer pavement still remains) but MM advise that there is no precedent of this and is not advised for safety reasons.

4.4 Option 3 – MOD 50k commercial aircraft model – Privately operated

There is a third business model that could be considered to maximise the value of the site. This option is essentially the same as Option 2 outlined in Section 4.3 above but retaining in MOD control/ownership. The key implication of this business model is that if a CAA licence is assumed not to be required then the declared runway length could remain at 1,684m, thereby increasing the size (or load) of aircraft that could land at the site and hence increase the number of passengers and income to MOD. Therefore there is additional value from larger commercial aircraft that can only be realised through keeping the site under military control through the passenger based aviation charges and retail sales which will be higher with the increase in passengers.

There will be increased revenue, capex costs and increased opex costs associated with this option, as well as challenging largely unknown licensing barriers, these are described in more detail below.

4.4.1 Aircraft, demand and forecast passenger throughput

As outlined in Section 2.1.3 there is significant demand for regional passenger flights in the UK, this scenario essentially builds on that business model which allows larger aircraft to land at the site thereby increasing demand and revenue for MOD.

MM advise that under a longer runway the same aircraft could use the site as outlined in Section 4.3.1 but could also allow larger aircraft in the form of larger Embraer and smaller Airbus planes which require the additional runway length. These larger aircraft would allow the average number of passengers per flight to increase from 65 under Option 2 to 75 under Option 3.

MM estimate that for the longer existing runway the traffic demand would increase by almost 16% to 3.8mppa of which 63% is UK domestic.

4.4.2 Revenue and costs

Costs are forecast to be in line with that of Option 2, so increasing passenger numbers increases revenue therefore translating to an increased EBITDA margin in line with the increased number of passengers per flight.

4.4.3 Infrastructure required

The same capex costs would be required as outlined in Option 2 and more likely an increased cost would be likely under Option 3 as explained below.

- ▶ Regardless of runway length commercial pilots may expect the markings and signage to be to normal ICAO/CAA standards, so there would be no savings in this area.
- ▶ There would be savings regarding AGL and Navaid changes as these would not be required under a non-CAA licensed model.
- ▶ The number of movements would be the same and the wing span and length of the aircraft similar, so apron space would be the same. The higher average number of passengers per aircraft would need to be reflected in upgrades to the terminal and car park.

On this basis, MM estimate that Option 3 would cost an additional [REDACTED] above the costs outlined in Option 2.

4.5 Additional options identified

In addition to the three options assessed in detail in this Section, the *Project Ark* team have discussed and assessed additional options as part of the study, which are effectively variations of the core three options. The qualitative assessment of these options are discussed below, with quantitative analysis shown in Section 6.7.

4.5.1 Short term lease with upfront monetisation

In the context of the wider MOD asset review if there are possible military operational changes in the near-term then a short-term (10 year) lease under business jet operation could be attractive to the MOD to retain control of the asset and to allow changes to the site or operations after the short-term lease. As an indication, EY have completed high level analysis of the up-front cash return that could be generated under a 10 year lease whilst increasing business jet movements to 20,000 per annum with South-side operations being retained by the MOD, LCY (or similar private sector party) operating the Jet Centre and the private operator investing [REDACTED] on building additional hangar space, this is shown in Section 6.7.1. The private sector would be incentivised to increase movements under this scenario from the assumed high margin (as per Option 1) from higher passenger levels.

4.5.2 Short term lease with ongoing landing charges and tiered incentive sharing mechanism

As for the above option in Section 4.5.1, if the MOD wishes to retain control in the near term a short-term lease could be used. The MOD may prefer however not to receive an upfront payment from the monetisation of the ongoing landing and parking charges but continue to receive landing charges, hangar rental charges, parking charges, fuel levy (i.e. all charges currently received from LCY, referred to as MOD income). In this event, the MOD would need to offer an incentive to the private sector to increase business jet movements to 20,000 p.a. by way of a share of the MOD income.

To calculate an indicative value that could be returned to MOD under this scenario, EY have made some broad assumptions in line with current MOD operations. The detail of these assumptions and indicative ongoing income to MOD are outlined in Section 6.7.2. It is important to note that it is assumed under this model that no additional development and planning applications are required – this has not been verified and is a key constraint in this scenario.

4.5.3 Business jets increased movements

If commercial movements are able to expand to 50,750 per annum (as outlined in Option 2 and 3), the MOD may prefer to only allow business jets rather than to introduce commercial

aircraft. The outcome from this scenario would be suboptimal to that achieved under Option 2 and 3 – income received per aircraft is higher under commercial passenger operations (£900 per landing under business jets and £960-1,860 per landing under commercial passenger model, depending on number of pax per movement and pricing assumptions) and EBITDA margin is higher under commercial passenger operations (11% under business jets and 32-36% under commercial passenger model).

The capital development requirement under this model is not clear but given the considerably lower returns from business jet movements in comparison to that achievable under the Option 2 and 3 models, driven by significant reduction in passenger numbers and aero and non-aero revenues, EY do not believe that it would yield an optimal return for MOD, hence it has not been considered further in this study.

4.5.4 Option 1 transaction followed by Option 2 enhancement

Section 6 shows that Option 1 would release the maximum upfront value and that Option 2 and 3 deliver increased total effective realisation for the MOD. It would not however be possible to combine two of these models to obtain an increased value outcome because the responsibility of costs changes and therefore a reimbursement of value would be required to the private sector at a follow on transaction. This is explained in more detail in Section 6.7.3.

4.5.5 No rental cost under private sector operator

Rental cost from the MOD for using the site is assumed to deliver increased income to the private sector operator, but is netted off against the potential cost savings. So, there is an alternative model, whereby no rental cost is charged to the private sector (therefore a lower upfront value) but the cost savings are calculated to be higher (as no rental charge to offset against). The total effective realisation to MOD would not change under this alternative model, the impact only being in the timing of cash realisation, i.e. higher upfront realisation under the proposed approach vs a lower upfront value with higher cost saving spread over the assessment period. This model does not have an overall impact on value and the value released upfront or later is a function of how the agreement is structured, therefore, this model is not considered further in the report.

4.6 Key risks and constraints

4.6.1 Air traffic control

The runway at Northolt is 5.1 miles due north of runway 09L/27R at Heathrow, and at 250 degrees is aligned exactly 20 degrees convergent, so that an extension of both runway centrelines would meet in the vicinity of Twyford (near Reading), 14 miles from the thresholds. As a result, special procedures have been developed by the Military controllers at Northolt and by NATS to ensure that movements at the two airports remain fully coordinated but independent and free of conflict. Aircraft arriving at Northolt from the west fly parallel to the approach paths for Heathrow (approximately along the proposed flight path for an approach to Heathrow R3), and execute a 20 degrees dogs-leg in the vicinity of Slough. Aircraft departing from Northolt to the West (the majority of flights due to the dominant wind direction) are treated similarly and vectored by radar.

The interaction of airspace between Northolt and Heathrow is a key constraint on the development of the proposed options that has not been considered as part of this study.

4.6.2 Military use of the runway

MOD advise us to assume that the military require an assured access to the runway and that they will remain on the North-side of the site. It is assumed that the military will continue to require 7,000 movements per annum which is in addition to the forecast throughput of business and commercial aircraft.

It has been assumed that under private operation (JV, lease, concession or sale) the MOD would pay an annual cost to the private party to use the site. The likely cost of this is unclear

as it depends on the commercial structure and cost to the private sector to allow access. For the purposes of quantitative analysis it has been assumed that the MOD would pay the private sector a landing charge equivalent to that received from business jet operations (i.e. £900 per landing). The MOD may be able to obtain a discount on these charges due to a long-term agreement, or there may be an additional cost for usage of other airside facilities; however, in the absence of market tested data a consistent assumption for landing charges has been assumed for commercial and military landings.

The charges paid by MOD, in effect, reduce the net income to MOD realised under the development options and it has been modelled as such in the analysis. This allows access for MOD to use the site up to an agreed limit, above which MOD would need to pay additional charges.

4.6.3 Number of movements

Business jets

MOD believes it is in their decision making capability to lift the cap to 20,000 movements per annum without seeking planning further approvals. This assumption has been relied upon and not sought to independently verify this – this should be confirmed by a formal legal opinion.

Commercial aircraft

It is assumed that Northolt will be limited to a maximum of 16 movements per hour due to airspace constraints in the Northolt/Heathrow/Denham/Luton area. Assuming that there are 15 flight hours (07:00-22:00) per day and 6.5 days per week, this equates to 240 flights per day – extrapolated across the year this totals a maximum busy-hour throughput at the site of 87,600 movements per annum. For prudence, for the purposes of the analysis MM have assumed a cap of 50,750 commercial movements per annum. Assuming the military use 7,000 movements per annum the forecast maximum throughput of the site is 57,750 per annum – 66% of busy-hour maximum throughput.

The cap has been set at 50,000 based on a number of factors as described below, but a key consideration is the use of capacity throughout the day – Northolt would likely operate at maximum capacity in the early and late hours of the day but at a lower level at other times of the day, therefore at a lower percentage usage on average. EY estimate that Luton and London City have 66% and 57% of total possible throughput respectively, therefore the assumed level of 66% of busy-hour maximum throughput seems a reasonable assumption.

- ▶ Current non-military movement levels are 7,000 movements per annum, with an assumption that increasing to 20,000 may be possible – any more than a certain level seems an unreasonable assumption to be feasible in a single step due to likely objections from Local Authority and local lobby groups.
- ▶ There is a risk that that number of movements may be subject to downward pressure by NATS for airspace management reasons.
- ▶ In the 1950s, the peak movements of the site were c.50,000 so this could make it a more readily accepted cap limit of commercial movements to the local residents and planners.

It may be possible to increase airspace movement capacity but this would increase aircraft and passenger throughput which would have an impacts on physical infrastructure (apron, taxiway and terminal capacity), surface access and environmental impacts. Therefore for the purposes of analysis the movement rate has been capped at c.57,750 per annum (commercial and military movements) and this assumption has been tested with sensitivities.

4.6.4 Licensing requirement

MM have completed an assessment of the CAA's regulation of the licensing of aerodromes, covered in the Air Navigation Order (ANO) (CAP 393) and further developed in CAP 168, 'Licensing of Aerodromes'. MM's report informs us that there are four types of aerodrome

(Government Aerodrome, Unlicensed Aerodrome, CAA Licensed Aerodromes – Ordinary Licence, and CAA Licensed Aerodromes – Public Use Licence). Northolt is a 'Government Aerodrome' being also available for commercial aircraft, this means that the CAA has no requirement to licence, or have any regulatory oversight. It is the understanding of MM that there is no restriction on the number of commercial services a year that Northolt could accept, which would be limited only by the airspace, ATC capability of the facility and the need to protect slots for military movements. Aircraft size and range would be limited by the Military's declaration of runway distances and each airline's own specific aircraft operations manual which would include an evaluation by the specific company and aircraft commander of the safety risks of operating into a non-CAA-licensed aerodrome.

It should be noted however, there is no recent precedent of Government aerodrome's increasing movements to the level at which may be considered in the Option 3 business model, hence being only an indicative alternative – at some stage it is assumed that this option would likely be prevented from full development. The restriction would most likely be in the form of failed planning approvals or unacceptable safety to the airlines:

- a. In order to develop the aerodrome to handle more commercial passengers this would require the supporting infrastructure (terminal buildings, road links, etc) which would require planning approvals, either for construction or change of use. As for the proposed business model, this would be a key issue but if larger aircraft and more frequency is forecast under the military control then the associated EIA and noise assessment would be closer scrutinised and possibly rejected.
- b. Each operator would need to make a decision on whether they perceive the site to be safe for their operations. This will be dependent on the specific aircraft operations manual but there is a risk that operators would not accept the risk associated with landing larger aircraft at the site given the obstructions on approach and safety precautions on landing.

As outlined in Section 4.7.4, to allow this alternate business model to be feasible this would require strong political backing and clear central Government support.

4.6.5 Transfer of South-side operations to the private sector

Option 2 and 3 assume the transfer of all South-side operations to a single private sector operator to derive net savings to the MOD. How this would be delivered whilst still meeting the military and commercial requirements will need detailed assessment and project management.

4.7 Commercial implications & considerations

The business models have the following commercial implications and key considerations:

4.7.1 In line with current aviation policy

The business models could be argued to be aligned to the stated Government policy of no new runways but the optimisation and effective utilisation of current airport space. Enhancing the number of movements at Northolt does not require an additional runway and, given the proposed business model, nor does it require a large-scale single redevelopment of the site, it can be done in a phased manner as advised above. This meets with the current aviation policy whilst not significantly adversely affecting the local residents.

4.7.2 Wider economic benefit

Developing Northolt in line with the above business models will release wider benefits to those UK regions that it serves. There are many regions that have lost their air services to London Heathrow and some to any London airport as a result of Heathrow domestic slots being sold and used for more profitable long-haul international services. Therefore there will be two significant economic benefits associated with increasing movements at Northolt:

- a. Reconnecting regional communities in the UK to London and Heathrow would benefit regional economic development and social cohesion with comparatively low environmental impact. Despite being hard to quantify the wider economic benefit is significant and should not be overlooked.
- b. If Northolt were to replace some of the domestic services from other London airports, this would free up space for international flights at the larger London airports hence addressing the issue of capacity constraints in the South East/London area.

Given the recent CAA statement about the need for greater connectivity and runway capacity for London and Heathrow in particular, the limited development of the existing runway at Northolt would appear to offer significant regional and national connectivity and economic opportunities.

4.7.3 Planning approvals

Any development at Northolt will require planning consents which would be done through submission of detailed planning submission to the local planning authority (in this case Hillingdon Borough) and would need to include a full Environmental Impact Assessment (EIA). MOD has sought a formal legal Counsel opinion regarding the requirement of planning approvals in a development scenario. Although the Counsel response is not clear in its opinion (Counsel states that the questions did not provide sufficient information), it is unequivocal in its advice that the MOD cannot fast-track through the planning process and that any development or change of use would require planning permissions to the local authority. Therefore planning and the risk of not obtaining the relevant approvals will be a key concern of investors, thereby reducing value of the asset.


4.7.4 Requirement for clear Government support

Due to the close proximity of local residents and Heathrow, any development planning application (and associated EIA) would likely be closely scrutinised and would likely be opposed at some stage. As a result, if MOD are keen to develop the Northolt site, under any business model and more-so if large scale development is desired then clear Government support and/or statement will be required. Ideally this would be in the form of a policy statement from the government supporting this initiative.

As an alternate strategy, if it could be shown that the development of Northolt were of national strategic importance and that the overall level of operations do not (at least in the short term) change the overall level of historic use at the site in terms of movements, it may be possible to seek the equivalent of a Transport and Works Act bill to facilitate the development. Such a procedure was used for the construction of the Channel Tunnel Rail Link and may also be used for the High Speed 2 rail development to Birmingham, in the national interest.

4.7.5

[REDACTED]




4.8 Assessment of commercial structures

The proposed business models described above could be delivered via a number of possible commercial structures. EY has completed a detailed assessment of the various commercial structures that could be used to deliver the business models. The detail of this assessment can be seen in Appendix C, the summary points of which are shown below. The following commercial options have been considered:

- ▶ **A joint venture (JV)** – A developer/operator partner is engaged now to use the facility partly and begin development, depending on the level of investment between the two parties, this would vary the share of JV that each party has and hence the share of dividends or profit/revenue. A JV is delivered through both parties 'buying in' to the equity of the JV, with the MOD investing the value of the site and the JV partner investing (either through investment into the asset or cash payment to MOD) into the agreement. The amount invested by each party will determine the percentage share holding in the JV. This would determine the level of any future investment required from both parties as well as returns/dividends receivable. The MOD continues military operations, potentially assisted by the partner for a fee, but crucially, both parties share in the risk and returns from the development.
- ▶ **Short terms lease** – A short term lease is let for the operations of the airport to a private sector party, in essence similar to the existing contract held with London City other than a monetisation of the ongoing landing/parking charges, etc. Key issue for MOD under this options that there is no incentive for the lessor to invest in the infrastructure which would result in either a low level of development or the cost being required by MOD. This option could be attractive to MOD in the context of the wider MOD asset review if there are possible military operational changes in the near-term.
- ▶ **Concession** – A long term concession is let for development and operation of the site, with a payment made upfront to reflect the value of the existing business. Further payments could be agreed based on future revenue increases at the site following planning consents. The concession agreement could be structured so to allow MOD assured access to the site for an agreed fee and certain clauses in the agreement could encourage development whilst allowing MOD the opportunity to realise a future upside from a renegotiation or retendering of the concession at a later date. This is viewed as the optimal structure for meeting the MOD's objectives.
- ▶ **Share Sale** – A straight sale of the site in its current form where the MOD relinquishes all control of the Northolt site in return for a payment from a buyer and, as for a short term lease or concession, the MOD would become a customer of the new operator. This would release upfront value to MOD now but in the absence of MOD preparing its development plan and planning applications, a low value would be obtained with a likely valuation of the site by the market of it existing business jet operations due to the high level of uncertainty and risk surrounding the larger scale development option. In addition, clawing back value under a straight sale would be challenging to structure.

All of these commercial options could be structured to ensure the continued access to the runway for the MOD, however this would potentially erode value as under a private developer higher revenues could be achieved by bringing planes with more passengers.

The models were assessed against a set of commercial objectives agreed with the MOD at the Project Board meeting on the 11 January 2012. The results of this assessment are as follows:

	JV	Short-term lease	Concession	Share sale
1. Release value in the short term (i.e. during CSR period)	✓	✓	✓	✓
2. Structure business model to enhance market appeal and value	✓✓	x	✓✓	✓✓
3. Maximise whole life value to MOD, including clawback of value from future increased activity	✓✓	x	✓✓	x
4. Minimise capital investment required	x	x	✓✓✓	✓✓✓
5. Assured continued military use	✓✓	✓✓✓	✓✓✓	x
Total score	7	4	11	6
Rank	2	4	1	3

Appendix C assesses each commercial structure against each of the above objectives in more detail, please refer to the Appendix for more detail.

Given the above assessment of each objective and the suitability of each structure, the proposed recommended commercial structure is a long-term concession whereby the MOD transfers full operational control and responsibility to a private sector party to operate the airfield and in return the concession is structured so to allow an upfront payment (on account of the Option 1 business) with the opportunity to benefit from future increases in revenue following the achievement of planning consents (under either Option 2 or Option 3).

5. Realising value from future increase in activity

5.1 Introduction

- ▶ A key issue in any transaction at Northolt, as highlighted by this report, is the planning risk which has to be taken by any developer of the site in order to release the value from the full potential commercial aviation opportunities at the site.
- ▶ It is EY's view, that the value attributable to the revenue which could be generated from commercial aviation, which would require significant planning permissions to be granted on account of the new infrastructure requirements (i.e. terminal, transport links, etc.), is unlikely to be included in any sale price by a prospective buyer on account of the significant risks of the planning approvals being unsuccessful.
- ▶ Therefore, it is unlikely that the MOD will be able to release the value of the site in the short term, beyond the value of the current operations (plus an allowed increase in Jet Centre movements from 7,000 to 20,000 movements, which could be added without further planning consents). This would be unlikely to meet MOD and HMT objectives of generating a VfM outcome for the taxpayer and could lead to significant value being generated for a developer willing to take the development risk for years to come, particularly where the MOD does not retain a shareholding in the business.
- ▶ The following section of the report explores the potential options for spreading the proceeds of any sale or transaction across the life of the asset, linking payments to performance so that HMG can benefit from any uplift in the value of the asset in the future. This is done by identifying the key factors to be considered in structuring a claw back mechanism, outlining examples of where claw back mechanisms have been used elsewhere, and finally proposing a potential structure for structuring a deal.

5.2 Key considerations in structuring a claw back mechanism

The structure of any claw back mechanism will be driven by the following considerations.

5.2.1 Level of competition

The key to negotiating some of the claw back mechanisms described above is having the leverage to be able to negotiate the deal. Without a strong market appetite for the deal to drive the competition the MOD will find it difficult to negotiate an attractive claw back structure to meet its objectives. It is therefore vital that the deal is structured to attract the maximum number of investors. Examples of assets where vendors obtained an attractive sale price, primarily driven by a favourable capital markets, simple transaction structure and high degree of competition for these assets, include, High Speed 1, London City Airport, Leeds Bradford Airport and Belfast City Airport.

In order to drive the competition for the sale it will be important to ensure that the market sounding is undertaken to align the deal structure to the market expectations.

5.2.2 Ability to identify specific and measurable triggers

A mechanism which seeks to link future payments with the performance of the asset will need to establish specific and measurable triggers against which future payments can be attached. The challenge for an airport asset is the number of variables which can affect performance, as a result of the various sources of revenue and external factors which can affect performance. Examples of measures which have been used elsewhere include passenger numbers and IRR, although IRR can be a difficult indicator to manage in an airport context.

In the case of Northolt, the key trigger to value will be the successful achievement of planning approval. It is unlikely that any agreement will be able to be negotiated on what this triggers in terms of a price. This will most likely be negotiated with the private party on achieving planning approval. The MOD would need the ability to terminate at this point, in the event that

it felt the negotiations were not delivering a value for money outcome. The termination costs could then be netted off against any future payment received from the new concession payment.

5.2.3 Aligning incentives of both parties

Structuring a mechanism in which both parties are incentivised to maximise value is the key to generating the best value from any claw back mechanism. Typically, most claw back mechanisms occur at a point when the operator has exceeded his target returns, however as long as the mechanism is structured in a way which does not lead to a marginal loss for the operator, it should still incentivise growth. This only holds where investment is not required however when new investment is required the incentive falls away. The operator will take a view on their ability to generate a return on his investment within the claw back mechanism, where the mechanism restricts their return below the target return, the investor will cease to invest in the asset, thus negatively impacting both parties.

Therefore in order for the mechanism to work appropriately it would need to be structured to take account of all of these issues. As an example a sharing mechanism based on revenue could create disincentives for an operator as it does not take account of changes in the operator's cost base (both operating costs and funding costs for new investment), whereas an IRR linked sharing mechanism would take account of these issues.

The level of sharing needs to be considered as well so as not to remove the incentive to improve performance. The share payable to the operator should be sufficient to provide incentives. The mechanism would be developed using sensitivity analysis on a range of possible outcomes and in a competitive environment should be used as a bid parameter to encourage the best value outcome for the MOD.

5.2.4 Impact of claw back on upfront cash receipts

The absolute value of the asset will be determined by the market's view on the potential risk adjusted cash flows which can be driven from the asset, which will be a function of demand and cost assumptions. This value can be maximised through a competitive process, which can be achieved by structuring and marketing the project to make it attractive to the market. The structure of the payment mechanism and timing of the payments should not materially affect this, there will be no new value created from the mechanism in net present value terms.

If the market's value of the opportunity (as structured) in the form of an upfront payment, any claw back mechanism is likely to reduce the upfront payment value to the extent the buyer thinks it will affect his overall return. As any clawback could be less likely to materialise than the upfront payment, the impact on the upfront payment is likely to be risk adjusted to reflect this. Therefore the MOD would need to consider total VfM impact of the mechanism by attributing the MOD's own risk adjustment to future cash flows.

Many of the claw back or sharing mechanisms seen previously focus on sharing only above a significant value above expectations, which in the view of the operator is unlikely to be achieved and therefore will not materially affect their return, therefore this is partly a presentational point to make the bid more attractive to the vendor. However in opportunities such as Northolt where the uncertainties over performance are high due to the change in use, these mechanisms can have more value for the MOD in the long term. Typically letting contracts for the Government Authority with these types of claw backs (e.g. on the North South Bypass Tunnel in Brisbane) the impact of the revenue share mechanism has not been included in the VfM assessment as it only occurs after a significant increase in traffic usage. The MOD would therefore need to consider the treatment of any mechanism in assessing VfM.

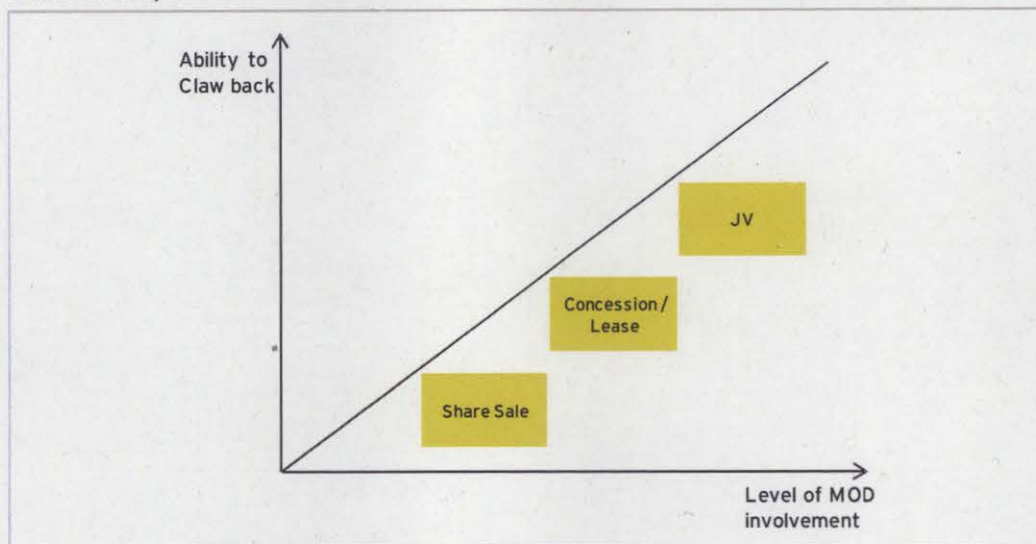
5.2.5 Delivery model adopted

Appendix C outlines the delivery models being considered for the transaction. The type of delivery model used will be key in determining what any claw back mechanism will look like.

The ability to claw back future revenues on account of improved performance will reduce as the MOD's holding in any future structure decreases, as depicted in the diagram below.

Figure 7: Possible claw back of value depending on commercial structure

Source: EY analysis



Joint venture (JV)

The JV structure is the most conducive to the MOD sharing in the benefits of future revenue potential, as a result of them sharing in the risk of development and subsequent operations, with the private partner. This is the key point of difference in this model compared to the other models considered. The mechanism for sharing in the future benefits could be built into the JV agreement between the two parties.

This is seen most commonly in the property sector where a landowner shares in the planning and development risk of a project with a developer, and uses his land value as his equity contribution into the JV, whilst the developer funds the cost of development. The value weighting of the land and development costs then determines the shareholding of each party in the JV (subject to any cash adjustments to drive a desired outcome).

In terms of how this could be structured, the following is likely to meet with the requirements of the MOD:

- ▶ The MOD enters into a disposal process now and uses generated capital to generate a revenue stream. An upfront payment is paid by the private partner on account of the value attributable to the existing business. Depending on the level of competition and view of the bidding market, this payment could reflect the value of between the current 7,000 movements and the 20,000 which are possible within the current operations. Without significant competition, this upfront payment could be heavily discounted as any JV partner is unlikely to enter into a JV with a view to running the existing business, but rather the significant potential in developing the site into a full commercial airport. Equally the value of the upfront payment will ultimately determine the level of shareholding each party has in the JV. The MOD would need to take a view on the value of foregoing some of the upfront payment they would seek on the basis of a larger share of future profits, e.g. if the value of the existing business is deemed to be £100m, then a private party paying £50m would expect to take a 50% share in the JV. Alternatively some or all of the payment could be foregone in lieu of the developer funding the cost of development which would determine their share.
- ▶ A developer/operator partner is engaged now to use the facility partly (i.e. run the existing Jetcentre business) and begins development to allow commercial airport

operations to be developed. MOD continues its operations and is potentially assisted by the partner for a fee. The level of this assistance will depend on the structure of the existing agreements in place with Manpower and Serco in relation to the MOD operations currently at Northolt.

- ▶ The parties agree a mechanism for sharing in the risk and rewards of the business. This could be in the form of annual profit sharing payments/dividends upon commencement of operations. However, it should be noted that should the business be non-profitable, the MOD may need to contribute further capital to support the business. This risk is likely to be highest in the early years of the project as the business ramps up.
- ▶ The JV agreement is the structure which best allows the objectives of both parties to be aligned in determining the mechanism for sharing in the benefits of the business, as both parties are incentivised to maximise profitability of the business as they share in the profits on a consistent basis.
- ▶ The JV agreement could also be structured so that the private partner assists in any exit procedure for the MOD. This would allow flexibility for the MOD to move operations out of Northolt completely should MOD requirements change in the future, or if the MOD operations at Northolt overly hinder or impede the commercial operations and the private party wishes to buy out the MOD part of the business. The mechanism could be designed so that the MOD has an option to exit and/or the private party can buy out the MOD at some point. This would trigger a further payment to the MOD on exit based on the value of the business at that point, releasing further value for HMG.
- ▶ In summary a JV value realisation mechanism could work as follows:
 - ▶ An upfront payment is paid to the MOD representing the value of the existing business. The level of this upfront payment will determine the shareholding of each party in the JV, and hence the value of future profits payable to each party.
 - ▶ A profit sharing mechanism is agreed to share profits (and losses) of the business between the two parties, on the basis of annual dividends or similar.
 - ▶ A further payment is paid on exit from the business based on the value of the business at the date of exit.

Lease/concession structures

Short term Lease

The previous section of this report considered both a short and long term-lease option for running Northolt. The short term lease option is limited in terms of allowing development, as any operator would not be incentivised to invest in the infrastructure required to develop the airport as he will be unable to generate the returns in the absence of a longer lease. In EY's view at least 20-25 years would be sought by parties looking to generate a return on investment. Therefore a straight short term lease would not allow the MOD to claw back any additional value beyond that which can be achieved from existing operations plus the assumed increase in business jets from 7,000 to 20,000.

Long term lease / concession

Under a longer term lease, claw back mechanisms become easier to structure. Typically, a competition to appoint a lessee would involve bidders taking a view on the future revenues which could be driven from having the right to operate the site. This involves a range of assumptions which they make in their bid as to what they think will happen in terms of; costs incurred, revenue generated, the timing of particular events (e.g. planning consents being granted, construction being completed, etc.), the level of return they will achieve, etc.

Therefore there are a number of triggers which can be set upon which the lessor can seek to share in any benefit above those anticipated by the lessee in developing their commercial

offer. A deal could be structured under the long term lease option, whereby the MOD could benefit from a performance above that which was factored into the lease payment on day one. This would therefore take account of an upturn in the projected revenue or financial performance of the operations as a result of planning approvals for example. Examples of triggers which could apply include:

- ▶ **Revenue sharing** – this model has been used in toll road concessions (e.g. North South Bypass Tunnel and Airport Link in Brisbane), where typically revenue share mechanisms apply at a defined level above the base case assumptions around usage. This is typically a bid parameter, hence value is maximised where there is strong competition for the contract. Typically the levels set on the revenue sharing mechanism are so high that the lessor has far exceeded his return expectations, and hence the value of these mechanisms is limited to “hope” value. Equally any revenue share typically does not crystallise until much later in the project life and so the net present value of any payments is limited. The challenge of such a model in the aviation sector is that the revenue is so much more diverse (i.e. aviation revenues, retails, etc.) than a toll road, that it would be difficult to structure a deal which incentivised all parties.
- ▶ **IRR triggers** – similar in concept to the revenue sharing model above, this uses a pre-determined IRR level as a trigger for sharing in benefits. Where the lessor achieves a certain IRR, any profits above this level are shared on a pre-determined basis, e.g. 50:50. This model has been used on a number of PFI concessions, including for example the MOD’s Strategic Sealift Service PFI with Foreland Shipping. The point for negotiation will be the level of the IRR where sharing triggered and the mechanism for sharing. This could be developed for Northolt under a lease structure but the differential between the lessee’s base case IRR (based largely on the existing business) would be likely to significantly lower to the IRR above which they would be willing to share given the risk they are taking on the planning approvals. Therefore the value of this structure to the MOD would need to be tested using sensitivity analysis to assess the overall value for money impact of requiring an upfront payment.
- ▶ **Refinancing gain share** – where a specific event occurs, such as a refinancing, any windfall from such an event can be shared between the parties, under SOPC4 this has historically been on a 50:50 basis, however HMT amended this to a 70:30 share on account of the higher cost of debt following the Lehman collapse in 2008. Where other events can be established which are likely to subsequently increase the value of the asset, these could be structured as trigger points, e.g. the achievement of planning approvals.
- ▶ **Concession fee on per passenger basis** – the concession fee itself could be structured so that it is linked to passenger numbers, and therefore the lessor would benefit directly from improved performance of the airport and the objectives are aligned with the lessee. This is the structure used at Luton Airport. The key issue which needs to be considered on this model is ensuring that the lessee has the incentives in place to continue investing in the infrastructure to grow the usage. In a defined lease period, the incentive to continue to invest reduces over time as the ability to generate returns on new investment diminishes. Where this occurs the lessor has to consider options for either extending the lease period to encourage investment or to terminate the existing lease to allow a new lessee to come in and push the business forward with new investment. The impact of any termination costs needs to be considered in determining the best value outcome. The issue for the MOD in relation to the Northolt will be the desire to release a cash receipt upfront. As such, a hybrid could be developed whereby an upfront payment based on the value of the existing business is paid, and then a further annual concession fee is payable by the lessor linked to achieving a pre-determined level of usage over the concession period. This is outlined below.

Hybrid Option – Long term lease with break option on achievement of planning

In EY's view there is likely to be a hybrid option of the lease model which could allow the MOD to trigger an option to renegotiate or re-tender the concession on a long term basis, once the necessary planning approvals have been achieved to develop the site for commercial use. This could be structured to fit in with the proposed 2-staged planning approach outlined in Section 3 of this report.

- ▶ Step 1 – a short term lease is structured to generate a cash receipt on the basis of the maximisation of the existing business option. This could include the benefit of increasing the movements from 7,000 to 20,000 and driving down the costs of running the existing facilities by a private party (based on discussions with the market, this could be in the region of 30% if they were to take over the running of the existing airport operations).
- ▶ Step 2 – the lessee is incentivised to achieve the planning required to develop the commercial airport facilities via a condition which entitles them to first right of refusal on the expansion of the cap to c.50,000 commercial movements under a commercial aviation option.
- ▶ Step 3 – on achievement of planning approval, the MOD has a right to step in and renegotiate the concession fee on the basis of an increase from 20,000 to c.50,000 movements. The uplift in value would also reflect the increase in passenger throughput on the existing 20,000 movements as a result of the move from business jet to commercial aircraft. Should negotiations not yield an appropriate outcome, MOD would reserve the right to terminate the existing concession and approach the wider market for a new operator.

Straight share sale

Under a straight sale of the asset in its existing condition, the ability to claw back any value subsequent to planning approvals being achieved becomes difficult to structure. The buyer is taking significant risk that the MOD does not wish to take under this option and therefore any benefit from that risk materialising lies with the buyer. As such, any mechanism structured whereby future revenues are payable to the MOD on sale will effectively be netting off future payments against any upfront payment in net present value terms. Therefore the total value to the MOD would be the same only changing the timing of the receipts.

It is EY's view, that from an aviation perspective, a developer is unlikely to offer any premium for the asset over and above the value of the existing business (with a premium for the optimisation potential of both revenue growth and cost savings) within the current planning envelope. However, they may take a holistic view that as a property developer, if he can't achieve the planning required for the airport, he may be able to develop the site into some sort of development which could generate cash, given the location of the site, e.g. housing, industrial park, etc. In this case, there may be an opportunity for a premium on existing value to be achieved upfront.

This view is supported by the experience at Farnborough, where the initial concession let to TAG was subsequently bought out by TAG buying the freehold for the site for £1m. TAG has since invested c.£45 million on developing the infrastructure and has the full rights to any future revenues. Further details of the TAG deal are included for reference in Appendix B.

In relation to the options for trying to share in future revenues, typically the use of "Deferred Contribution" allows the vendor to defer payment and/or maximise value of the sale by linking future payments to the achievement of specific event. This can come about through a number of scenarios, which typically include:

- ▶ **Different views on risk affecting the purchase price** – the buyer does not include a risk value in the purchase price as he is not willing to include take a view on achieving it. The vendor insists this is included in the price and that they should benefit from the uplift (in this case this could be planning). An agreement is made between the parties that on the risk crystallising, an element of deferred contribution is payable. The key in this

scenario is having the leverage (through a competitive bidding process) to negotiate such a deal.

- ▶ **Earn out uplift** – Differing views on the possible earn out potential of the business between vendor and buyer lead to an earnings target being set whereby some additional payment is due to the vendor.

5.2.6 Summary of key findings on claw back mechanisms

The key considerations for the MOD in structuring a claw back mechanism are as follows:

- ▶ The value for any mechanism will be maximised where the MOD is able to attract significant competition for the asset. This will provide leverage to negotiate the optimal outcome.
- ▶ The key trigger to value will be the successful achievement of planning approval. It is unlikely that any agreement will be able to be negotiated on what this triggers in terms of a price. This will most likely be negotiated with the private party on achieving planning approval. The MOD would need the ability to terminate at this point, in the event that it felt the negotiations were not delivering a VfM outcome. The termination costs could then be netted off against any future payment received from the new concession payment.
- ▶ The sharing mechanism needs to be structured to retain the incentive to improve performance, so that the quantum of claw back is reasonable and that the indicator considers all of the costs that the operator incurs, e.g. IRR rather than revenue.
- ▶ Any claw back mechanism needs to be considered in light of the impact on the upfront payment and hence the overall VfM for the MOD. It may be conservative to exclude a clawback mechanism from the VfM analysis where the risks around the claw back payments are significant.
- ▶ Claw back mechanisms are most suitably structured for this transaction through a concession, structured to allow the MOD to enter into negotiations to renew the concession following the achievement of planning approvals. This would release further value for the MOD and could be structured either as an upfront payment or via an annual concession fee.

6. Financial assessment of the business models

The indicative value of the Northolt site has been assessed based on the business models and suggested commercial structures described in Section 4. An outline methodology, a list of the key assumptions, indicative values, sensitivities and key considerations are shown below.

6.1 Methodology and assumptions

6.1.1 Methodology

The discounted cashflow method was used to calculate the indicative values of the business models. In order to calculate the indicative value, a 25 year cashflow forecast was built up using the assumptions detailed in Appendix A, and the cashflows were discounted at the assumed weighted average cost of capital (WACC) of a private sector investor.

The total value to the MOD of each option is generated from a number of sources. For Option 1, the value is generated from an upfront cash realisation and a terminal value whereas for Option 2 and 3, the value is generated from all four sources detailed below:

- ▶ **Upfront cash realisation** (Options 1, 2 and 3) – equivalent to the discounted future cashflows of the increased business jet movements. Under Option 2 and 3, the assumed profit margin is that of a private sector operator whereas under Option 1 the margin is significantly higher as the MOD will continue to bear the cost of operating the military operations. The value will be realised in the CSR period.
- ▶ **Second cash realisation from clawback** (Options 2 and 3) – represents the discounted future cashflows of the commercial passenger operations under a private sector operator. The uplift in value is net of the present value of the cashflows generated from the business jet operations i.e. the cashflows included in the calculation of the upfront cash realisation of Option 1 and 2. The second cash realisation is realised after the CSR period and could be structured either as a one-off payment at renegotiation or an ongoing concession fee.
- ▶ **MOD transferred cost** (Options 2 and 3) – the MOD currently bears the cost of operating the military operations at Northolt site. Therefore, under the scenario of a private sector operator completing the South-side operations, there will be a significant saving associated with the transfer of this cost to the private sector. The EY calculation of the transferred cost is provided in Appendix A.
- ▶ **Terminal value** (Options 1, 2 and 3) – represents the value of the airport following the development once it is transferred back to the MOD at the end of the agreed contract term.

6.1.2 Key assumptions

There were some key assumptions made in modelling the options, a detailed list of assumptions is provided in Appendix A, and a summary of the key assumptions is shown below.

- ▶ **Revenue** – Revenue from business jet operations was calculated using the MOD's assumptions⁹. Revenue from commercial aircraft is assumed to be £10 per passenger, this has been benchmarked against six comparable airports in the UK, as detailed in Appendix A.
- ▶ **EBITDA margin** – Assumed to be 11% for business jets and 32% for commercial aircraft. This has been benchmarked against comparable UK airports, as detailed in Appendix A.

⁹ Assumptions sourced from: "20120111-Future_Northolt-Potential_Income.xls"

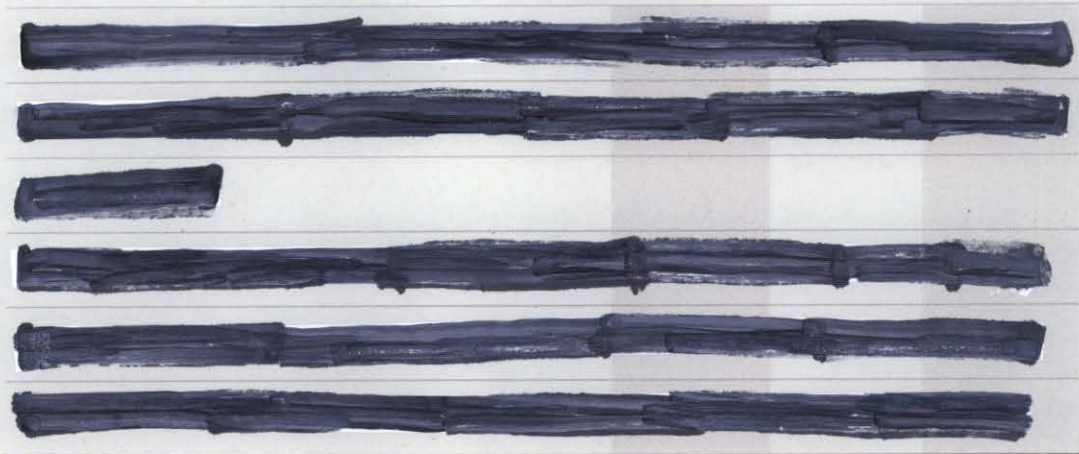
- ▶ **Passenger demand** – The demand for business jet movements is forecast to increase from 7,000 in 2012 to 20,000 in 2016, the ramp up in demand is delayed by one year compared to the MOD forecast to reflect the time required for a possible transaction/contract. Commercial movements are capped at 50,750 per annum and the ramp up in demand following construction is 70% in Year 1 (2019), 90% in Year 2 and 100% in Year 3, as per MM's analysis.
- ▶ **Capex requirement** – [REDACTED] for Option 1, [REDACTED] for Option 2 and [REDACTED] for Option 3. The forecast capex costs of all three Options include an estimated cost of providing additional hangars which will be required for expanding the business jet operations.
- ▶ **Discount rate** – Assumed a range of 8%, 9% & 10% for Options 1 and 2 and 9%, 10% & 11% for Option 3. This is based on a pre-tax real WACC of 9.2% which assumes: 15% (post-tax) cost of equity, 7% cost of debt and 60% gearing. The discount rate for Options 1 and 2 are kept consistent as both require planning consents, however the discount rate is higher for Option 3 due to the increased level of risk of the cashflows.
- ▶ **MOD transferred cost** – In the absence of accurate cost assumptions for the MOD's existing South-side operations, an estimate has been calculated for the possible cost of these operations and the respective cost saving of transferring this to a single private sector party. The calculation of the transferred cost assumes that a single private sector operator could deliver the same services, as the MOD, more efficiently. A detailed explanation of the calculation is provided in Appendix A. The RAF have provided high level cost saving assumptions for maintenance, running costs and personnel costs totalling [REDACTED] however these are deemed to be high level in nature and therefore the calculation, detailed in Appendix A, was deemed a better method for assessing the cost savings.
- ▶ **Terminal value** – A terminal value has been calculated to represent the present value of the airport following development once it is transferred to back to the MOD, the calculation assumes zero growth past 2036.

6.2 Indicative values

Based on the above assumptions EY have calculated a range of net present values for Northolt under the 3 business models as follows.

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

¹⁰ The MoD transferred costs are discounted at 3.5%.



The detailed output sheets from the cash flow model are provided in Appendix F.

6.3 Risk considerations

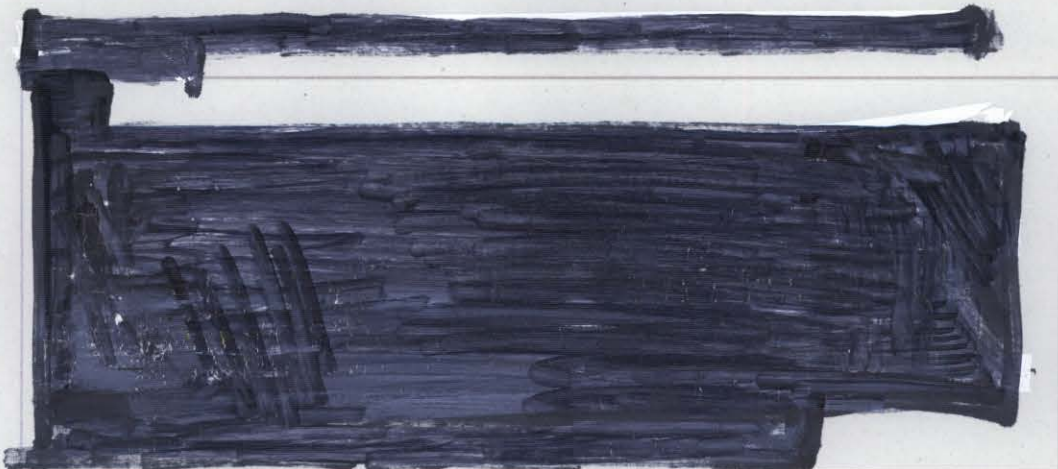
There are significant risks attached to these values which will impact the value of the receipt received by the MOD if the assumptions do not hold true, including:

- ▶ Receiving planning approval for the development.
- ▶ Achieving regulatory approval from CAA.
- ▶ Construction of the terminal facilities – both cost and time risk.
- ▶ Level of charges achievable at a new airport.

6.4 Detailed analysis of Options

6.4.1 Overview

Figure 7, below, shows the indicative values of Option 1, 2 and 3 and the incremental benefit to the MOD of each Option.



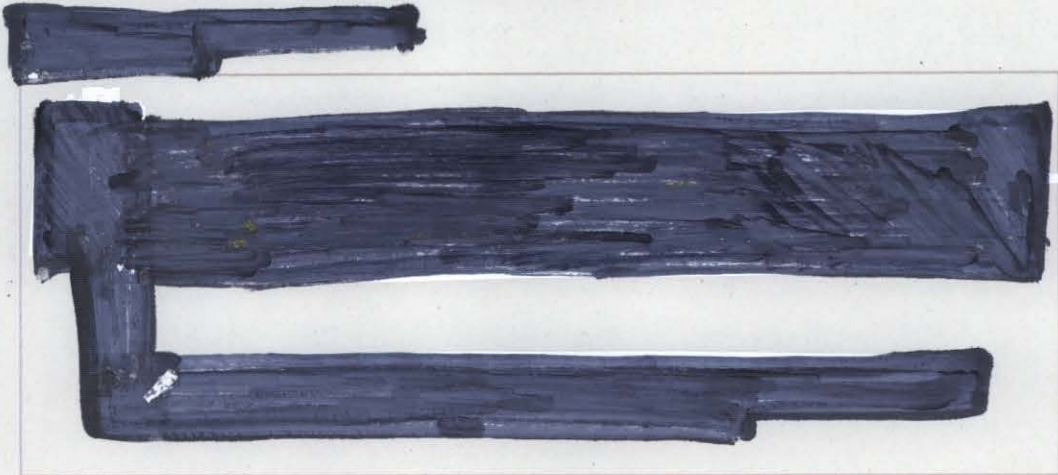
As illustrated above, Option 2 has the potential to drive additional value to MOD compared to Option 1. Option 3 has the potential to drive further value as a result of high passenger numbers and therefore revenues, however these are to be risk adjusted to reflect the higher

risk of achieving the revenue as airlines may be unwilling to use an unlicensed airport, and similarly pricing may be driven down.

6.4.2 Option 1

Sensitivity analysis

EY have run a number of sensitivities to assess the impact of changes to key input assumptions on the indicative value of Option 1. The following graphic illustrates the sensitive nature of the values with a mid NPV of [REDACTED]



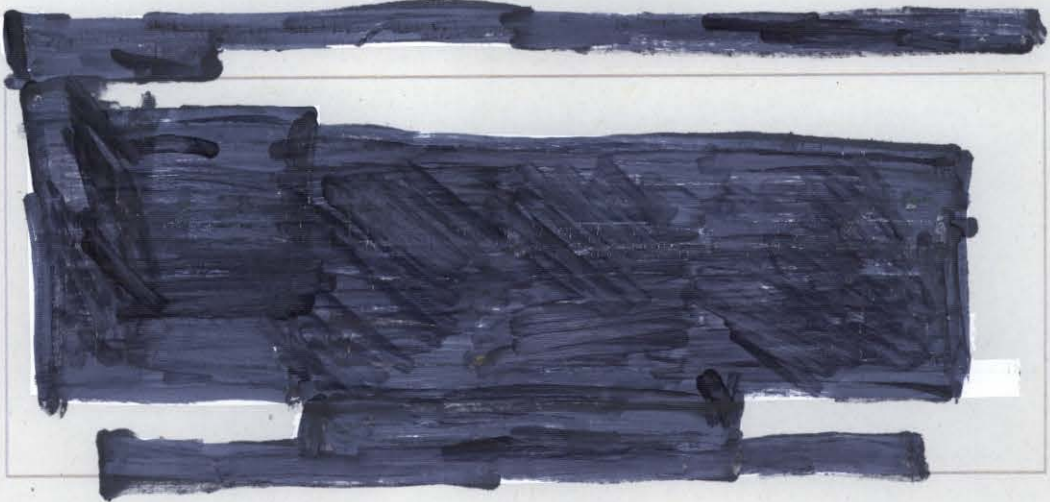
In order to understand the impact of changes to key assumptions on the total value, EY have run a number of sensitivities, a sample of which are:

- ▶ Sensitivity 1: Revenue from business jet movements – The MOD's revenue assumptions have been used to calculate the total business jet revenue under the base case. An upside and downside sensitivity has been run to understand the impact of a 20% increase and 20% decrease of total business jet revenues.
- ▶ Sensitivity 2: EBITDA margin – EBITDA margin 10% higher and lower than the base case has been tested.
- ▶ Sensitivity 3: Cap on business jet movements – A range of 20,000 - 28,000 business jet flights per annum has been applied. MM forecast total demand to be 20,000 business jet movements per annum, however the MOD believes that here may be an opportunity to increase this to 28,000.
- ▶ Sensitivity 4: Discount rate – A range of 7% - 10% has been applied to reflect the level of risk that investors will attach to the cashflows. The lower range of discount rates, compared to Options 2 and 3, reflects the potentially lower level of risk due to the reduced development costs.

6.4.3 Option 2

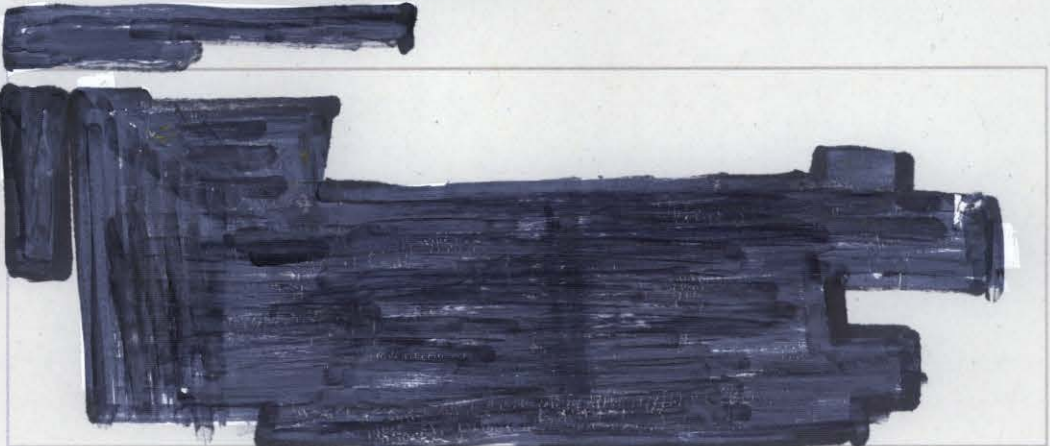
Overview

The total value can be shown as an incremental benefit from each stage of development, the MOD transferred cost and the terminal value. Figure 8 below shows the incremental benefit to the MOD of Option 2 under a range of discount rates.



Sensitivity analysis

The net present value range of the asset is very sensitive to a number of key assumptions, such as revenue charges, EBITDA margin achievable by the airport, development capex required to deliver the capacity, level of passengers, MOD cost saving and the discount rate. The following graphic illustrates the sensitive nature of the values with a mid NPV for the proposed business model of [REDACTED]



In order to understand the impact of changes to key assumptions on the total value, EY have run a number of sensitivities, a sample of which are:

- ▶ Sensitivity 1: London City Airport pricing – A range of [REDACTED] per commercial passenger has been applied. The base case assumption is [REDACTED] per passenger, which reflects the revenues at six UK airports which are of a similar size and nature. A downside sensitivity of [REDACTED] per passenger has been run which excludes the higher revenue per passenger charges at LCY.¹¹ The peak of the range, [REDACTED], is the revenue per passenger achieved at LCY which could be achieved if Northolt was operated under a similar model.
- ▶ Sensitivity 2: EBITDA margin on commercial passengers – A range of 23% to 49% has been applied. The base case assumption is 32%, which reflects the profit margin at six UK airports which are of a similar size and nature. A downside sensitivity of 23% has

¹¹ The five airports used to benchmark the downside sensitivity for revenue per passenger are: Aberdeen, Belfast, East Midlands, Leeds Bradford and Newcastle. Newcastle is removed from the EBITDA margin benchmark due to its significantly higher margin of 52%.

been run which excludes the higher profit margins at LCY and Newcastle. The high case is the EBITDA margin of LCY.

- ▶ Sensitivity 3: Development capex cost – A range of [REDACTED] has been applied. The capex cost of [REDACTED] represents MM's base case estimate plus an estimate for the cost of constructing additional hangars (required to expand the business jet operations and not included in MM's base case) and an estimate of the advisory costs associated with developing the site into a commercial airport. EY has been informed by RAF personnel on the site, that there may be an additional capex cost of [REDACTED] to segregate the civilian and military operations. MM does not believe that this additional cost is required, however it has been included as a downside sensitivity.
- ▶ Sensitivity 4: Commercial passenger growth – MM's demand forecast have been used as the base case scenario which assumes that the ramp up in demand following construction is 70% in Year 1 (2019), 90% in Year 2 and 100% in Year 3. To understand the impact of a slower ramp up in demand, a downside sensitivity has been run with the following growth profile: 25% in Year 1 (2019) and increasing by ten percentage points per annum up to 100% in Year 9.
- ▶ Sensitivity 5: Cap on commercial flights – An upside/downside sensitivity which increases/decrease the civilian movements by 20% has been applied, giving a range of 40,600 – 60,900 commercial flights per annum. MM forecasts total demand to be 50,750 commercial movements per annum, however maximum busy-hour throughput capacity is greater than 50,750 and therefore there is an opportunity to increase the number of civilian movements beyond this.
- ▶ Sensitivity 6: Transferred cost – A range of [REDACTED] has been applied for the net annual MOD transferred cost. The base case assumption of [REDACTED] assumes that a single private sector operator can deliver the required services 30% more efficiently than the MOD. The downside sensitivity assumes that the private sector operator does not achieve any efficiency savings i.e. the cost savings are equal to the estimated operating costs of a private sector operator less the payment for military aircraft movements.
- ▶ Sensitivity 7: Discount rate – A range of 8% - 10% has been applied to reflect the level of risk investors will attach to the cashflows. The range is based on the calculated WACC as detailed in Appendix A.

London City Airport model comparison

The NPV is sensitive to all of the items illustrated above; however as an example, the NPV is particularly sensitive to the revenue per commercial pax achievable by a private sector operator under a concession at Northolt – the revenue per commercial pax has been benchmarked against a sample of airports which are of a similar size and nature to the proposed Northolt operation. The data shown in the above table is based on the assumption of revenue per commercial pax of [REDACTED] however, there is a significant opportunity to make Northolt into a London City type model obtaining higher charges from its users due to its location inside the M25, easy links to central London and proximity to Heathrow. Therefore, should the concessionaire be able to increase charges to a level closer to that of London City then this would increase the value, and hence return, to MOD. Assuming charges per passenger of [REDACTED] then the implication on Option 2 is shown below.

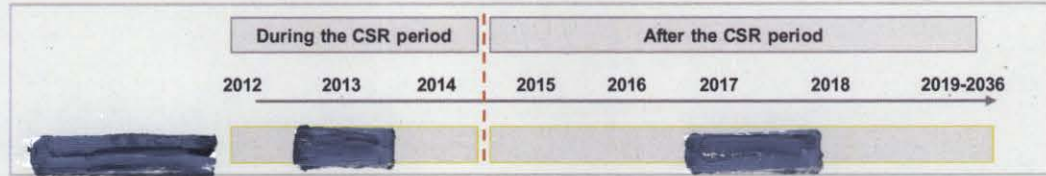
[REDACTED]

6.5 CSR impact

It is important to consider the split of total effective realisation for MOD during the CSR period (up to 2014) and after. If a suitable transaction is reached in 2012/2013 the upfront cash realisation could likely be received in the next 1-3 years (i.e. during the CSR period); given the length of time to obtain planning consents and the appropriate licensing requirements the follow-on transaction would most likely release value only after the CSR period. The cost savings from the MOD transferred costs however would be realised over the whole forecast period, [REDACTED] per annum which totals [REDACTED] (discounted at HMT Green Book discount rate of 3.5% real) saving over the CSR period.

Figure 12: MOD transferred costs (discounted at 3.5%)

Source: EY Analysis



Therefore, the total effective realisation (cash receipts and cost savings) for MOD of the three options can be split into during and after the CSR period as below – the range is due to the range of discount rates used. The terminal value is not included in the table below.

[REDACTED]

¹² The MoD transferred costs are discounted at 3.5%.

6.6 Benchmark comparison transactions

It is difficult to compare the Northolt opportunity to precedent transactions due to the unique nature, location, access and ownership of the Northolt site. However precedent transactions have been assessed for business jet operations and commercial airports. Appendix B details the transactions that have been assessed but the key messages from this comparison in relation to each business model are outlined below:

- ▶ Business jet comparators – A civilian operated business jet airport valuation is heavily dependent on the particular assets and conditions surrounding the airport in question. The precedent transactions show valuations of [REDACTED]¹³ but these were based on movements of 28-70,000 movements. Therefore EY's assessment of value of [REDACTED] appears reasonable given the considerably lower movement level but close proximity to central London.
- ▶ CAA licensed commercial passenger airport comparators – CAA licensed commercial airports have a large range of precedent valuations depending on capex requirements, airline customers, location, etc. Based on the benchmark recent majority (or full) share sale transactions, this gives an EBITDA valuation multiple in the region of 12x to 15x. A high growth potential airport such as that of Northolt could expect a valuation towards the higher end of this range. Based on 50,750 commercial movements and the operating assumptions outlined in Appendix A there is a forecast EBITDA of [REDACTED] – using a 12-15x multiple this would give an indicative valuation of [REDACTED], based on a range of recent benchmarked transactions outlined in Appendix B. This valuation is assumed for an operating commercial airport with certainty of cashflows with low planning risk – the commercial passenger airport operations at Northolt however retain a significant element of planning risk and there is a low level of planning certainty for future development. As a result EY's assessment of base case value of [REDACTED] (the total indicative value to MOD less the MOD transferred cost of Option 2 or 3) appears reasonable given the uncertainty and risks associated with the cashflows. After completion of the development of the site, it is likely that it could be sold in this 12-15x multiple value range.

6.7 Analysis of alternative options

As outlined in Section 4.5, the *Project Ark* team have discussed and assessed alternative options as part of the study. Three of these have been assessed quantitatively, the results of which are discussed below.

6.7.1 Short term lease with upfront monetisation

Using the business model described in Section 4.5.1, if the MOD were to let a 10 year lease under the Option 1 assumptions (MOD retain operational control and let a lease/concession for operations, increase movements from 7,000 to 20,000 p.a., £5m hangar capex, 70% EBITDA margin, 8-10% discount rate, etc) then EY estimate a upfront cash realisation of [REDACTED] could be generated – being a monetisation of landing and parking charges over the next 10 years.

6.7.2 Short term lease with ongoing landing charges and tiered incentive sharing mechanism

Section 4.5.2 details an alternative short-term lease model where the MOD retains control of the site and continues to receive landing charges, hangar rental charges, parking charges, fuel levy (i.e. all charges currently received from LCY) and offers a tiered revenue sharing mechanism to incentivise the private sector operator to increase movements.

To calculate an indicative value that could be returned to MOD under this scenario, EY have assumed the following assumptions:

[REDACTED] was invested for the acquisition and development of Farnborough, as there is limited capex [REDACTED] associated with our proposed Option 1 the upfront value would be higher in direct comparison to that obtained from Farnborough.

- ▶ It is assumed that no capital expenditure is required (military hangar space can be reorganised to meet the demand of increased business jet movements) and therefore no planning approvals are needed.
- ▶ A 10 year short-term lease for LCY (or similar private operator) to operate the Jet Centre whilst making a return on passenger services.
- ▶ MOD retains operational responsibility of the South-side of the site for both military and commercial use thereby continuing to incur the significant costs of the ATC, fire service, etc.
- ▶ MOD income continues to be received by MOD with a tiered revenue sharing mechanism that incentivises the private sector to increase movements. A management incentive fee has been assumed as follows:
 - ▶ Up to 10,000 movements: 10% of commercial income.
 - ▶ Up to 19,999 movements: 11% of commercial income.
 - ▶ Over 20,000 movements: 12% of commercial income.
- ▶ The private sector operator currently bears the cost and receives an income for passenger services at the site, it is assumed that this would be retained and the revenue sharing mechanism would be an upside incentive for the private sector party. Therefore, the MOD is assumed to incur no additional incremental cost from the increased movements, so the forecast income is as per that provided by MOD but delayed 1 year and with inflation stripped out.
- ▶ It is assumed that there would be some maintenance cost associated with the ongoing operations, hence 10% of income has been assumed to be incurred as per in Option 1, 2 and 3.
- ▶ As the MOD are retaining responsibility for movements at the site and no funding has been required by the private sector for development, to calculate the NPV of future cashflows, the HMT Green Book discount rate of 3.5% real has been employed.

The ongoing income to MOD and likely income for a private sector operator from this model is shown below.



The NPV of these cashflows for the 10 year lease (2012 to 2021) is [redacted]

6.7.3 Option 1 transaction followed by Option 2 enhancement

This Section shows that Option 1 would release the maximum upfront value and that Option 2 and 3 deliver increased total effective realisation for the MOD. It would not however, be possible to combine these two models to obtain an increased value outcome because the responsibility of costs changes and therefore a reimbursement of value would be required to the private sector at a follow on transaction. This is explained in more detail below.

- ▶ Should MOD enter an agreement under Option 1, the costs associated with running the South-side of the site remain with MOD thereby generating a high value to MOD (monetisation of existing revenue stream whilst increasing to 20,000 movements).
- ▶ At the point of transferring to Option 2 (or Option 3) this would transfer South-side operations to the private sector which would incur significant costs for the private sector therefore decrease the value of the second phase.
- ▶ As the value of the second phase (i.e. commercial passenger model) is the future cashflows under the developed model less the cashflows already paid in the upfront value, if the upfront value is high (i.e. under Option 1) this would decrease the second cash realisation from clawback, and likely make the second payment negative, i.e. being a reimbursement of value to the private sector at the time of renegotiation.
- ▶ EY estimate that if this approach were taken, the upfront value would be [REDACTED] and the second payment at the transfer of costs to the private sector would require a payment from the MOD to the concessionaire of [REDACTED]. EY assume that a cash payment from MOD would be unattractive to the MOD hence has not been considered further.

6.8 Summary

The financial analysis suggests that value can be created for the MOD through a civilian operated CAA licensed airport model (Option 2). In EY's view this value could be maximised by positioning the deal in a way which provides a West London equivalent to LCY. Given the location, the airport could gain a premium if positioned as a connection for the regions to Heathrow and as a destination for business travellers for West London, the City and the Thames Valley.

7. Conclusions and recommendations

7.1 Summary of business models

The key findings in relation to the business models assessed are outline below.

7.1.1 Option 1 – MOD 20k Business Jet Model – MOD operated

This option is to increase the current business from 7,000 business jet movements to 20,000, which the RAF inform us would not have any military impacts and would not impact the cost to the MOD of running the airfield, but it is assumed that an additional hangar would be required. The military would continue to operate the airport and effectively monetise the expanded Jet Centre business.

This is the least risky option from a development risk perspective (i.e. planning risk, development/construction risk, surface transport network integration risk, stakeholder risk and airspace management risk, etc.) although some planning risk still remains as the additional hangars would require the appropriate planning consents.

Structured as a long term concession or lease, this could release an upfront cash receipt to the MOD in the range of [REDACTED] and has an estimated total value of [REDACTED]

7.1.2 Option 2 – CAA licensed 50k commercial aircraft model – Privately operated

The technical assessment of the site has concluded that the optimal business model for developing the site under a CAA license is a commercial aviation operation limited to c.50,000 commercial movements per year. The landing distance of the runway under this model would be restricted to 1,354m due to the significant physical obstructions on the approach, therefore the aircraft type would be limited to turboprops and small jets carrying an average of 65 passengers.

Structured as a long term concession, with the ability of the MOD to step in on achievement of planning consent and negotiate an increase in the concession fee to reflect the rise in the cap on commercial movements to 50,750. This allows the MOD to share in the future revenues of the airport, structured through an additional upfront payment or an annual concession fee.

On this basis the total indicative value to MOD under this option, assuming an average regional airport pricing structure, is [REDACTED]. However, given the location of Northolt in the context of its proximity to London and Heathrow, it could achieve a premium similar to that of London City Airport. On this basis, the value to MOD could increase to [REDACTED]

7.1.3 Option 3 – MOD 50k commercial aircraft model – Privately operated

The business model described under Option 2 could also be applied to a military airport structure. This would work in the same way as Option 2 in terms of the day to day operating model and the concession structure. The key differences are:

- ▶ The absence of CAA license requirements means that a longer runway could be used at the site, therefore allowing larger planes (with an average of 75 passengers) to use the airport, thus increasing potential revenue.
- ▶ The absence of CAA license requirements offsets the increased development costs of a larger passenger terminal with a net increase of capex costs.
- ▶ The benefits of larger aircraft are offset by the risk of running an unlicensed runway. There is a risk that some airlines may choose not to use the runway where a CAA

license is not in place, hence creating greater risk over the revenues. EY's assessment has considered this implication through an adjustment to the discount rate.

On this basis the total indicative value to MOD under this option, assuming an average regional airport pricing structure, is [REDACTED]. However, given the location of Northolt in the context of its proximity to London and Heathrow, it could achieve a premium similar to that of London City Airport. On this basis, the value to MOD could increase to [REDACTED].

7.2

- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]
- ▶ [REDACTED]

Conclusions and recommendations

[REDACTED]

▶ [REDACTED]

▶ [REDACTED]

[REDACTED]

Appendix A Detailed assumptions for financial analysis

This appendix outlines the detailed assumptions of EY's financial analysis of the commercial options for the development of RAF Northolt. There are some general assumptions that are consistent across all models, these are as follows:

- ▶ All numbers and discount rates are in 2012 real terms excluding the effects of inflation.
- ▶ The valuations have been calculated from a discounted cashflow method using a discount rate calculated from the weighted average cost of capital (WACC) under each scenario.
- ▶ Tax has been ignored in the analysis with the cashflows being used before tax and the discount rate being a pre-tax WACC.
- ▶ We have used a 25 year assessment period commencing in 2012 with a terminal value applied to the cashflows to represent future asset value (with assumed zero growth past 2036).
- ▶ It is assumed that the income from landing charges, parking charges and other income from site operations are transferred to the concessionaire (currently received by MOD), in return for an upfront payment and/or ongoing concession fee – transferring the income to the private sector is simply a monetisation of the existing cashflows obtained from operations.

Detailed technical assumptions from MM should be viewed separately in Appendix D. The detailed assumptions used in EY's financial modelling for each option are discussed below.

Option 1 – MOD 20k business jet model – MOD operated

This model is to increase the Jet Centre movements under a private sector operator to 20,000 movements per annum under the ownership of the MOD, thereby not requiring a CAA license. We assume that all operations on the South-Side (e.g. ATC, fire, security, maintenance, etc) continue to be operated by the MOD – the MOD therefore continue to incur the significant ongoing cost of operating the site.

	Upfront payment or ongoing concession fee
Military use	7,000 MOD movements with operational costs retained by MOD
Demand	<p>The business jet movements are assumed to increase as follows:</p> <ul style="list-style-type: none"> ▶ 2012: 7,000 ▶ 2013: 10,000 ▶ 2014: 13,000 ▶ 2015: 16,000 ▶ 2016 onwards: 20,000 <p>The forecast increase in movements has been delayed by one year, compared to the forecast provided by MOD, this is to reflect the time required for a transaction/new contract and because the MOD forecast are in fiscal rather than calendar years.</p>
Revenue	<p>MOD forecast revenue including:</p> <ul style="list-style-type: none"> ▶ Landing charges ▶ Parking charges ▶ Premier Passenger Service ▶ Hangar rental charges

► Fuel levy

Operating costs MOD carry the cost of operating the site (for both military and civilian movements) and we are informed that current costs of running the civilian operations are nil for the MOD – they use irreducible spare capacity. There will however be unquantifiable costs to the MOD of the business jet operations and costs for LCY to run the passenger terminal.

No data has been provided from LCY for the operating costs of the airport, as a result the EBITDA margin has been assumed to be 70% being consistent with that used in the *Project Noah* report.

Capex costs It has been assumed that the only capex requirement is for the construction of additional hangars, the estimated cost for this is [REDACTED] to be incurred in 2013.

Annual maintenance capex: assumed to be 10% of EBITDA

Discount rate Assumed range of discount rate of 8-10% real, based WACC calculation using the following assumptions:

- 15% equity returns (post-tax)
- 7% debt cost
- 60% gearing

Adjusting the equity returns to pre-tax levels and applying the WACC calculation this gives a nominal pre-tax WACC of 11.9%, removing assumed inflation of 2.5% equates to a pre-tax real discount rate of 9.2%

Option 2 – CAA licensed 50k commercial aircraft model – Privately operated

This model assumes a long-term concession, increase of business jets movements from the current 7,000 p.a. level to 20,000 by 2015 with the concession being renegotiated in 2019 when planning permissions are granted for a full development of the site to 50,750 commercial passenger movements p.a.

It is assumed that the concession would be structured so that all operations on the South-Side (e.g. ATC, fire, security, maintenance, etc) are transferred to the private sector (i.e. the concessionaire) but the MOD would retain the right to use the site in return for a fixed cost/charge per landing paid to the concessionaire. A key consideration for this option should be in the cost savings that the MOD would make in the event of transferring operational responsibility to a single private sector operator. This cost saving is hard to forecast for the MOD/RAF due to the complex level of fixed/variable costs and interlinked costs with other parts of running the site. The RAF have provided high level cost saving assumptions for maintenance, running costs and personnel costs totalling [REDACTED]. However these are deemed to be high level in nature and therefore the calculation above using industry benchmarks was deemed a more appropriate, market based method for assessing the cost savings.

The detailed assumptions are shown below.

	Upfront payment – business jets to 20k	Secondary payment or ongoing concession fee – larger commercial passenger development
Military use	7,000 military movements, assume charges are paid to concessionaire – assume same landing charge (£900 per landing) as per business jets as proxy for rental/lease charge	7,000 MOD movements, assume charges are paid to concessionaire – assume same landing charge (£900 per landing) as per business jets as proxy for rental/lease charge
Demand	Business jet movements as forecast by	Commencing in 2019 after planning approvals and construction of required infrastructure.

the MOD:

- ▶ 2012: 7,000 movements
- ▶ 2013: 10,000 movements
- ▶ 2014: 13,000 movements
- ▶ 2015: 16,000 movements
- ▶ 2016 onwards: 20,000 movements

Forecast demand of 50,750 commercial aircraft movements p.a. equating to 3.3mppa (based on 65 pax per aircraft).

MM assume ramp-up of demand to be:

- ▶ Year 1 (2019) = 70%
- ▶ Year 2 (2020) = 90%
- ▶ Year 3 (2021) = 100%

It is assumed that business jet movements will use up any spare capacity, below 50,750, not taken up by commercial movements i.e. the ramp up of commercial movements will be combined with a gradual slow-down of business jets. For example, in 2019 business jet movements are forecast to be 15,225 (30% of 50,750).

Revenue	<p>Revenue forecasts provided by MOD includes:</p> <ul style="list-style-type: none"> ▶ Landing charges assumed as an average of £900 per landing ▶ [REDACTED] ▶ Premier Passenger Service as forecast by MOD for up to 20k movements ▶ Hangar rental charges fixed per the NetJets contract ▶ [REDACTED] ▶ [REDACTED] <p>The landing fee has been benchmarked against other comparable business jet sites and whilst the landings fees charged at Northolt are marginally higher than those at other similar business jet airports (Biggin Hill, Farnborough and Oxford Kidlington Airport, Frankfurt-Egelsbach) they can be considered competitive given the location of the airport and its ability to charge a premium given proximity to M25 and access to London.</p>	<p>Revenue per passenger for commercial passenger aircrafts has been benchmarked against a sample of comparable sized commercial airports:</p> <ul style="list-style-type: none"> ▶ Aberdeen airport – 2.8mppa ▶ Belfast airport – 4mppa ▶ East Midlands airport – 4.1mppa ▶ Leeds Bradford airport – 2.7mppa ▶ Newcastle airport – 4.3mppa <p>These comparable airports have average charges of £10.47 per passenger. It should be noted however that these airports are all regional airports – Northolt would likely be able to charge a premium for its location and connectivity to central London.</p> <p>London City have high charges of £24.87 per passenger due to their model of business passengers and proximity to the City of London. We have run sensitivities assuming that LCY charges could be realised but for our base case assumption we have assumed revenue per passenger of [REDACTED] this is largely based on the benchmarked sample charges with a proportion of LCY charges to reflect the unique location and opportunity of Northolt – this seems reasonable considering charges at Heathrow of £21 per pax, Luton of £11 per pax, Gatwick of £14 per pax and London City of £25 per pax</p>
Operating costs	<p>EBITDA margin assumed to be 11.0%, benchmarked against comparable business jet operations:</p> <ul style="list-style-type: none"> ▶ Farnborough airport ▶ Biggin Hill airport ▶ Oxford Kidlington airport ▶ Blackbushe airport 	<p>EBITDA margin assumed to be 32.3%, benchmarked against:</p> <ul style="list-style-type: none"> ▶ Aberdeen airport – 2.8mppa ▶ Belfast airport – 4mppa ▶ East Midlands airport – 4.1mppa ▶ London City airport – 2.8mppa ▶ Leeds Bradford airport – 2.7mppa ▶ Newcastle airport – 4.3mppa
MOD transferred costs	<p>In the absence of accurate cost assumptions for operating the existing South-side operations, EY has estimated what they forecast could be the possible cost of these operations and the respective cost saving of transferring this to a single private sector party under a concession. EY has done this by</p> <ol style="list-style-type: none"> 1. The operating costs from the existing revenue of [REDACTED] has been calculated using the EBITDA margin benchmarks (11%). This translates to an assumed operating cost (for a private sector operator) [REDACTED] per annum. 2. It is likely that the private sector would be able to operate the South-side services more efficiently than the public sector under the existing arrangement. LCY operators have indicated that savings of 30% could be achieved, therefore this cost of [REDACTED] equates to [REDACTED] 	

an annual cost of the MOD running the site of [REDACTED]

3. If operations are transferred to the private sector and this cost saving is realised then the MOD would need to pay a rental cost to use the site. Using the above assumptions this is [REDACTED] per annum, so the net benefit to MOD of transferring the South-side operations to a private sector operator is forecast to be [REDACTED] per annum [REDACTED]
4. Discounting this annual cost saving for 25 years at the HMT Green Book discount rate (3.5%) this equates to [REDACTED] NPV cost saving over the forecast period.

Capex costs	Stage 1 capex costs from MM totalling [REDACTED] for:	Stage 2 capex costs from MM totalling [REDACTED]
	<ul style="list-style-type: none"> ▶ Removal of existing obstacles & traffic control ▶ Runway markings ▶ New AGL to Runway & Southern Taxiways ▶ Modifications to Approach lighting ▶ New PAPI, CCRs and IRVR ▶ Relocation of ILS GP antennae ▶ Consultants Fees and risk / general contingency <p>Profile of costs assumed to be:</p> <ul style="list-style-type: none"> ▶ 2012: 33% of total cost in year 1 due to length of time to gain Government approval, consulting with CAA and preparing tender documents ▶ 2013: 66% of total cost with bulk of construction cost incurred in year 2 <p>MM's capex estimate does not include the cost of additional hangars that are required for the expansion of the business jet operations. The estimated cost for this is [REDACTED] to be incurred in 2013.</p> <p>Annual maintenance capex: assumed to be 10% of EBITDA</p>	<ul style="list-style-type: none"> ▶ New Passenger Terminal Building ▶ Refurbishment of existing ATC ▶ New Security Control Posts ▶ Reconfiguration of existing fencing, roads etc. ▶ Removal of existing obstacles ▶ Ground stabilisation ▶ Runway, apron & taxiway strengthening ▶ RESA improvement ▶ Jet blast earth bank ▶ Additions/upgrades of existing infrastructure ▶ Communication link between ATC and fire stations ▶ New Access Road to Runway from RFFS ▶ Surface Car Parking (500 spaces) ▶ Forecourt to new terminal building ▶ Ground Handling Building ▶ Hardstanding / Forecourt to GHB ▶ Widening of road ▶ Decommission / remove existing traffic control ▶ Consultants Fees and risk / general contingency <p>There are additional capex costs required to allow Code D aircraft to use the site estimated by MM (additional terminal, taxiway and apron), totalling [REDACTED]</p> <p>Profile of Stage 2 costs assumed to be spread evenly over 2017/2018 due to a 6 month tender period, 12 month construction and 6 month testing period</p> <p>Annual maintenance capex: assumed to be 10% of EBITDA</p>
Discount rate	<p>Assumed range of discount rate of 8-10% real, based WACC calculation using the following assumptions:</p> <ul style="list-style-type: none"> ▶ 15% equity returns (post-tax) ▶ 7% debt cost ▶ 60% gearing <p>Adjusting the equity returns to pre-tax levels and applying the WACC calculation this gives a nominal pre-tax WACC of 11.9%, removing assumed inflation of 2.5% equates to a pre-tax real discount rate of 9.2%</p>	<p>Assumed range of discount rate of 8-10% real, based WACC calculation using the following assumptions:</p> <ul style="list-style-type: none"> ▶ 15% equity returns (post-tax) ▶ 7% debt cost ▶ 60% gearing <p>Adjusting the equity returns to pre-tax levels and applying the WACC calculation this gives a nominal pre-tax WACC of 11.9%, removing assumed inflation of 2.5% equates to a pre-tax real discount rate of 9.2%.</p> <p>Assuming construction commences in 2017, this scenario is discounted to 2017 at 8-10%, but from 2017 to 2012 discounted at HMT Green</p>

Option 3 – MOD 50k commercial aircraft model – Privately operated

The assumptions under this option are largely the same as the Option 2 but the key difference is that it remains under military control therefore assumes that no CAA licence is required. Under this assumption the runway can remain at 1,684m and thus is able to take larger aircraft carrying more passengers generating more income to MOD.

The only differences in this model in comparison to Option 2 are:

- ▶ Due to the longer runway, larger aircraft are able to land at the site, increasing the average passengers number per aircraft to 75. This has the impact of increasing passenger numbers by 0.5mppa to 3.8mppa, with respective impact on revenue.
- ▶ The larger aircraft increase passengers per flight but we assume that the operating costs would roughly remain the same, therefore we have applied an increase of EBITDA margin to reflect this, we assume that the margin would increase from 32.3% to 35.6% (10% increase of margin).
- ▶ The Stage 2 capex costs increase by [REDACTED]. This increase the total capex requirement for Option 3 to [REDACTED].

Key constraints/limitations

There are some key limitations and exclusions to the financial analysis that we have completed, these are outlined below:

- ▶ The MOD cost saving (under Option 2 and 3) is hard to forecast for the MOD/RAF due to the complex level of fixed/variable costs and interlinked costs with other parts of running the site – the RAF have provided high level cost saving assumptions for maintenance, running costs and personnel costs totalling [REDACTED] however these are deemed to be high level in nature and therefore the calculation in the table above using industry benchmarks was deemed a better method for assessing the cost savings. The cost saving that could be achieved from private sector operations is a key driver to the overall realised value to MOD, therefore if the assumed cost savings are overstated (due to the inclusion of fixed costs) the overall value to MOD may be overstated.
- ▶ There are some capex costs that personnel on-site inform us would be required to segregate the civilian and military operations under the options where a civilian operator operates the airfield (new ATC tower, new fire & rescue facility, new runway shoulders), however MM do not believe that these costs are required as part of the proposed approach as it is assumed that the existing infrastructure would be used and just upgraded. Therefore, these costs (totalling [REDACTED]) have not been included in the calculations but are shown as a downside sensitivity.
- ▶ There has been no discussion with NATS or assessment of the airspace surrounding Northolt, this has not been part of the scope of this study. This has been considered in the technical assessment so to not recommend a business case that will certainly conflict with Heathrow operations but further work is required on an assessment of the airspace and interaction of Northolt operations with Heathrow. This is a significant and key piece of work to inform the suitability of the proposed business case.
- ▶ The cost estimates exclude the following:
 - ▶ Value Added Tax / Business Tax
 - ▶ Legal Fees

- ▶ Land Acquisition
- ▶ Capital Allowances allocation
- ▶ Client, Stakeholder and Operator costs
- ▶ Inflation
- ▶ Fit-Out of Retail / Food & Beverage areas within Terminals (assumed by Concessionaire)
- ▶ Aviation Fuel Facilities & Fuel hydrant system - Works to be undertaken and funded by Concessionaire
- ▶ Specialist fit-out of the VCRs by CAA/NATS (c. £1.5m)
- ▶ Vehicles/mobile equipment
- ▶ Flight Catering Facilities
- ▶ Passenger Boarding Bridges & fixed links
- ▶ Additional new Stands / Aprons & associated equipment to new Terminal Building
- ▶ Fixed Ground Power
- ▶ Fire hydrant system
- ▶ Safeguarding for future expansion
- ▶ Write-offs/accelerated depreciation/capitalised interest
- ▶ Tenant decant costs/re-location expenses
- ▶ Compensation payments to tenants (including redundancy costs)

Appendix B Precedent transactions

This appendix outlines the precedent transactions used to support the valuation of both a CAA licensed commercial airport and a civilian operated business jet airport as part of the proposed business model.

Civilian operated business jet airport

In order to validate the business jet airport valuation, precedent transactions for airports of this nature were sought. The three transactions identified are for airports in proximity to the financial centres of London and Frankfurt and are therefore highly comparable to both current and potential future business jet operations at Northolt. The three transactions are detailed as follows:

Airport	Transaction value	Other airport information
Farnborough - 2002 (UK)	<ul style="list-style-type: none"> ▶ £2m for a 25 year lease, £1m for acquiring the airport freehold and £45m of investment ▶ Purchased by business jet operator TAG Aviation ▶ Timeline of transaction: <ul style="list-style-type: none"> ▶ 1997: TAG Aviation wins government tender process ▶ 1999: End of Planning Process ▶ 2003: End of redevelopment, £2m paid for 25 year lease of airport and agreement of 99 year license to operate as fully CAA compliant airport ▶ 2007: £1m paid to acquire freehold 	<ul style="list-style-type: none"> ▶ Subject to an Air Traffic Movement cap of 28,000 per year at the time of transaction (In 2011 a phased increase to 50,00 by 2019 was granted) ▶ CAA ordinary license holder with 2,400m asphalt runway ▶ Location of Air Traffic Investigation Branch and BAE Systems Farnborough ▶ Biannually hosts the international aviation trade fair the 'Farnborough Air Show'
Oxford Airport - 2007 (UK)	<ul style="list-style-type: none"> ▶ £40 million ▶ Purchased by property investors (Reuben Brothers) 	<ul style="list-style-type: none"> ▶ 36,316 Air Traffic Movements in 2009 ▶ CAA ordinary license holder with 1,592m and 760m asphalt runways ▶ Location of Oxford Aviation Academy
Frankfurt-Egelsbach - 2009 (Germany)	<ul style="list-style-type: none"> ▶ £30.5 million (including a £3.5m payment and £27m of investment) ▶ Purchased by business jet operator Netjets 	<ul style="list-style-type: none"> ▶ Air Traffic Movements approximately 70,000 per year ▶ 1,400m asphalt and 670m grass runways ▶ Planned 270m runway extension

CAA licensed commercial airport

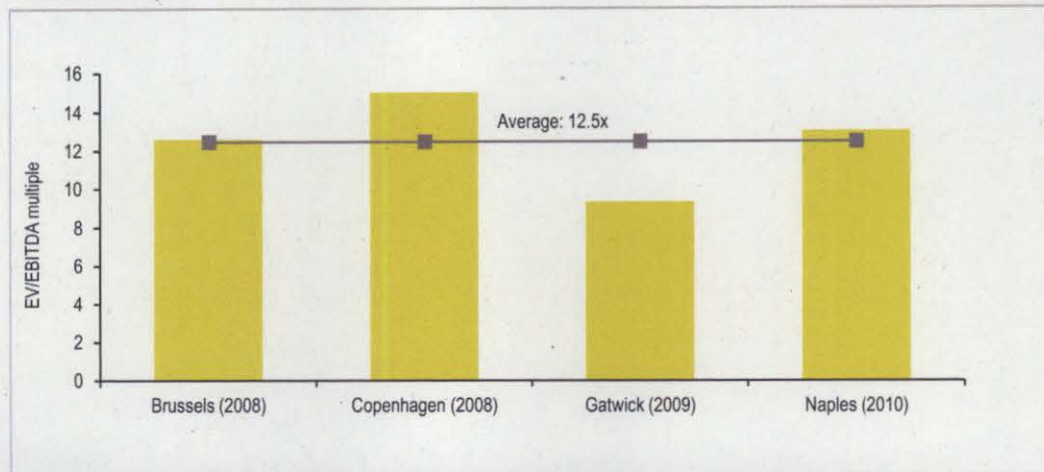
A benchmark of recent commercial airport transaction multiples has been used to support the valuation of the sale of the airport for CAA licensed commercial airport operations.

Transactions occurring before 2008 have been excluded from the benchmark as these transactions are at higher EV/EBITDA multiples due to favourable funding market conditions (which are no longer available) and the buoyant transaction market. Minority stake sales have also been excluded due to lack of comparability. There are few airport transactions post 2008 which fit these criteria due to the lack of available financing and investor appetite. The Gatwick Airport sale in 2009 is at a depressed multiple due to the aforementioned conditions as well as the forced nature of the sale by the airport regulator.

The Enterprise Value (EV) / EBITDA multiples for these selected post 2008 precedent transactions are illustrated in the graph below.

Figure 13: Comparable sale transactions

Source: EY analysis



Note: Brussels (2008) and Copenhagen (2008) transactions were between Macquarie Airports and Macquarie European Infrastructure Fund 3. Majority share sales only, minority sales excluded from the above.

Conclusions

It is difficult to compare the Northolt opportunity to precedent transactions due to the unique nature, location, access and ownership of the Northolt site. The key messages from this comparison in relation to each business model is outlined below:

- ▶ Business jet comparators – A civilian operated business jet airport valuation is heavily dependent on the particular assets and conditions surrounding the airport in question. The precedent transactions show valuations of [REDACTED] but these were based on movements of 28-70,000 movements. Therefore EY's assessment of value of [REDACTED] appears reasonable given the considerably lower movement level but close proximity to central London.
- ▶ CAA licensed commercial passenger airport comparators – CAA licensed commercial airports have a large range of precedent valuations depending on capex requirements, airline customers, location, etc. Based on benchmark recent majority (or full) share sale transactions, this gives an EBITDA valuation multiple in the region of 12x to 15x. A high growth potential airport such as that of Northolt could expect a valuation towards the higher end of this range. Based on 50,750 commercial movements and the operating

¹⁴ [REDACTED] was invested for the acquisition and development of Farnborough, as there is limited capex [REDACTED] associated with our proposed Option 1 the upfront value would be higher in direct comparison to that obtained from Farnborough

assumptions outlined in Appendix A there is a forecast FBITDA of [REDACTED] – using a 12-15x multiple this would give an indicative valuation of [REDACTED] based on a range of recent benchmarked transactions outlined in Appendix B. This valuation is assumed for an operating commercial airport with certainty of cashflows with low planning risk – the commercial passenger airport operations at Northolt however retain a significant element of planning risk and there is a low level of planning certainty for future development. As a result our assessment of base case value of [REDACTED] the total indicative value to MOD less the MOD transferred cost of Option 2 or 3) appears reasonable given the uncertainty and risks associated with the cashflows. After completion of the development of the site, it is likely that it could be sold in this 12-15x multiple value range.

Appendix C Detailed assessment of commercial structures

This appendix outlines the methodology, assumptions and results of our financial analysis of the commercial options for the development of RAF Northolt. All numbers are in real 2012 terms.

The business models described in Section 4 could obtain private sector involvement through a number of commercial structures. As set out in Section 5.3 of the *Project Noah* report (dated 10 May 2011), there are three potential commercial structures for the scenario of MOD retaining ownership of the asset – these structures, as well as further options in a sale scenario, are assessed further in this section.

For the purpose of this commentary, we assume that the existing agreement with LCY could be terminated and new commercial arrangements agreed, either with a new private sector operator or renegotiate with LCY.

It is also important to consider the potential commercial structures against the key objectives of the MOD asset disposal programme in order to assess the suitability of each structure. Our understanding of the MOD's objectives are:

1. Realise value from the Northolt asset for MOD in the short term (during the CSR period);
2. Structure the business model to obtain maximum market appeal and value;
3. Maximise the value of the Northolt site over its whole life including any claw-back of value once further development is complete;
4. Minimise the capital investment required from MOD whilst obtaining a VfM solution;
5. Ensure continued use of the site for military use.

Below we outline the features of the possible commercial structures, the pros and cons of each, some examples of where they have been used and an assessment against the project objectives.

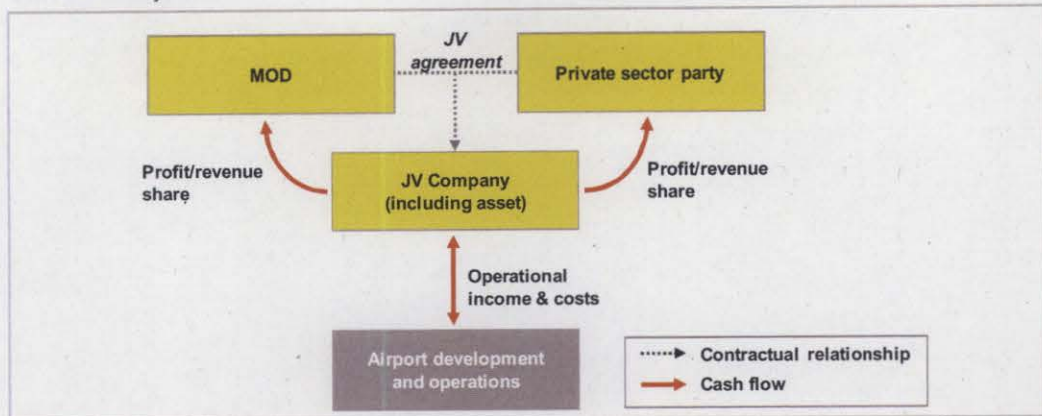
Options for commercial structure

Joint venture

A joint venture (JV) arrangement is where the MOD would retain ownership of the site and enter commercial arrangements with a private sector party to operate civilian aircraft under joint control. The JV would likely seek to transfer responsibility of civilian operations to the private sector party whilst agreeing some sort of profit/revenue share mechanism whereby MOD take a proportion of the profit/revenue of the operations above an agreed level of return. The following diagram shows the likely contractual relationships and money flow.

Figure 14: Joint venture illustration

Source: EY analysis



The key features of a JV arrangement are shown below:

- ▶ A small upfront receipt for MOD could be received based on the equity investment by both parties, with the private sector either investing in development or potentially releasing a cash receipt to the MOD (based on existing Jet Centre value).
- ▶ The ongoing payment to MOD would likely take the form of share of profit or revenue, or dividend payments. The quantum of dividend or profit/revenue share that the MOD would take would depend on their percentage share in the JV; for example should MOD invest (by way of land, upfront cost or development cost) 50% of the total value of the JV then MOD would receive 50% of the dividends or profit/revenue share.
- ▶ Development capex, risk and benefits would be shared between the MOD and the private sector. In practise, this is likely to be challenging in the case of the Northolt civilian operations as both parties will need to have a mutually agreed development plan with set annual investments – a private party is unlikely to accept the political risk of entering a long term JV with the MOD given budgetary uncertainty, possible change of political direction, etc.
- ▶ An ongoing profit/revenue share would allow MOD to retain an income stream and hence increased value in the long term, however if there is a low level of capex investment then the long term upside would be limited.
- ▶ There is an element of flexibility in a JV so that the MOD and the private sector party could agree changes to the agreement where mutually beneficial/acceptable.
- ▶ The JV agreement could be structured to allow for the MOD to use the runway as and when required within some framework to fit with the civilian/commercial operations. In addition, should the MOD continue to control the airspace (i.e. not obtain a CAA licence), the MOD would have the freedom to use the site at its convenience, including high security/sensitive movements.

The pros and cons of the JV structure are:

Pros	Cons
▶ Payments could be structured to meet MOD's requirements, i.e. greater amount upfront if required	▶ Hard to justify MOD injecting capital for commercial operations & benefit
▶ Joint responsibility for development – will help address capacity issues of	▶ Joint responsibility for development – politically challenging in light of likely

London/South East whilst remaining in line with current aviation policy of no new runways	strong opposition from local residents
▶ Flexible model to agree changes where mutually beneficial/acceptable	▶ Need close alignment of objectives and direction for JV to be successful – this would be difficult to match objectives of public and private sector
▶ MOD retains joint control over the asset to allow it to change its mind as/if required with different parliament	▶ MOD shares development risk with the private sector

One example of where the public and private sector have joint ownership of an airport is Newcastle Airport where 7 local authorities and Copenhagen Airport (Macquarie) have joint ownership of the airport with the private sector holding the Technical Services Agreement (TSA) for airport operations. The joint venture partnership has worked well but recently has faced challenges when trying to agree refinancing and recapitalisation, illustrating the difficulty of matching both private and sector party needs.

The JV structure addresses the MOD's objectives as detailed below:

1. Release value in the short term (i.e. during CSR period)

The upfront value will be based on the existing operations therefore releasing a small cash receipt during the CSR period with an ongoing share of profit/revenue.

2. Structure business model to enhance market appeal and value

Successful JV structures have a close alignment of direction between the two parties, therefore it could be challenging to ensure that both the MOD and the private sector investor have mutually agreed direction and development plan, without this, value could be restricted.

3. Maximise whole life value to MOD, including claw-back of value from future increased activity

Investment of the site under a JV is likely to be more limited due to the challenging arrangement of investment and return for the two parties, therefore, with limited investment there would be limited upside potential gain in the future. A mechanism to share the future benefit could be agreed but increased future activity and hence gain is less likely under a JV. Alternatively, there could be an exit strategy such that if MOD want to remove themselves from the JV the private sector could pay an exit fee to MOD thereby potentially realising value at a later date.

4. Minimise capital investment required

The JV agreement would likely be structured so that the MOD provides the land and the private sector completes the operation and limited investment, there may however be some need for investment from the MOD in the future which does not immediately fit with the MOD's objectives.

5. Assured continued military use

The JV agreement could simply include a requirement to allow the MOD continued use of the runway.

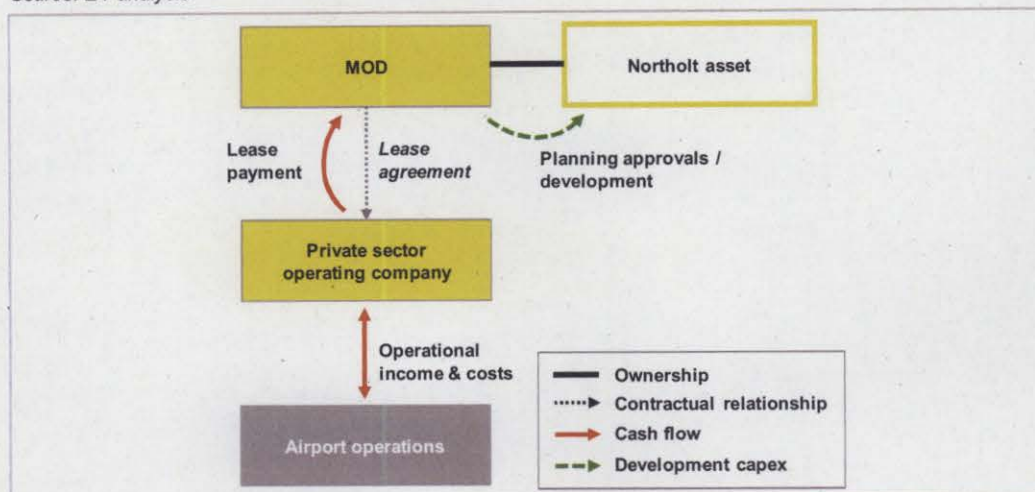
Short-term lease

A tenant arrangement or lease is where the MOD would retain ownership of the site and lease the use to a private sector party who would operate civilian operations under a short-

term lease agreement. A short-term lease would only be suitable for MOD in the event that it were incorporated into a longer development plan with the initial phase being delivered through a short-term lease. The following diagram shows the likely contractual relationships and money flow.

Figure 15: Short term lease illustration

Source: EY analysis



The key features of a short-term lease arrangement are as follows:

- ▶ As for JV, an upfront receipt could be possible based on existing Jet Centre but this would diminish any ongoing payment.
- ▶ Responsibility for development capex would sit with the lessor (i.e. MOD) as tenant arrangements are typically relatively short (e.g. 2-10 years) and hence would not allow the private sector sufficient time to invest significantly in the site and make a reasonable return. Should MOD desire the private sector to fund development, a long term lease or concession structure may be more appropriate, however, as discussed in the following section there are specific limitations and concerns relating to this approach.
- ▶ MOD would receive an annual fee for use of the site. Again, this could include some sort of revenue/profit share but if MOD is unable to invest in site development, the long term upside would be limited due to the restricted increase of movements.
- ▶ A lease structure would typically be relatively short term thereby allowing flexibility for the MOD to change the terms at the end of each lease term should it desire.
- ▶ The agreement could be drafted such to allow MOD use of the site at its convenience.

The pros and cons of the short-term lease structure are:

Pros	Cons
▶ A short-term lease could generate a small upfront receipt based on existing operations	▶ Requires time and resource to deliver increased value through planning approvals
▶ If a short-term lease were used as the first part of a longer development plan with a follow on transaction after obtaining planning permissions for development then high value could be realised from the	▶ High level of costs associated planning approvals and retender

whole development plan

-
- | | |
|---|-------------------------------------|
| ▶ Allows MOD to design development of the site to its own specification | ▶ Low initial upfront/ongoing value |
| ▶ Allows flexibility for change after the end of the short-term lease | ▶ Short term solution |
-

Short-term leases are not common-place in airports due to the capital intensive nature of airports and the short time to make a suitable return.

The short-term lease structure addresses the MOD's objectives as detailed below:

1. Release value in the short term (i.e. during CSR period)

The upfront value will be based on the existing operations therefore releasing a small cash receipt during the CSR period. There may be an ongoing lease payment but this would be reduced based on the amount paid upfront.

2. Structure business model to enhance market appeal and value

The short-term lease structure is unlikely to be attractive to the market, moreover, we are informed from LCY that their current short-term operating lease is satisfactory for delivering the current operations but in order to grow and develop the site (which they and any other market participant would be keen to do) they require a longer lease to allow investment and hence increase market appeal.

3. Maximise whole life value to MOD, including claw-back of value from future increased activity

A short lease on its own would not allow for a claw-back of value, but if a short-term lease was a first step of a longer development plan with a proposed follow-on transaction then value could be released from the secondary transaction should appropriate planning approvals be obtained.

4. Minimise capital investment required

Any investment at the site under a short-term lease would likely be required to be made by MOD, rather than the private sector as there would be insufficient time for the private sector operator to make a reasonable return on investment. We recommend that if a short-term lease is used as part of a longer development plan then during the short lease MOD apply for relevant planning approvals for development of the site which can be carried out, and value realised, at the follow-on lease/concession.

5. Assured continued military use

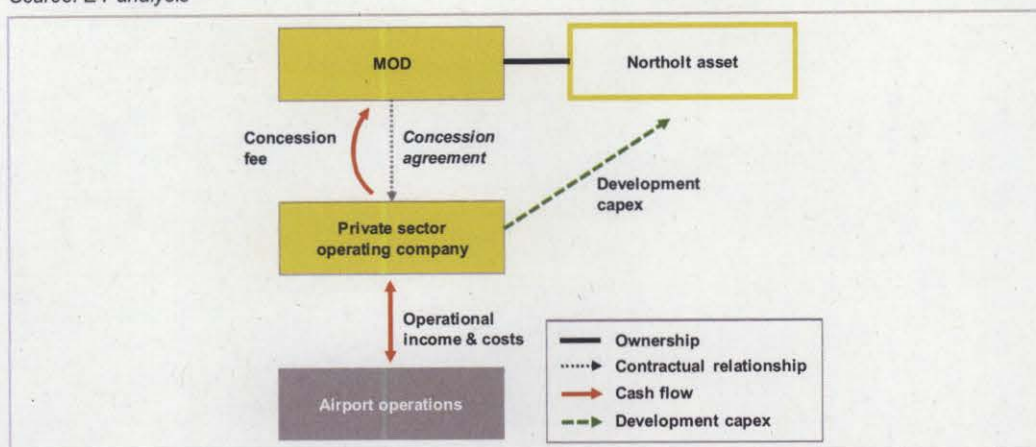
The lease agreement could include MOD's assured access and use of the site, although a fee would be charged to MOD for the use.

Long-term lease or concession

A long-term lease or concession share largely common characteristics, so for the purposes of this analysis we refer to a concession. The MOD would retain ownership of the site but contracts with a third party (concessionaire) to undertake the operation, maintenance and development of the airport for an agreed period of time. Often the contract may include large capital requirements. In order to incentivise long term development and capital expenditure, the term is typically set to provide a reasonable payback period to realise a bankable level of return. The following diagram shows the likely contractual relationships and money flow.

Figure 16: Concession illustration

Source: EY analysis



The key features of a concession arrangement are as follows:

- ▶ The MOD would receive a concession fee from the concessionaire that may be in the form of an upfront payment, an indexed annual fee, a share of airport revenues or some combination thereof. Current market trend is for the concession fee to be a percentage of airport revenues (with a minimum payment in place). Therefore, we anticipate that MOD could receive an upfront payment as well as an ongoing annual concession fee, likely linked to airport revenues.
- ▶ Operational, maintenance and capital expenditures generally remain the responsibility of the concessionaire, with the agreement commonly containing provisions for the capital status of the airport upon hand back.
- ▶ Commercial revenues are also typically transferred to the concessionaire and these cash flows are used to service its debt and generate investment returns.
- ▶ Operational and management control is transferred to the private sector by way of a "right to use" of land and assets for a pre-defined period, after which they revert back to MOD. But we anticipate that the concession agreement could be drafted such to allow MOD use of the site for a cost.
- ▶ Concessions however are longer term (above 20 years) so reduce the flexibility available for the MOD – after entering the concession any change would likely trigger penalties.
- ▶ Depending on the specific aspects of a transaction, a long term concession can be structured to share many of the attributes of an outright sale, without transferring the long term ownership of the asset.
- ▶ It should be noted however, that if MOD pass the full planning risk to the private sector this is likely to result in a poor asset value, and hence low upfront receipt and ongoing concession fee.

The pros and cons of the long-term concession structure are:

Pros

- ▶ MOD have no responsibility for operation or development of the asset – long term concession is similar to share sale with asset reverting to public sector at end of

Cons

- ▶ Longer term (above 20 years) reduce flexibility for MOD – after entering the concession any change would likely trigger penalties

concession

<ul style="list-style-type: none"> ▶ The concessionaire to invest in development of the site with no investment required from MOD 	<ul style="list-style-type: none"> ▶ Hard to structure a long term concession effectively if step-change capacity/throughput – hard to set appropriate benchmarks and triggers at outset
<ul style="list-style-type: none"> ▶ Would give MOD assurance of long term income from asset 	<ul style="list-style-type: none"> ▶ Towards the end of the concession, the operator could stop investing in the asset (to maximise return), negatively impacting on asset value at handback
<ul style="list-style-type: none"> ▶ If planning permission were gained through an initial short-term lease and a secondary concession, this would generate high value whilst allowing MOD flexibility 	

There are many examples of airports operating successfully under a long-term lease or concession structure worldwide as follows:

- ▶ Farnborough airport - Leased by the MOD to TAG Aviation for 25 years from January 2003 with the freehold being sold in 2007. The terms of the lease require TAG to use the airport solely for business aviation and commit to holding the Farnborough Airshow every two years. The lease structure incentivised TAG to fund a c.£45m redevelopment which included the construction of a new terminal, air traffic control tower and hangars; this increased the capacity from c. 17,000 movements in 2001 to c.50,000 in 2011. The terms of the sale were not disclosed, however it is believed that there are claw-back arrangements which would require TAG to pay the MOD in the event that any part of the site is sold off for non airfield use.
- ▶ Luton airport – 30 year concession granted to Abertis by public sector owner, Luton Borough Council. The concession successfully increased the Airport's capacity from c. 3 mppa in 1997 to 11.5 mppa in 2011. However, there is currently an opportunity to expand the airport further, to a capacity of c. 18 mppa, but the concessionaire is not incentivised to fund the development due to the relatively short payback period (remaining contract term). In addition, there are no provisions in the contract that require the Concessionaire to commit to development when certain milestones are met, as is the case with other concessions such as Queen Alia airport, shown below.
- ▶ Queen Alia International Airport – 25 year concession granted to AIG by the Jordanian Government. The concessionaire committed to a two phase development plan, the first phase requires the expansion from a capacity of c. 5 mppa to 9 mppa. The second phase will increase the capacity to 12 mppa and is triggered in advance of the expected achievement of passenger threshold. This structure is attractive to both parties as it provides the flexibility of developing the airport in line with the growth in passenger demand.

The concession structure addresses the MOD's objectives as detailed below:

1. Release value in the short term (i.e. during CSR period)

The upfront value will be based on the existing operations therefore releasing a small cash receipt during the CSR period as well as an ongoing concession fee, the upfront payment as well as the ongoing concession fee will be dependent on the investors view of likely capex cost during the concession.

2. Structure business model to enhance market appeal and value

Market appeal and value would be maximised through having some or all planning permissions in place to demonstrate to the market that development can happen at Northolt.

3. Maximise whole life value to MOD, including claw-back of value from future increased activity

Maximum value would be obtained through MOD having certain planning approvals in place at the time of seeking a new operator. Without planning consents, bidders would likely perceive the risk of obtaining planning approval to be a high risk and hence apply a significant risk premium to future cashflows and likely not return increased value to MOD from future development, so having planning permissions in place at the outset would be preferable. However, a claw-back mechanism could be structured into the concession agreement, discussed in Section 5. Our work at Luton Airport demonstrates the challenges associated with long-term concessions with a significant step-change of throughput as the concession agreement set at the outset may not work efficiently at a later date to allow continued investment and return to both parties.

4. Minimise capital investment required

Under a long-term concession, we would assume that all capital investment would be incurred by the new concessionaire. If MOD choose to obtain planning consents themselves to maximise value, this will be a cost to MOD but one which should generate significant return in the longer term.

5. Assured continued military use

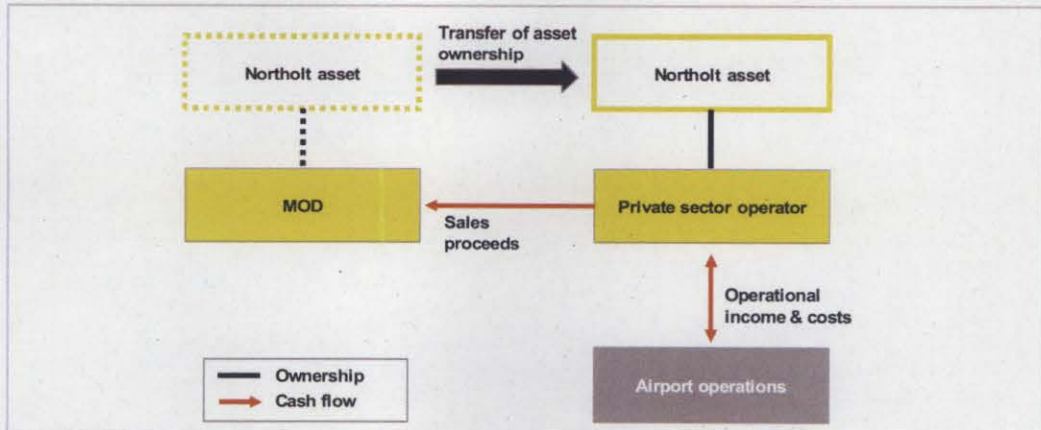
Use by the military could be included in the concession agreement, although this would likely be a contractually fixed number of movements and hence would not allow for the flexibility of emergency or increased movements. MOD use would require a payment to the private sector operator or more likely a reduction of concession fee.

Share sale

Under the structure of an outright (or majority) share sale, a third party would acquire all (or majority) of the shares of the airport and would take over responsibility for operations of the airport. Alternatively, under a minority sale option, the MOD may maintain certain controls in the asset. As the future of the Northolt site is uncertain, a minority share sale would have very limited, if any, interest – we do not believe that a minority share sale would represent a value for money for MOD, so for the purposes of this analysis has been discounted. The following diagram shows the likely contractual relationships and money flow of an outright sale.

Figure 17: Share sale illustration

Source: EY analysis



Key points of the sale option are as follows:

- ▶ The MOD would receive a lump-sum amount at sale of the asset. The purchase price would be determined based on the net present value of future cash flows based on a development plan determined by the bidders.
- ▶ Successful airport sale transactions typically involve little or no commitment from the acquirer to a particular capital investment programme but development of the site is left up to the private sector.
- ▶ There is a significant risk associated with obtaining successful planning permissions in the development of any airport. In the case of Northolt, this is more so the case due to its proximity to housing and the local community. This risk, will diminish the value that a bidder would pay for the asset. The private sector would therefore form a view of the development potential of the site prior to acquisition and the price paid for the asset would reflect their view of the future potential of the site, adjusted for planning risk. Bidders may assume the planning risk to be so large that they pay nothing for the possibility of future development.
- ▶ Obtaining an uplift in value should the new private sector owner achieves a significant development of the site is harder to manage under a sale. Section 5 talks through possible mechanisms to return additional value to MOD in this situation, although this would be hard to enforce and would likely involve significant negotiation.
- ▶ To secure the MOD's use of the site after the sale, we could seek to structure a deal such that there is a precondition that MOD are given user rights of the runway, by way of a lease or some other agreement, this will likely reduce the return to MOD.

The pros and cons of the sale option are:

Pros	Cons
▶ Outright sale would generate significant upfront cash receipt to MOD during the CSR period	▶ Harder to release value to MOD from future increase of activity
▶ No responsibility or cost to MOD to develop the asset	▶ Harder to ensure MOD's continued use of the site
▶ No time or cost associated with monitoring concession agreements, developing planning applications, etc	▶ If full planning risk remained during the sale process, value will be capped by the risk premium bidders would apply to future development of the asset
▶ Politically acceptable – helps to address the market capacity shortage by allowing the private sector to develop new capacity in the South East/London area	▶ No ongoing income from investment, one single opportunity to realise value

There are many examples of the sale of airports in the UK and globally but limited evidence of the sale of military sites whilst retaining user rights for the MOD. Recent significant airport sales are:

- ▶ Gatwick airport – BAA sold LGW in 2009 to GIP
- ▶ Belfast City airport - Ferrovial sold BHD in 2008 to ABN Amro Infra Fund

The concession structure addresses the MOD's objectives as detailed below:

1. Release value in the short term (i.e. during CSR period)

A full sale would return a lump-sum consideration to MOD at the date of sale.

2. Structure business model to enhance market appeal and value

The value obtained from a sale would range depending on the business models assumed by the bidders. We forecast that the minimum cash receipt would be equivalent to the current operations of 7k business jets and the value would increase with the bidders perception of future expansion options of the site, adjusted for their view of planning risk. Market appeal and value would be enhanced through MOD having illustrative development plans for the site, and if possible planning approvals in place – this would give bidders comfort to bid an increased price for the asset assuming that development could happen to obtain more passenger throughput.

3. Maximise whole life value to MOD, including claw-back of value from future increased activity

Section 5 details how a claw-back mechanism could be sought to be structured into a sale scenario, although it should be noted that this will be more challenging than with the other structures. The claw-back of value would likely involve a number of triggers at which point the new owner would be required to share the upside with MOD – this process is likely involve challenging and protracted negotiations taking resource, time and cost.

4. Minimise capital investment required

After sale of the asset, MOD would not be required to invest as the ownership and responsibility of the asset transfers to the new owner. Should MOD wish to maximise market appeal through commencing the planning process then this would incur a cost prior to sale.

5. Assured continued military use

After sale, the MOD could enter user agreements which would equate to the MOD paying a fee to the new owner to use parts of the site for a specified number of movements, this would reduce flexibility for increased number of movements and emergency landings and it may leave the MOD at risk of being without a base in the area should the new operator choose to lease the site to another party or just focus on their own operations.

Summary assessment against project objectives

We have assessed the project objectives under each commercial structure in this appendix, the following table shows ticks and crosses to demonstrate each options' suitability.

	JV	Short-term lease	Concession	Share sale
1. Release value in the short term (i.e. during CSR period)	✓	✓	✓	✓
2. Structure business model to enhance market appeal and value	✓✓	x	✓✓	✓✓
3. Maximise whole life value to MOD, including clawback of value from future increased activity	✓✓	x	✓✓	x
4. Minimise capital investment required	x	x	✓✓✓	✓✓✓
5. Assured continued military use	✓✓	✓✓✓	✓✓✓	x
Total score	7	4	11	6
Rank	2	4	1	3

Given the above assessment of each objective and the suitability of each structure, we conclude that our proposed commercial structure is a long-term concession whereby the MOD transfers full operational control and responsibility to a private sector party to operate the airfield and in return the concession is structured so to allow an upfront payment (on account of the Option 1 business) with the opportunity to benefit from future increases in revenue following the achievement of planning consents (under either Option 2 or Option 3).

Appendix D Mott MacDonald report – CAA Licence Compliance

Appendix E **Mott MacDonald report – Estimates of passenger traffic, aircraft types and movements for a shortened runway and the existing runway**