Plymouth Airport Study
Final Report
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 229666-00
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Introduction

This report examines the viability of air services at Plymouth City Airport (PCA) and consolidates information from other studies that have previously been undertaken to assess PCA’s future potential as an operational airport. These studies include an economics study into air services for Plymouth prepared by Berkley Hannover Consulting (2011), a commercial options report prepared by Oriens Advisors (2011), a technical aviation study prepared by Fjori on behalf of Sutton Harbour Holdings (2014) and a report prepared by York Aviation on behalf of Viable.

As part of this Plymouth Airport Study a series of options for reintroducing air services at Plymouth City Airport have been developed and assessed. The options have been assessed in terms of their financial viability and feasibility with consideration given to opportunities and constraints under specific criteria that would impact on aviation operations.

The following criteria were considered as part of the option assessment: leasehold acquisition costs, land acquisition costs, infrastructure costs, operational costs, potential revenue, presence of a willing seller, Civil Aviation Authority (CAA) compliance, connections, forecast demand, retention of an airline operator and wider economic benefits.

The assessment was also informed by:
- a review of the Rules of the Air Regulations;
- a review of CAA licensing practices;
- a review of planning, transport and aviation policy context;
- an audit of the existing infrastructure at the PCA site ; and
- an updated passenger demand forecast to 2032.

This has enabled an objective evidence based assessment to be undertaken for the purpose of informing decisions regarding the future of PCA. The outcomes of the assessment are set out below by subject criteria.

Plymouth’s need for an Airport

Plymouth is a city of some 250,000 inhabitants, a regional centre for business activity and cultural events, and a city that supports a number of specialist marine industries. It is also an active ferry port serving destinations in France and Spain.

Transport to the city from the rest of the UK is achieved by road and rail following the closure of the city’s airport in 2010. Plymouth is 220 miles from London with the train journey taking 3.5 hours. Plymouth is just over 200 miles from Birmingham with the journey by train taking 3.5-4 hours. Road connections are provided via the A38 dual carriageway which connects with the M5 motorway at Exeter. The city’s peripheral location is one of the reasons why the Council is keen to investigate the potential for re-opening the airport, such that it could provide quick and easy access to other major urban centres in the UK and Europe.
The current airport site is inactive but remains largely intact with the airport and buildings remaining, although the condition of both is described in more detail later in this report. If a case to re-open the airport cannot be made, the site may well be developed for other uses and therefore lost for ever. If this happens and Plymouth wishes to secure future air services, a new site would be required. This would entail significant land and investment and is unlikely to be a realistic proposition.

It is in this context that the significance of the existing airport site becomes clear, and the need for an objective and evidence based appraisal to be undertaken.

**Civil Aviation Authority compliance**

One of the prerequisites for re-opening Plymouth’s airport is meeting the current CAA licencing requirements. Following closure of the airport in December 2010 the CAA licenses were revoked.

The former airport operated under dispensations from the CAA notably the licence variation for the reduced Runway End Safety Areas (RESA). These dispensations would not be directly transferable to a new licence if PCA were to re-open. PCA would have to meet the minimum licensing standards set out in CAP168 Licensing of Aerodromes requiring 90m RESA at each end of the runway.

CAA has confirmed that PCA is identified as being situated in a congested area where the Rules of the Air Regulations (RoAR) require that an airport must be licensed if it is to operate in any form as an airport or aerodrome.

CAA compliant licencing of PCA can be achieved through the following:

- Changes required to the airport infrastructure either through expansion of the runway or potential reductions to the Take-Off Distance Available (TODA), or Acceleration Stopping Distance Available (ASDA). However, this may impact on the type of operations and range of services offered but would allow the operation of General Aviation.

- Works to the runway markings and additional runway grading and potentially runway strengthening would be required to achieve CAA compliance. These works would have associated land purchase and CPO costs that would add to the necessary capital expenditure before the commencement of operations.

CAA licencing can be achieved and would allow PCA to continue operation in the future should an operator present a viable and sustainable business plan. Safeguarding of the site would allow for the reconsideration of its aviation future if positive changes do occur in aviation policy, economics, regulations or technology.

**Challenges for Plymouth City Airport**

Despite the obvious advantages for Plymouth having an airport, and the fact that CAA licencing can be achieved allowing future operations, there are a number of challenges to successful future aviation operations that this report addresses.
**Connectivity and Destinations**

The runway at Plymouth has a maximum take-off distance is less than 1,200m. The paved runway has a width of 30m and the runway strip has a width of 75m. The airport is constrained by housing and industrial developments that have encroached on the airport boundary.

The restricted runway at PCA means there are limitations to the size and type of the aircraft that could operate from PCA under each of the options assessed. The aircraft would have limited passenger uplift capabilities and a restricted range. These factors would limit the commercial viability of any passenger service.

Options involving extensions to the runway would support an increased range of aircraft types and sizes, as a result connectivity to the rest of the UK would be improved and destinations within a 500 nautical miles range could potentially be reached including France, Germany and the Netherlands.

The potential for runway extensions of 1,319m - 1,602m (TODA) have been assessed. Lengthening the runway would have high associated land acquisition and construction costs. The number of aircraft models that could be supported under the runway extension options increases minimally and the maximum payload (the weight of the people and items that are being transported) that aircraft could take on would increase only marginally. Generally an airport requires a runway of 1,800m (none of the PCA assessment options would deliver this) to offer a full range of short-haul aircraft capability that could economically competitive.

Long-haul gateway airports such as Gatwick and Heathrow are becoming increasingly inaccessible due to competition for landing slots. These airports are operating close to their full capacity and it is considered that it would be a major challenge to establish a new London service, except to a more peripheral airport such as Stansted.

This means that it would be more difficult for airlines to obtain slots at hub airports for connecting routes and consequently the potential for commercially viable services which connect Plymouth to key destinations would be reduced.

**Leasehold Acquisition and Land Acquisition**

There are two key non-operational issues that would impact on the deliverability of the assessment options.

Firstly, Sutton Harbour Holdings are identified as the current leaseholder with a 150 year lease of the site from 2004. Relinquishing the leaseholder rights is anticipated to have a high asset value (even with a willing seller).

Secondly, options involving expansion of the runway would incur substantial costs associated with obtaining control over large areas of land currently in residential or commercial purposes. Obtaining control over these areas would require compulsory land purchases to be made. Procurement of land would represent a significant barrier to re-commissioning the airport and could involve a prolonged process of negotiations and sourcing of funds.
**Infrastructure costs, operational costs and potential revenue**

Re-commissioning PCA for commercial operations could involve a new operator incurring high capital construction costs associated with a runway extension and the costs of other necessary re-commissioning works. The total estimated cost for reopening the airport ranges from £7.8m to £69.6m (these figures do not account for land, CPO or leasehold purchase costs).

The commercial options assessed would incur significant capital restoration costs associated with runway works, additional grading and provision of 90m Rescue End Safety Areas. Furthermore, PCA would require refurbishment/maintenance works including grass cutting around airfield, resealing of apron slabs and clearing vegetation from drainage channels, fitting out the terminal and control tower, re-commissioning of RFFS station, provision of navigational aids, and airfield lighting.

Options would incur costs associated with provision of Air Traffic Control (ATC) services, staff and operations, security staff, managerial staff. The proposed options would have varying costs associated with level of Rescue and Fire Fighting Services required for each category of airport.

The airport operator would have costs associated with maintenance and refuelling while airline operators would incur costs from obtaining slots at other airports.

The ability of an airport operator to generate a sufficient margin of profit that would enable them to off-set these costs would be impacted by conditions at PCA and limitations placed on operational services.

**Revenue**

Economies of scale exist within the aviation market, larger aircraft contain more seats and therefore are better able to off-set operating expenses such as fuel costs and the purchase of landing slots at airports. It is necessary for smaller aircraft to offset their expenses and therefore they are generally associated with higher fares. Higher fares impact on the demand base for some services.

UK flights are subject to high levels of Air Passenger Duty (APD) which is experienced on each leg of an aircraft’s journey. APD impacts on the smaller aircraft market sector as more flights are required to reach the same level of passenger demand that large aircraft could achieve.

Analysis of route profitability from PCA shows that in-order to be economically sustainable the breakeven fares for flights on favourable routes would need to be higher than those offered by other airlines from operational regional airports such as Exeter.

Options for commercial aviation from PCA would have large costs and therefore high risks associated with them and could result in on-going losses.

There is limited information available to indicate whether or not an airfield could generate a sufficient revenue stream through activities such as Flag Officer Sea Training (FOST), Aero Club training or business aviation. There is little evidence providing an indication on whether or not General Aviation could be re-established and would be commercially viable.
Demand

PCA has historically had a low demand for air services, PCA annual traffic throughput peaked at fewer than 160,000 passengers in 2009, despite a wide range of destinations having been served in the past by operators. PCA falls within the catchment area of other airports such as Exeter, Newquay and Bristol which offer a greater range of routes.

The demand forecasts for PCA indicate that there could be a build-up of passenger numbers between 2012 and 2032 and by 2032 PCA could be forecast to accommodate passenger numbers comparable to historic peaks. The duration of time necessary to arrive at traffic levels similar to the historic peak is significant. Therefore in the short to medium term traffic volumes may be inadequate for a commercial airline/airport operation without public sector support.

Attraction of an Airline

The constraints and infrastructure conditions at PCA place limitations on the types of aircraft that PCA could support, this could impact on a potential airline operator’s decision to move to Plymouth as the aircraft that may be suitable could be better utilised elsewhere. Additionally, an airline may not have sufficient numbers of appropriate aircraft to offer services from PCA.

The historic low demand, marginal profitability and low forecast passenger demand would mean that airlines are likely to perceive there to be high commercial risks associated with establishing airline operations at Plymouth.

In addition, it should be noted that regional airline operators such as Easyjet and Flybe have concentrated their activities on key centres, with associated staffing and ground maintenance facilities. Operations to Plymouth would require additional staffing and ground maintenance costs.

The opportunities for commercial airport operations appear to be very limited and may require public intervention and subsidy to underwrite operations.

Conclusions

It is recognised that there are a number of challenges to the reinstatement of air operations at Plymouth Airport. The short runway at Plymouth restricts the aircraft types that could land, and has historically limited operations preventing participation in European low cost and holiday charter markets. These factors severely impact on the airport’s ability attract and retain a new airline operator.

The viability of each option is challenged by high capital investment costs associated with re-commissioning/refurbishing and bringing the airport up to the minimum necessary operational specifications in accordance with the CAA.

There is also a strong possibility that options involving the reintroduction of air services may require operational subsidy during the first years of operations and a build-up of activity.

However, air operations, in compliance with CAA licencing specifications are possible and would allow PCA to continue operation in the future should an operator present a viable and sustainable business plan that is considered
acceptable to Plymouth City Council. Safeguarding the site would allow time for a detailed consideration of any proposed business plan. Safeguarding of the site would also allow for the reconsideration of future aviation operations should there be positive changes that occur in aviation policy, economics, regulations or technology, although it is recognised that there is no guarantee of such change.

Given the uncertainty over the future viable aviation use of the site under future financial and regulatory constraints a safeguarding policy option could be worthy of further consideration as part of the Plymouth Plan Refresh relative to alternative use.

Safeguarding as an option is given further weight as the permanent loss of the PCA site to aviation use would most likely mean the permanent loss of the ability to reinstate aviation links from Plymouth to the rest of the UK and Europe. A new airport in a new location in Plymouth would not be a realistic proposition, given the need for a large enough site and capital investment.

Reinstatement of air services would be a possibility through Option 5, a licenced airport with General Aviation activities. However, more detailed consideration of the business plan would be required. As part of a detailed business plan evidence would need to demonstrate that the infrastructure requirements and operational costs of Option 5 could be funded and that the operation would be viable in the long term. Safeguarding of the PCA site is an option open to the Council whilst this evidence is collected.
1 Introduction

Ove Arup and Partners Limited (‘Arup’) was commissioned by Plymouth City Council (‘the Council’) to prepare an options assessment to inform the Plymouth Plan, having specific regards to the long term future of Plymouth City Airport (PCA).

An evidence base for the options assessment was undertaken, comprising:

- A Review of the ‘Policy Framework’ (see Appendix A) within which the future of the airport has been considered (including aviation, economic, transport and land use policy).

- An ‘Infrastructure Review’ (see Appendix B) which provides an assessment of the condition and capability of the current airport facilities, the constraints and opportunities at the airport site, and the infrastructure improvements required (and the associated cost) to bring the airport to current Civil Aviation Authority (CAA) standards.

- A ‘Demand Forecast’ prepared by Aviation Economics (see Appendix C) that considers the competitive positioning of Plymouth City Airport (PCA) with regards to the trends in the UK aviation market, a competitive analysis of the airports in the South West, and commentary on changes in the London market. The document includes a 20 year passenger forecast for PCA and considers the aviation options available regarding its future.

This report builds on the findings of the above documents for the purposes of assessing the suitability of a series of options for re-establishment of air services at PCA. The report includes consideration of the potential use of the PCA site for non-aviation uses including redevelopment of PCA land.

The report examines the deliverability, feasibility and viability issues surrounding the options in order to provide an evidence based assessment to inform future decisions regarding the use of the PCA site.

It should be noted that the infrastructure costs and demand forecasts are considered irrespective of where an airport is located within the city. The forecasts show low historic and forecast demand which will challenge the concept of a fully commercial airport.

With this in mind this report also investigates the general desire for good transport connectivity to the city to overcome Plymouth’s peripheral location. The Council is keen to understand the potential for re-opening the airport, such that it could provide quick and easy access to other major urban centres in the UK and Europe. The Council is also mindful of the fact that if a case to re-open the airport cannot be made, the site may well be developed for other uses and therefore lost for ever.
2 Stakeholder Engagement

As part of the evidence gathering for the option assessment Arup has engaged with a number of stakeholders and interested parties with regard to the future use of the airport site. The key stakeholders involved were as follows:

- Sutton Harbour Holdings (SHH) - the current leaseholder (see Appendix D)
- Viable Plymouth Limited (Viable) - an incorporated company interested in securing the airport for commercial aviation purposes (see Appendix E)
- Plymouth Chamber of Commerce & Industry (PCCI) - an independent representative group for Plymouth businesses (see Appendix F)
- Civil Aviation Authority (CAA) – the regulatory body civil aviation, aerospace and aerodromes (see Appendix H)
- Plymouth City Council – the freeholder for Plymouth City Airport
- Plymouth Manufacturing Group – a network of information sharing manufacturing companies from across Plymouth

2.1 Sutton Harbour Holdings

A meeting was held with Sutton Harbour Holdings (SHH) on 30th May 2013. The purpose of the meeting was to outline the background to this study, and provide an opportunity for SHH to feed into the study and provide evidence that they believe should be taken into account.

An overview of the methodology was provided indicating that the main focus of the study would be to establish whether there is a sound economic case for introducing air services to Plymouth.

The programme for the study was established and the timescales for feeding into the Plymouth Plan.

The study would benefit from SHH past involvement as the airport and airline operators. Therefore the following information was requested:

- Monthly traffic data by airline and by route for the last 5 years of operation –including transit passengers if available.
- Passenger survey data/catchment data.
- Airport accounts – last 5 years of operation.
- Airport charges.

Further requests to SHH were made these involved the following questions:

- Explanation of why Eastern Airways closed its operations?
- Whether there were any discussions with other potential airline operators prior to closure?
- SHH’s view of the airport’s actual catchment area?
SHH’s view of competition from other airports serving the South West region?

In March 2014 SHH provided to Arup for consideration its own independent review of the future of aviation from the PCA site. This study, undertaken by Fjori Limited (Former PCA Site Independent Aviation Study – Technical Evidence – March 2014) provides a comprehensive independent technical review of the future of PCA in aviation terms to support SHH’s view of permanent closure.

A second meeting between SHH, PCC and Arup was held on the 21 May 2014 during the meeting Fjori presented the findings of the report.

The physical and practical limitations of PCA were identified, including the short runway length in conjunction with historic low demand levels. An overview of the commercial actions SHH had previously undertaken to increase passenger throughput (new flight routes) were cited as of significance, indicating that there are limiting factors on commercial flight potential at Plymouth. These factors were considered to impact negatively on the ability of PCA to attract and retain suitable airlines.

The implications of introducing passenger jets were raised specifically, including the safety risks and the acoustic repercussions that could affect the surrounding residential area. The emerging trends of the aviation market, particularly the consolidation of regional airports into hub airports, was outlined as an important factor for consideration in determining the future prospects of the PCA site.

SHH encouraged Arup to review the CAA’s strategic general review of General Aviation noting that the CAA considers Plymouth’s airspace to be “congested”.

The Fjori Report concluded that after a number of years of trying to develop air services at PCA with resulting year on year losses the location was too constrained to achieve viable operations.

2.2 Viable Plymouth Limited

For the purposes of this study two meetings were held with Viable. The first meeting was held on the 24th June 2013 and involved outlining background to the study and providing an overview of the methodology.

Information plans, and evidence was requested from Viable, in order that their proposals were fully and objectively considered.

At the meeting it was agreed that:

- Viable would present details of their plans to PCC and Arup.
- Viable would issue a list of contacts that they felt should be included in the consultation process.

A further meeting took place on the 27th August 2013 where:

- PCC officers were formally presented with Viable’s outline business case and masterplan proposals for a phased reopening of PCA. The proposals largely centred on the Ministry of Defence being a significant user of the...
airport in the future through Flag Officer Sea Training (FOST). Over time commercial operations would increase as a proportional share of overall airport operations.

- Viable’s commercial information has been shared with Arup for review including all assumptions on future demand.

Viable commissioned York Aviation to prepare a report identifying information on passenger demand and the economic impact of a re-opened airport. Viable released the full York Aviation study in February 2014. This note has been reviewed and informed the preparation of the PCA Study.

### 2.3 Plymouth Chamber of Commerce & Industry

A meeting was held with the Chamber on the 3rd October 2013 where the background to this study was introduced. An overview of the methodology was provided indicating that the main focus of the study would be to establish whether there is a sound economic case for introducing air services to Plymouth. The programme for the study was established and the timescales for feeding into the Plymouth Plan.

The Chamber is supportive of a reinstated airport proposal for the City. The Chamber agreed to facilitate discussions with the Plymouth business community to provide an indication of demand for business aviation.

At the meeting it was agreed that:

- Arup would draft a list of questions that can be sent to the identified business for their input into the process.

In 2013, through the Chamber a survey was undertaken (see Appendix G) to obtain the views of local business on the future of Plymouth Airport and transport connections to the city. The survey asked ten questions and the 22 following Plymouth based companies provided responses:

- Theatre Royal
- Wolferstans
- Plessey Semi-Conductors
- Vickery Holman
- Spinnaker
- Valeport
- AMS Plymouth
- Mashfords
- Fortescue Garden Trust
- Pipex
- Plymouth University
- Lynher Surveys
- Careers South West Ltd
- Hoare Lee
- Marine Academy Plymouth
- Nuffield Health
- Future Inns
- Midas Group
- Plymouth Community Healthcare
- Centrica Langage Limited
Sutton Harbour Holdings PLC
One company requested that their name be withheld

The survey questions were as follows:

1. Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas?
   a. Please state which geographic areas have been impeded?

2. Has the loss of Plymouth Airport made your business consider relocating away from Plymouth?

3. Has the loss of Plymouth Airport changed your air travel behaviours?

4. Are you travelling by train or car to other regional airports more frequently?
   a. If so which regional airports?

5. Would re-established air connections to London be of benefit to your business?

6. Would re-established air connections to the rest of the UK and Ireland be of benefit to your business?
   a. If yes which locations

7. Would air connections to Europe be of benefit to your business?
   a. If yes which locations

8. Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business?

9. How often would a business like yours use air services at Plymouth if they met your needs?

10. How often does your business currently use other airports, Exeter, Bristol or London?

Of the 22 responses eight stated that the loss of Plymouth Airport had changed the way they do business. However, only one company stated that they had considered relocating away from the city.

Several respondents considered that they had lost business and that they have had to alter their travel behaviour shifting to more expensive car and train modes as well as air travel from Bristol and Exeter.

17 responses considered that the re-establishment of air connections to the rest of the UK or Europe would be beneficial to their business and a range of destinations were specified including:

- Manchester
- Ireland
- London
• Germany
• France
• Holland
• Paris
• Amsterdam
• Rotterdam
• Glasgow
• Edinburgh
• Portsmouth
• Gibraltar
• Aberdeen
• Copenhagen
• Leeds

One respondent provided a commentary stating that they rely on exports and need a reliable airport for continuity. However, they considered that Plymouth was not the right one for their purposes due to high probability of flight delay and cancellations (based on historic usage). They recommended that Exeter Airport routing be extended.

Seven responses considered that the re-establishment of air connections would be of small benefit to their business.

The responses provided an indication of the frequency with which they travel and an estimate of how often business would use the Plymouth services.

It should be noted that the degree to which air services would be beneficial to the individual business, would be dependent upon scheduling of flights and destinations available under detailed business plans for PCA. Pricing of air fares would also be a significant factor in potential use of the airport.

2.4 Civil Aviation Authority

As part of the option assessment, contact was also made with the CAA in August 2014 as the regulatory authority with respect to any reinstatement and future licensing of PCA. As part of Arup’s consideration of options several specific yet fundamental technical queries surfaced which required formal confirmation from the CAA, including:

• Confirmation that PCA is located in a ‘congested area’ as defined by the Civil Aviation Air Navigation Order (ANO) 2009.
• Confirmation as to whether under the Rules of the Air Regulations (RoAR) 2007 whether PCA would require a CAA licence to undertake aviation activities (meeting the requirements of CAP168), or whether it could operate as an Unlicensed Airfield.
- PCA formerly operated under dispensations and specifically a licence variation for the Runway End Safety Areas (RESA). Confirmation is required that these dispensations and licence variations were revoked by the CAA following the closure of PCA in 2011. CAA was asked regarding the likelihood of reintroduction of these dispensations and variations should an application for a new operation licence for PCA be submitted to the CAA.

- The CAA has previously granted licences for airports with a Code2 runway and allowed a 10% enhancement on the declared distance of the runway to permit a Take-Off Distance Available (TODA) of up to 1,319m without the airport having to meet Code3 runway standards as set out in CAP168 licensing of Aerodromes. CAA was asked to confirm that PCA could be licensed to Code 2C runway standards with a TODA of no greater than 1,319m.

The CAA provided a formal response to thesequires on the 27th August 2014. The response letter is provided in Appendix H.
### 3 Recent Studies

This section gives a brief overview of the most recent studies commissioned by others on Plymouth Airport. Viable Commissioned York Aviation, who reported in February 2014 and Sutton Harbour Holdings commissioned aviation consultants Fjori who reported in March 2014.

#### 3.1 Fjori’s Aviation Study

In March 2014 Fjori Limited prepared an independent review examining the potential for and restrictions to aviation use at PCA on behalf of SHH. The Fjori report has been commissioned by SHH to independently assess the future feasibility of re-opening PCA for aviation use. The report is restricted to an examination of technical and operational matters with respect to aerodrome licensing with consideration also given to the demand for reinstated commercial services. The report does not assess planning policy matters or airport economics. The background to the airport’s current status (closed) is established and the declared positions from the Majority Freeholder (PCC) and the Minister for Transport are outlined.

PCA is identified as a ‘Congested Airport’ as defined in Article 255 of the Air Navigation Order 2009, its status as a congested airport is considered to impact significantly on potential future licensing arrangements. Specific reference is made to CAP793 ‘Safe Operating Practices at Unlicensed Airfields’ and the Rules of the Air Regulations (RoAR) 2010 which states that flights below 1,000ft over congested areas are prohibited. Further to this, safety considerations are sited from CAP793 specifying that climb-out approach and circuit paths at unlicensed aerodromes do not overfly built up areas. The Fjori report considers that the re-establishment of any flying at PCA would require the aerodrome to operate under a licence granted by the CAA.

It is noted that upon the closure of PCA, and the revocation of the aerodrome licence, that the site’s Air Traffic Zone (ATZ) was withdrawn. The report notes that any re-licensing application would require having to satisfy the CAA that adequate means to secure the airspace and safe use would need to be established.

The Fjori report considers that additional to a licence application to the CAA statutory requirements from other bodies (Environment Agency and Local Planning Authority) would need to be met. The report considers noise to be a significant environmental issue and stated that the previous licence’s noise boundary conditions were found to be extremely onerous.

Aerodrome safeguarding is also identified as a relevant planning issue. The Fjori report identifies that the existing runway was safeguarded to Code 2 instrument runway standards. This means that the runway has a declared distance limit of 1,199m which restricts the type of aircraft that could operate from PCA. There is considered to be insufficient lands within the current site envelope to provide a Code 3 compliant instrument runway which would allow for a greater range of aircraft type which would increase commercial potential.

Details of the former PCA’s Rescue End Safety Areas show that the end of the runway adjacent to Estover Industrial Estate was operating at much less than the minimal dimensional requirements specified in CAP168. Through correspondence
with the CAA Fjori have established that the relicensing of PCA would be treated as a new airport application and previous licence variations would not be applicable.

Fjori also undertook analysis of aircraft performance options to identify operational capabilities that a runway extension (incorporating RESA) could provide. The outcome of the analysis identified that the requirement to satisfy the minimum RESA requirements would consequently necessitate a reduction in the declared runway distances at PCA. Designing for a compliant RESA runway, if the existing site envelope was maintained, would significantly decrease the range of aircraft able to operate from PCA, and would also have a detrimental effect on the ability to increase passenger numbers from historic levels.

Fjori confirm that the principle aerodrome infrastructure at PCA remains in place. However, it is identified that the current condition of these assets is not fully known and full systems checks will be required by suitably qualified specialists to accurately estimate re-instatement costs. For example the fire station is identified as non-compliant with Rescue & Fire Fighting Services criteria and it is considered that any newly licensed aerodrome would require a new fire station to be in place. Also the runway is regarded to be one of the weakest regional airport runway structures in the UK, however it could still accommodate 50-seat aircraft operating in the current market.

Fiori indicate that experience from other comparable regional airports in the low cost carrier market indicate that PCA would require a runway with a minimum of 1,700 to 1,800m. Furthermore a comparison of runway alignments identified that PCA is WNW to ESE and would ideally be aligned WSW/ENE to face prevailing winds. Fjori make the observation that under the current alignment small aircraft could have occasional difficulty in landing or taking off if there was a strong cross wind.

The issue of local demand is considered in the context of the current supply of air services in the South West which is identified as the statistically best serviced region in England. The report recognises that there may be demand at Plymouth however notes that historically passengers were not flying from the former airport.

3.2 York Aviation’s Plymouth City Airport Study

York Aviation submitted their Plymouth City Airport study, Initial Passenger Projections and Economic Impact Projections, to Viable in 29th November 2013.

The report provides findings in considering the potential economic value of a re-opened Plymouth City Airport. York undertook a process of consultations in order to explore with relevant stakeholders the wider catalytic value of air services in Plymouth and what value there may be from re-opening the Airport.

York do highlight that where economic benefits are derived from scheduled air services (rather than FOST or other general and business aviation activities) these must be caveated by the assumption that a suitable air carrier can be attracted to operate these services.

York also notes that there may be some other opportunities, depending on the runway length, but overall the list of carriers that may operate at Plymouth is likely to be limited as the demand levels for any route are likely to be low.
York has undertaken a market assessment and passenger projections which is summarized as follows:

- In 2012, there were 2.85 million air passenger journeys to or from Devon and Cornwall, albeit some involved long surface journeys to and from London airports as well as Exeter, Bristol and Newquay.

- Around 11% of these passengers were flying for business and 89% were flying for leisure purposes.

- Initial passenger projections are derived by growing the demand to a basket of likely destinations over the period to 2023, the primary assessment year, using Department for Transport growth rates. York has then applied historic observed market capture rates to these (i.e. how much of the market Plymouth historically attracted out of the total demand to each destination) to determine how much demand a service to each of the selected destinations could be assumed to attract.

- In many cases, the demand was not sufficient to make services viable for any airline, but there are a limited number of core routes which may sustain sufficient passengers to make services viable.

- In 2023 York projects that there may be sufficient market potential for the Airport to sustain 69,000 passengers (using small 19-seat aircraft), 96,000 passengers with slightly larger 30-seat aircraft or, if the network was shared with Newquay, up to 152,000 passengers.

Based on the initial passenger forecasts set out above, York has made an assessment of the potential economic impact of a re-opened Plymouth City Airport in 2023. This analysis focusses on what might be termed the operational economic impacts of the airport. This is the Gross Value Added and employment generated on-site by the operation of the airport (the direct impacts), in the supply chain to the airport in the Plymouth area (the indirect effects) and that which is supported in the Plymouth economy by the expenditure of wages and salaries earned in the direct and indirect activities.

York has not assumed that the wider activities undertaken by British International (holder of the FOST contract) at Plymouth Airport also return. They have, however, made an allowance for a small number of management posts relating to FOST at the airport to reflect that these broader activities are not assumed to return.

For a 19 seater operation York forecasts 125 direct jobs, 20 indirect jobs and a GVA of £10.1m. For a 30 seater operation York forecasts 155 direct jobs, 25 indirect jobs and a GVA of £12.4m. For a 50 seater operation York forecasts 210 direct jobs, 30 indirect jobs and a GVA of £16.8m.

In order to understand the wider economic benefits York undertook consultations with key business and economic stakeholders. This indicated that connectivity is a significant issue affecting growth in the City and that, whilst some businesses and users in Plymouth have adapted following the closure of the Airport, the lack of local air services has started to impact on the growth of some firms. Furthermore it appears that inward investment and support of high value Research and Medical sectors may also be increasingly hampered over time by the lack of air services.
York also reported that Plymouth’s recent economic performance has been comparatively poor and productivity has been identified as a key area of concern. Their analysis indicates that air services may provide some benefits in terms of journey time savings calculated at between £2.3m and £4.6m annually.
4 Option Assessment Methodology

This section sets out the methodology for undertaking a high level options assessment of the PCA site. It identifies a set of potential options for the future of the airport and establishes assessment objectives. An assessment matrix has been devised with a set of sifting criteria. This has been generated alongside a scoring system that allows options to be appraised objectively.

4.1 Options Development

Arup has developed a list of site options for PCA derived from the evidence summarised in six supporting documents as set out below:

- Aviation Economics Air Traffic Demand Forecast (2013)
- Viable Plymouth Draft Business Plan (2013)
- Arup Plymouth Airport Infrastructure Review (2013)
- Orien’s Commercial Options for Plymouth City Airport (2011)
- Berkeley Hannover Consulting’s Plymouth Airport – Economic Study Into Air Services for Plymouth (2011)

A total of seven aviation options have been identified for inclusion in the assessment process. Table 1 below sets out the overall description and components for each of the options.

Table 1: Site options

<table>
<thead>
<tr>
<th>Option No.</th>
<th>Description</th>
<th>Key components</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Re-open PCA as a commercial RFFS CAT 6 Airport with expansion of operations</td>
<td>• Runway extension to a Code 3C non-instrument runway with a 1,602m TODA&lt;br&gt;• Runway strengthening to support larger aircraft 100-Seat +&lt;br&gt;• 90m Runway End Safety Areas (RESA)&lt;br&gt;• Terminal refurbishment &amp; expansion&lt;br&gt;• Additional land purchases, demolition and earthworks would be required&lt;br&gt;• Construction of taxiway bypass&lt;br&gt;• Upgrade of Rescue Fire Fighting Services (RFFS) capabilities to Cat 6</td>
</tr>
<tr>
<td>2</td>
<td>Re-open PCA as a commercial RFFS CAT 5</td>
<td>• Short runway extension to 1199m plus starter strips to create a Code 2C</td>
</tr>
</tbody>
</table>

1 Aviation Economics, Draft Plymouth City Airport: Air Traffic Demand Forecast, (2013).
5 Orien’s Advisors, Commercial Options for Plymouth City Airport, (2011).
<table>
<thead>
<tr>
<th>Option No.</th>
<th>Description</th>
<th>Key components</th>
</tr>
</thead>
</table>
|            | Airport with a limited expansion of operations | instrument runway but with a 1,319m TODA  
- Addition of Runway End Safety Areas 90m (at appropriate ground levels)  
- Operations for 50-70 seat aircraft range  
- Instrumentation runway modifications (can involve a combination of ground based precision guidance to aircraft in the form of radio signals and high intensity lighting along the runway)  
- Additional land purchases, demolition and earthworks are required  
- Terminal refurbishment & expansion  
- Construction of taxiway bypass  
- RFFS capabilities as at pre-airport closure (Category 5) |
| 3          | Re-open PCA as a commercial RFFS CAT 5 Airport | Runway thresholds displaced to maximise TODA to 1,167m (Code 2 runway)  
- Runway modified (landing distance available reduced) to provide 90m runway end safety areas (RESAs) at either end  
- Instrumentation runway modifications (can involve a combination of ground based precision guidance to aircraft in the form of radio signals and high intensity lighting along the runway)  
- 50-seat turboprop aircraft  
- RFFS capabilities as pre-airport closure (Category 5) |
| 4          | Re-open PCA with limited commercial services RFFS CAT 3 Airport | Runway thresholds displaced to maximise TODA to 1,167m (Code 2 runway)  
- Runway modified (landing distance available reduced) to provide 90m runway end safety areas (RESAs) at either end  
- Instrumentation runway modifications (can involve a combination of ground based precision guidance to aircraft in the form of radio signals and high intensity lighting along the runway)  
- Scheduled operations limited to 19 seat aircraft  
- RFFS capabilities (Category 3) |
<table>
<thead>
<tr>
<th>Option No.</th>
<th>Description</th>
<th>Key components</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Open Plymouth City Airport as a licensed airfield RFFS CAT 2 (General Aviation)</td>
<td>- Combined maximum of 700 movements per three month period for aircraft up to RFFS Category 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Runway 13 – TODA of 1,169m and Runway 31 TODA of 1,168m (Code 2 runway)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Chartered flights up to 19 seat aircraft</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Business aviation, air taxi, aero club, military, private flights, flight training and sea training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Runway modified (landing distance available reduced) to provide 90m runway end safety areas (RESAs) at either end</td>
</tr>
<tr>
<td>6</td>
<td>Staged approach to reinstating and incrementally increasing aviation service at Plymouth City Airport</td>
<td>- Stage 1 Reopen Plymouth Airport site as licensed airfield (General Aviation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Stage 2 Reopen Plymouth City Airport with a reduced level of service RFFS CAT 3</td>
</tr>
<tr>
<td>7</td>
<td>Re-open Plymouth Aerodrome as an Unlicensed Airfield (General Aviation).</td>
<td>- Runway 13 – TODA of 1,169m and Runway 31 TODA of 1,168m (Code 2 runway)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Charter flights up to 9 seats</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Category 2 RFFS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Business aviation, air taxi, aero club, military, private flights, flight training and sea training</td>
</tr>
<tr>
<td>8</td>
<td>Redevelopment of PCA site</td>
<td>- Obtain Planning Permission</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Demolition and removal works</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Sale of airport land</td>
</tr>
</tbody>
</table>
4.2 Option Assessment Objectives

In order to assess the suitability of the possible options, two overarching assessment objectives have been identified for the site. The objectives have been derived from research into the key factors that would influence the decision making process for the long term future of the airport site. The objectives have also been informed by the Plymouth Vision to become an international port city and stimulate economic growth.

Each option’s ability to fulfil these objectives is to be assessed as part of a sifting process to establish a short list of site options that can be carried forward for detailed assessment.

The two objectives for the PCA site are as follows:

- To create a financially viable airport or airfield that takes on a role in supporting Plymouth’s economy, through the following:
  - Infrastructure and operational costs that are not considered excessive
  - Increased connectivity and improved journey times for Plymouth, both internally within the UK and across Europe, servicing both local residents and businesses through provision of linkages to a variety of destinations.
  - Generation of appropriate revenue within the short, medium, or long term.

- To create a gateway for the city that serves to enhance the reputation of the city, secure future connectivity for the city and attract business interest from the rest of the UK and Europe. This would enable inward investment through targeted services and interconnection with Plymouth’s key industries.

The objectives have been separated into distinctive sub-categories in order to establish a clear and understandable approach through which the different options can be assessed. The sub-categories are set out in Table 2 below:

<table>
<thead>
<tr>
<th>Table 2: Objective sub-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Viability</strong></td>
</tr>
<tr>
<td><strong>Costs vs. Returns</strong></td>
</tr>
<tr>
<td>Leasehold Acquisition</td>
</tr>
<tr>
<td>Land Acquisition</td>
</tr>
<tr>
<td>Infrastructure</td>
</tr>
<tr>
<td>Operational</td>
</tr>
<tr>
<td>Revenue</td>
</tr>
</tbody>
</table>
4.3 Assessment Matrix

4.3.1 Scoring

As part of the development of this option assessment, a bespoke approach to appraisal has been adopted. This is primarily based on WebTAG7, which is the Department for Transport’s guidance on the conduct of transport studies, which focuses on the assessment of economic, environmental and social criteria. The guidance includes advice on how to set objectives and identify problems, and then develop potential solutions. However, this option assessment goes beyond the guidance offered by WebTAG and also applies WelTAG, which is the Welsh Government’s guidance on the appraisal of transport strategies or schemes. WelTAG builds on the WebTAG assessment in that it also encourages the appraisal of options against issues of acceptability, feasibility, deliverability, and risk. The project team identified the following criteria for consideration:

- Deliverability – an indication of whether the option can realistically be funded in the current market;
- Feasibility – whether there are any technical or operational barriers to implementation of the option;
- Acceptability – whether the option is likely to be acceptable to the public, the Council and other key stakeholders;
- Economic – covering economic impacts such as job numbers, quality of jobs, fit with existing economic activity, skills and wider economic impacts;
- Social – covering social impacts such as social inclusion, social cohesion, equality, diversity, and safety

It is important to note that the option assessment has been carried out using the available information and evidence. Further review and assessment would undoubtedly be required for any options which are taken forward.

A numeric scoring system has been developed in connection with the objective sub-categories. The significance of impact for each criterion is assessed using a five point scale, enabling scores to be assigned for each option. The scores are defined in Table 3 below.

Potential Ministry of Defence use has not been included in the options scoring. Analysis of wider economic benefits has not been undertaken, although comment has been provided.

<table>
<thead>
<tr>
<th>Table 3: Score Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly beneficial/ advantageous</td>
</tr>
<tr>
<td>Moderate beneficial/ advantageous</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Moderate adverse/ high risk</td>
</tr>
<tr>
<td>Large adverse/ high risk</td>
</tr>
</tbody>
</table>

7 Transport analysis guidance – WebTAG, Department for Transport (Updated January 2014), see https://www.gov.uk/transport-analysis-guidance-webtag
The scoring definitions indicate the degree to which options align with the objectives. The proposed scoring approach is to be utilised throughout the options assessment and allows for positive, negative and neutral scoring. Further details of how scores would be awarded are explained in the next section.

### 4.3.2 The Assessment Matrix Table

The assessment matrix set out in the table below establishes a set of appraisal criteria and describes how each option would be aligned and scored.

**Table 4: Plymouth City Airport options assessment matrix**

<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Viability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costs vs. Returns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leasehold Acquisition</td>
<td>A statement will be made in regards to how an option would be impacted by the costs associated with transferring the airport leasehold to a new operator.</td>
<td></td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>A statement is made on the degree to which each option would involve land acquisition.</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>A score would be applied to how an option would align with the level of infrastructure investment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of +2 suggests that the option would require no infrastructure investment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of +1 suggests that the option would require limited infrastructure investment necessary for re-commissioning of the site i.e. repairs, replacement as necessary.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of 0 suggests that the option would require a moderate level of infrastructure investment and involve a minor runway expansion in addition to associated re-commissioning works.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of -1 suggests that the option would require a high level of infrastructure investment; and involve expansion of the runway; in addition the option would incur significant land purchase costs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of -2 suggests that the option would require a very high level of infrastructure investment; involve significant expansion of the runway and terminal; in addition the option would incur significant land purchase costs.</td>
<td></td>
</tr>
<tr>
<td>Operational</td>
<td>A score would be applied to how an option would align with the level of staff numbers and operational costs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of +2 suggest that the option would comprise very low initial staff costs associated with on-going operations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of +1 suggests that the option would require low staff costs associated with on-going operations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of 0 suggests that the option would have medium staffing costs associated with on-going operations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of -1 suggests that the option would comprise high staffing costs associated with on-going operations.</td>
<td></td>
</tr>
</tbody>
</table>
### Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A score of -2 suggests that the option very high costs associated with on-going aviation operations.</td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
</tr>
<tr>
<td>A score would be applied to how an option would align with; provision of a profit, requirement of Local Authority subsidy, an incremental increase of aviation activities on the site (thereby facilitating future development).</td>
<td></td>
</tr>
<tr>
<td>For Example:</td>
<td></td>
</tr>
<tr>
<td>A score of +2 suggests that the option is expected to produce a significant surplus within a short duration of time following re-commissioning of the site for the purposes of aviation. This score would suggest that the option would require no subsidy in regards to capital expenditure or operational expenditure.</td>
<td></td>
</tr>
<tr>
<td>A score of +1 suggests that the option is anticipated to produce a moderate surplus and require only a minimal level subsidy during the initial phase of commencing aviation operations. Should costs become problematic the option could potentially revert to a reduced level in order to maintain aviation activity on the site.</td>
<td></td>
</tr>
<tr>
<td>A score of 0 suggests that the option is expected to produce a marginal surplus and that it may require some initial subsidy in regards to capital and operational expenditure over a number of years. The option could enable future growth and expansion of aviation of services, For example, Stage 1 Minimal General Aviation operations and Stage 2 Scheduled Air Services, Stage 3 Expansion of runway and increased operations.</td>
<td></td>
</tr>
<tr>
<td>A score of -1 suggests that the option would result in a loss and require Local Authority subsidy to underwrite operations for a number of years.</td>
<td></td>
</tr>
<tr>
<td>A score of -2 suggests that the option would result in significant losses on an annual basis and would require large sums of Local Authority subsidy during initial infrastructure development (capital expenditure) and on an on-going basis through the lifetime of the option.</td>
<td></td>
</tr>
</tbody>
</table>

### Feasibility

<table>
<thead>
<tr>
<th>Presence of a Willing Seller</th>
<th>A statement will be made with regards to the current situation and how an option would align with the ability to obtain the leasehold. The statement will consider the presence of a willing seller.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAA compliance</td>
<td>A commentary will be provided on whether an option is in accordance with Civil Aviation Authority policies and legislation (CAP168: Licensing of Aerodromes 2010, Rules of the Air Regulations 2007 and CAP793: Safe Operating Practices at Unlicensed Aerodromes).</td>
</tr>
<tr>
<td>Connections</td>
<td>A score would be applied to how an option would align with; providing for a variety of aircraft types and sizes, increasing Plymouth’s connectivity across the UK; providing direct connectivity across Europe and enable competitive pricing relative to other transport modes.</td>
</tr>
<tr>
<td></td>
<td>A score of +2 implies that the option would support a large range of aircraft types and sizes thereby facilitating travel across significant aeronautical distances e.g. 500nm range. The option would increase Plymouth’s connectivity to important transport hubs e.g. London, and directly increase Plymouth’s connectivity to destinations in Europe for the purposes of business travel and tourism.</td>
</tr>
<tr>
<td></td>
<td>A score of +1 suggests that the option would support a range aircraft types and sizes. A limited number of the aircraft would be capable of flights to destinations in a 500nm range. The option would likely increases Plymouth’s connectivity to main UK regional hubs such as</td>
</tr>
</tbody>
</table>
### Appraisal Criteria | Sub Criteria | Score
--- | --- | ---
| **London, Manchester, Glasgow, Edinburgh, and Belfast.** | A score of 0 suggests that the option would increase connectivity within the UK (aircraft with 200nm range) to appropriate destinations where connecting links to Europe can be caught. This score would indicate that fares would be slightly higher than alternative aviation and rail options. |  

| A score of -1 would suggest that a limited range of aircraft would be supported. The option would increase connectivity select destinations within the UK. The option would provide aviation services to businesses willing to pay higher premiums. |  

| A score of -2 would suggest that competition from other airports and other forms of transport with higher frequencies and more competitive fares would significantly limit the effectiveness of the airport in increasing connectivity. |  

| **Forecast Demand** | A statement with regards to the level of potential traffic i.e. demand present within Plymouth’s core district area for each assessment option in the short, medium and long term. |  

| **Retention of an Airline Operator** | A score would be applied to how an option would align with attraction and retention of an airline operator; investment interest i.e. enquiries by private sector parties, likelihood of success i.e. have a low risk of failure and closure. |  

| A score of +2 suggests a strong likelihood of attracting an airline operator as the option would enable a good level of frequency at competitive fares. This score would also indicate that enquiries had been made by possible investors/operators with a strong business case for the specific option. |  

| A score of +1 suggests that the option would have a moderate chance of attracting an airline operator. It also indicates that enquiries and possible business cases for the option have been brought forward indicating interest/presence of possible investors. |  

| A score of 0 suggests that the option would have a limited chance of attracting an airline operator with viability issues acting as deterrents. |  

| A score of -1 would suggest that the option is unlikely to attract and retain an airline operator due to high operational costs associated with the range of services on offer and the ability of more established south west airports to offer better deals. |  

| **Wider Benefits** | A statement will be made in regards to the degree to which an option establishes Plymouth Airport as a gateway to the City, raises the profile of the city, enhances access and results in job creation, also whether an option would generate a significant catalytic impact (indigenous/inward investment)⁸. |  

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⁸ Berkeley Hanover Consulting Limited, Plymouth City Council, Plymouth Airport – Economic Study Into Air Services for Plymouth 2011. (Page 7, Paragraph 2.10)
5 Options Assessment

This section provides a high level assessment of seven site options based on the above assessment method.

5.1 Option 1

Open Plymouth City Airport as a commercial RFFS CAT 6 Airport with expansion of operations.

Key Components:
- Runway extension to a Code 3 non-instrument runway with a 1,602m TODA
- Runway strengthening to support larger aircraft 100-Seat +
- Additional 90m Runway End Safety Area (RESA)
- Terminal refurbishment & expansion
- Land purchase, demolition and earthworks
- Construction of taxiway bypass
- Upgrade of Rescue Fire Fighting Services (RFFS) capabilities to Category 6

<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Viability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leasehold Acquisition</td>
<td>Option 1 would incur costs associated with transferring the airport leasehold to a new operator; these costs would significantly increase the initial financial expenditure/exposure necessary to obtain control of the PCA site.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Option 1 would perform negatively against this criterion as it would require significant sums of capital expenditure. [There is no evidence available on costs of acquiring the leasehold.]</td>
<td></td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>Option 1 would involve expanding the runway and require land acquisition to extend the envelope of the airport towards the Estover Industrial Estate. Active employment land would need to be taken out of action with the resultant displacement of business and jobs and the potential for delays and costs associated with compulsory purchase. The case for PCC to evoke its compulsory purchase powers is considered to be weak. The cost of land acquisition is unknown but would need to be incorporated into the business plan...</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Option 1 would perform negatively against this criterion as it would need to address complex issues in terms of land ownership and require significant sums of capital expenditure.</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Option 1 would involve a significant expansion of the runway by some 400 metres (up to1,602m) and development of the terminal building⁹. It would include construction of a taxiway bypass to increase operation capacity at the airport. There would be very high capital costs associated with upgrading the site for full commercial operations. The total cost of this option is estimated to be £69.6m ¹⁰.</td>
<td>-2</td>
</tr>
</tbody>
</table>

---

⁹ Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 22, Paragraph 1)
¹⁰ Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 36, Paragraph 5)
### Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>This option would incur very high additional land purchase, demolition and earthwork costs linked to the runway extension and strengthening. Leasehold purchase costs are also excluded.</td>
<td></td>
</tr>
<tr>
<td>A score of -2 is awarded on the basis that Option 1 would have very high initial land purchase costs and very high capital construction costs. Lease purchase costs will add further to this.</td>
<td></td>
</tr>
</tbody>
</table>

### Operational

| Option 1 is predicted to have high running costs i.e. Category 6 RFFS. | -2 |
| The capacity of the airfield would mean an increase in operations and therefore necessitate higher overall staffing numbers e.g. Air traffic control staff, also increases in security staff and managerial staff. |  |
| The airport would incur costs associated with maintenance, refuelling and obtaining slots at other airports. |  |
| A score of -2 is awarded to Option 1 on the basis that it would have very high operational costs resulting from the intensity of activities taking place on the site. |  |

### Revenue

| Option 1 would be burdened with high start-up costs and have high operational costs and therefore a high financial risk associated with it and could result in significant on-going losses on an annual basis if projected passenger numbers do not exceed historic levels. | -2 |
| A score of -2 is awarded as significant losses would be expected to take place on an annual basis under Option 1. |  |

### Feasibility

#### Presence of a Willing Seller

| The current leaseholder has a 150 year lease and it is understood that although they would be willing to discuss the sale of the leasehold, they are willing to consider land values associated with development potential not existing use value. | Yes, but at development value not existing use value |
| Option 1 would perform poorly against this criterion. |  |

#### CAA Compliance

| Option 1 would be compliant with the minimum requirements for a Code 3 non-instrument runway as it includes provision of 90m RESA. However it should be noted that CAP168: Licensing of Aerodromes recommends that RESAs extend to at least 240m for a Code 3 runway. | Yes |
| Should the CAA deem that RESA beyond the 90m minimum are necessary declared distances would have to be reduced or other mitigation measures to demonstrate an equivalent safety result. |  |

#### Connections

| Option 1 would support a range of aircraft types and sizes, as a result connectivity to the rest of the UK would be improved and destinations within a 500nm range could potentially be reached including France, Germany and Belgium. | +2 |
| Long-haul gateway airports such as Gatwick and Heathrow are becoming increasingly inaccessible. These airports are operating close to their full capacity and it is considered unlikely that appropriate slots could be obtained. |  |

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11 Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 29, Paragraph 3)
12 Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 29, footnote6)
13 Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 22, Table 3)
## Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>It would be a major challenge to establish a new London service (Stansted or London City) that would generate volumes of traffic comparable with that previously seen on PCA’s Gatwick service.</td>
<td></td>
</tr>
<tr>
<td>A score of +2 is awarded on the basis that Option 1 would increase Plymouth’s connectivity to the rest of the UK and Europe, facilitating both business and leisure travel.</td>
<td></td>
</tr>
<tr>
<td>Forecast Demand</td>
<td>Insufficient demand</td>
</tr>
<tr>
<td>A realistic estimate of potential future traffic volumes has been produced. 14 This indicates that there could be a modest build-up of passenger numbers between 2012 and 2032. By 2032 PCA could be expected to handle passenger levels comparable to historical peaks.</td>
<td></td>
</tr>
<tr>
<td>PCA annual traffic throughput peaked at fewer than 160,000 passengers in 2009, despite a wide range of destinations having been tried. 15 In 2009 the PCA had an operating loss margin of 23%. 16 This indicates that that Option 1 would not be capable of generating a surplus when considering forecast demand levels.</td>
<td></td>
</tr>
<tr>
<td>The duration of time necessary to arrive at traffic levels similar to the historic peak is significant. Therefore in the short to medium term traffic volumes would be inadequate for a commercial airline/airport operation.</td>
<td></td>
</tr>
<tr>
<td>It is considered that demand levels within Plymouth would be insufficient to support a financially sustainable Option 1.</td>
<td></td>
</tr>
<tr>
<td>Retention of an Airline Operator</td>
<td>-2</td>
</tr>
<tr>
<td>Whilst the airport would have increased capabilities and capacity to accommodate a variety of aircraft types and sizes, the inadequate levels of predicted traffic volume means that there would be high risks associated with establishing airline operations at Plymouth under Option 1.</td>
<td></td>
</tr>
<tr>
<td>For Civil Aviation Authority (CAA) compliance, the runway would be a non-instrument runway limited to visual approach conditions therefore in adverse weather conditions aircraft would have to divert to another airport. 17 It is considered that an airline would be unlikely to be attracted to an airport offering only non-instrument runway facilities.</td>
<td></td>
</tr>
<tr>
<td>Furthermore, it is unlikely that the Gatwick service would be resumed therefore any connections to London would be to unproven airports e.g. London City, Stansted or Southend. 18 There have been no enquiries for the level of services involved with Option 1.</td>
<td></td>
</tr>
<tr>
<td>A score of -2 is awarded on the basis that the financial risk on start-up and the uncertainty regarding the likely operational specifications would discourage an airline operator from moving their services to Plymouth.</td>
<td></td>
</tr>
</tbody>
</table>

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14 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 19, Paragraph 3)  
15 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 4, Paragraph 2)  
16 Berkeley Hanover Consulting Limited, Plymouth City Council, Plymouth Airport – Economic Study Into Air Services for Plymouth 2011.  
17 Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 29, Paragraph 2)  
18 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 33, Paragraph 3)
### 5.2 Option 2

**Open Plymouth City Airport as a commercial RFFS CAT 5 Airport with a limited expansion of operations.**

**Key Components:**

- Short runway extension to 1199m plus starter strips to create a Code 2C instrument runway but with a 1,319m TODA
- Addition of Runway End Safety Areas 90m (at appropriate ground levels)
- Operations for 50-70 seat aircraft range
- Instrumentation runway modifications (can involve a combination of ground based precision guidance to aircraft in the form of radio signals and high intensity lighting along the runway)
- Land purchases demolition and earthworks
- Terminal refurbishment & expansion
- Construction of taxiway bypass
- RFFS capabilities as at pre-airport closure (Category 5)

### Appraisal Criteria

<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wider Benefits</strong></td>
<td><strong>Wider Economic Benefits</strong></td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td>A fully commercial airport with a significant expansion of operations would act as an important employer, directly generating new jobs in connection with aviation activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Option 1 would establish Plymouth Airport as an important gateway into the city and connect Plymouth to multiple hubs and destinations for purposes of both leisure and business. This would constitute an increase in business related aviation and potentially lead to investment support in Plymouth’s economy through direct and induced effects.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arup has not undertaken an in-depth analysis of wider economic benefits.</td>
<td></td>
</tr>
</tbody>
</table>

### Financial Viability

<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs vs. Returns</strong></td>
<td>Leasehold Acquisition</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Option 2 would incur costs associated with transferring the airport leasehold to a new operator; these costs would significantly increase the initial financial expenditure/exposure necessary to obtain control of the PCA site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Option 2 would perform negatively against this criterion as it would require significant sums of capital expenditure.</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[There is no evidence available on costs of acquiring the leasehold.]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Land Acquisition</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Option 2 would involve expanding the runway and require land acquisition to extend the envelope of the airport towards the Estover Industrial Estate. Active employment land would need to be taken out of action with the resultant displacement of business and jobs and the potential for delays and costs associated with compulsory purchase. As the runway extension length is less than Option 1, less employment land would be lost therefore the negative impacts would be less. The case for PCC to evoke its compulsory purchase powers</td>
<td></td>
</tr>
<tr>
<td>Appraisal Criteria</td>
<td>Sub Criteria</td>
<td>Scoring</td>
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<td>-------------------------</td>
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</table>
|                         | is considered to be weaker than Option 1. The cost of land acquisition is unknown but would need to be incorporated into the business plan.  
  
  *Option 2 would perform negatively against this criterion as it would need to address complex issues in terms of land ownership and require significant sums of capital expenditure.*  
  
  | Infrastructure          | Option 2 would involve incurring initial land purchase and potential compulsory purchase costs (adjacent industrial estate), capital construction costs associated with a runway extension of approximately 100m (up to 1,313m)\(^{19}\) and the costs of necessary re-commissioning works\(^{20}\). The infrastructure cost of this option is estimated to be £29.6m\(^{21}\) excluding compulsory land purchase and leasehold costs.  
  
  *A score of -2 is awarded on the basis that Option 2 would have very high initial land purchase costs and very high capital construction costs.*  
  
  | Operational             | Option 2 would have high operational costs as a result of the airports capacity and subsequent staffing requirements i.e. RFFS staff, security staff, managerial staff, and ancillary staff.  
  
  In addition to staffing numbers the airport would incur costs associated with maintenance and refuelling, as well as obtaining more slots at other airports.  
  
  *A score of -2 is awarded on the basis that Option 2 would have high operational costs associated with the intensity of aviation activity predicted as taking place on the site.*  
  
  | Revenue                 | It is unlikely that Option 2 would generate a surplus in the medium to long term as there would be insufficient demand even if demand returned to pre-closure levels.  
  
  This option would have large costs and therefore high a risk associated with it and could result in significant on-going losses on an annual basis.  
  
  *A score of -2 is awarded as significant losses would be expected to take place on an annual basis under Option 2.*  
  
  | Feasibility             | Presence of a Willing Seller  
  
  The current leaseholder has a 150 year lease and it is understood that although they would be willing to discuss the sale of the leasehold, they are willing to consider land values associated with development potential not existing use value.  
  
  *Option 2 would perform poorly against this criterion.*  
  
  | CAA Compliance          | Option 2 comprises a 1,199m runway (TORA) plus starter strips which allows for a 1,319m TODA. London City Airport has a similar operation. Additionally there are established precedents whereby the CAA has permitted a 10% enhancement on declared distances of runways. A number of existing airports such as Gloucester Airport have made use of this in order to maximise the declared runway length.  

19 Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 20, Table 2)  
20 Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 30, Paragraph 2)  
21 Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 36, Paragraph 2)
<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
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<tbody>
<tr>
<td></td>
<td>The proposal to extend the runway’s TORA (Take-off Run Available) to 1199m plus create additional starter strips to facilitate a TODA of 1319m, but still designate the runway as a Code 2C Instrument Runway, is not considered acceptable in strict accordance with the letter of CAP 168, therefore this option would not be compliant or would need to be amended to achieve compliance for a Code 3 runway. The first amendment option would be to make the runway a non-instrument Code 3 runway which could be achieved without changing the runway strip dimensions (as in Option 1) but would have operational limitations. The second amendment option would be to make the runway a Code 3 Instrument Runway with an increased runway strip. The CAA has confirmed that the acceptance of a 10% enhancement of a Code 2 runway (limited to 1,199m TODA) to a 1,319m length runway at PCA has been rescinded. Therefore Option 2 would need to meet Code 3 standards to become licensed. Code 3 Instrument runway licensing standards would require the runway strip to be extended on either side of the centreline to a distance of 150m. This would necessitate large areas of land currently used for residential and commercial purposes to be compulsory purchased. In addition highway realignment works and earthworks would be required. It is viewed that these costs would be impractical and prohibitive. It is therefore considered that if a Code 2C Instrument Runway with a 1,319m TODA as proposed in Option 2 would not be compliant with the CAA policies it would require derogations to be achievable. The hazards and safety considerations of aviation and consequently the licensing of aerodromes means that the CAA are likely to be unwilling to grant such derogations without significant mitigation.</td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td>Option 2 could improve connectivity throughout the UK and provide connections to destinations within Europe. Destinations within a 500nm Range could potentially be reached utilising specific aircraft traveling directly from Plymouth. Potential destinations could include France, Germany and Belgium. The number of aircraft capable of making long distance flights and landing at Plymouth under this option would be limited. Long-haul gateway airports such as Gatwick and Heathrow are becoming increasingly inaccessible. These airports are operating close to their full capacity and it is considered unlikely that appropriate slots could be obtained. It would be a major challenge to establish a new London service (Stansted or London City) that would generate similar volumes of traffic comparable with that previously seen on PCA’s Gatwick service. A score of +2 is awarded on the basis that Option 2 would increase Plymouth’s connectivity within the UK and facilitate both business and leisure travel.</td>
<td></td>
</tr>
<tr>
<td>Forecast Demand</td>
<td>A realistic estimate of potential future traffic volumes has been produced. This indicates that there could be a modest build-up of passenger numbers between 2012 and 2032. By 2032 PCA could be Insufficient demand.</td>
<td>Insufficient demand</td>
</tr>
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</tbody>
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22 Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 20, Table 2)
### Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>expected to handle passenger levels comparable to historical peaks.</td>
<td></td>
</tr>
<tr>
<td>PCA annual traffic throughput peaked at fewer than 160,000 passengers in 2009, despite a wide range of destinations having been tried. In 2009 the PCA had an operating loss margin of 23%, this indicates that that Option 2 would not be capable of generating a surplus when considering forecast demand levels. The duration of time necessary to arrive at traffic levels similar to the historic peak is significant. In the medium to long term traffic volumes would be inadequate for a viable commercial airline/airport operation. It is considered that demand levels within Plymouth would be insufficient to support a financially sustainable Option 2.</td>
<td></td>
</tr>
<tr>
<td>Retention of Airline Operator Operating under Option 2 would give the airport increased capabilities and capacity to accommodate a variety of aircraft types and sizes, the inadequate levels of predicted traffic volume means that there would be high risks associated with moving airline operations to the site. In the case of certain airline operators, Plymouth would be unattractive because operating there would mean duplicating services they have in place elsewhere e.g. Flybe at Exeter. Other airline operators (e.g. Ryanair) would require a runway of at least 1,800m to support their aircraft. It is considered unlikely that the Gatwick service would be resumed therefore any connections to London would be to unproven airports e.g. London City, Stansted or Southend. Option 2 would be unable to match pricing competition from other established South West Airports such as Newquay and Exeter which have overlapping catchment areas with Plymouth. A score of -2 is awarded on the basis that the financial risks on start-up and the uncertainties with regards to operational specifications would discourage an airline operator from moving their services to Plymouth.</td>
<td>-2</td>
</tr>
<tr>
<td>Wider Economic Benefits A fully commercial airport with an expansion of operations would act as an important employer, directly generating new jobs in connection with aviation activities. Option 2 would establish Plymouth Airport as an important gateway into the city and connect Plymouth to multiple hubs and destinations for the purposes of both leisure and business. This would constitute an increase in business related aviation and potentially lead to investment support in Plymouth’s economy through direct and induced effects. Arup has not undertaken an in-depth analysis of wider economic benefits.</td>
<td>+2</td>
</tr>
</tbody>
</table>

23 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 20, Paragraph 3)
24 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 33, Paragraph 3)
5.3 Option 3

Open Plymouth City Airport as a commercial RFFS CAT 5 Airport.

Key components:

- Runway thresholds displaced to maximise TODA to 1,167m (Code 2 runway)
- Runway modified (landing distance available reduced) to provide 90m runway end safety areas (RESAs) at either end
- Small expansion of the runway paved area
- Instrumentation runway modifications (can involve a combination of ground based precision guidance to aircraft in the form of radio signals and high intensity lighting along the runway)
- 50-seat turboprop aircraft
- RFFS capabilities as pre-airport closure (Category 5)

<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Viability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leasehold Acquisition</td>
<td>Option 3 would incur costs associated with transferring the airport leasehold to a new operator; these costs would significantly increase the initial financial expenditure/exposure necessary to obtain control of the PCA site.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Option 3 would perform negatively against this criterion as it would require significant sums of capital expenditure.</strong> [There is no evidence available on costs of acquiring the leasehold.]</td>
<td></td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>Option 3 would not involve expansion of the runway and therefore would not require land purchases to be made.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Costs vs. Returns</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Option 3 would require reduced levels of infrastructure investment in comparison to Options 1 and 2. However, there would still be significant capital restoration costs associated with runway works i.e. small expansion of paved area, additional grading and 90m (RESAs). The infrastructure cost of this option is estimated to be £9.9m, excluding leasehold purchase costs.</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>There would be necessary refurbishment/maintenance works e.g. grass cutting around airfield, resealing of apron slabs and clearing vegetation from drainage channels, fitting out the terminal and control tower, re-commissioning of RFFS station, Navigational Aids, and airfield lighting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>A score of -1 is awarded on the basis that Option 3 would have lower capital costs in connection with airport infrastructure renewal when compared to Options 1 &amp; 2.</strong></td>
<td></td>
</tr>
<tr>
<td>Operational</td>
<td>Option 3 would have high operational costs as a result of the airports capacity and subsequent staffing requirements i.e. RFFS staff, security staff, managerial staff, and ancillary staff.</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>The airport would incur costs associated with maintenance and refuelling, as well as costs associated with obtaining necessary slots at other airports.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>A score of -2 is awarded on the basis that Option 3 would have very</strong></td>
<td></td>
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25 Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 30, Paragraph 2)
<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>high operational costs associated with the intensity of aviation activity predicted as taking place on the site.</td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>It is unlikely that Option 3 would generate a surplus in the medium to long term as there would be insufficient demand even if demand returned to pre-closure levels.</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>This option would have relatively large costs and therefore high risks associated with it and could result in significant and on-going losses on an annual basis. The option is unlikely to receive investment interest and would therefore require significant subsidy during both development and operational phases.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of -2 is awarded as significant losses are expected to take place on an annual basis under Option 3.</td>
<td></td>
</tr>
<tr>
<td>Feasibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of a Willing Seller</td>
<td>The current leaseholder has a 150 year lease and it is understood that although they would be willing to discuss the sale of the leasehold, they are willing to consider land values associated with development potential not existing use value.</td>
<td>Yes, but at development value not existing use value</td>
</tr>
<tr>
<td></td>
<td>Option 3 would perform poorly against this criterion.</td>
<td></td>
</tr>
<tr>
<td>CAA Compliance</td>
<td>Option 3 would be compliant with the minimum requirements for a Code 2 runway as it includes provision of 90m RESA. However it should be noted that CAP168: Licensing of Aerodromes recommends that RESAs extend to at least 120m for a Code 2 Instrument runway. Should the CAA deem that RESA beyond the 90m minimum are necessary declared distances would have to be reduced or other mitigation measures to demonstrate an equivalent safety result.</td>
<td>Yes</td>
</tr>
<tr>
<td>Connections</td>
<td>Option 3 could improve connectivity throughout the UK and allow connections to destinations within Europe. Destinations within a 500nm Range could potentially be reached utilising specific aircraft traveling directly from Plymouth(^26). Potential destinations could include France, Germany and Belgium.</td>
<td>+2</td>
</tr>
<tr>
<td></td>
<td>The number of aircraft that would be capable of making long distance flights and landing at Plymouth under this option would be limited.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Long-haul gateway airports such as Gatwick and Heathrow are becoming increasingly inaccessible. These airports are operating close to their full capacity and it is considered unlikely that appropriate slots could be obtained.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It would be a major challenge to establish a new London service (Stansted or London City) that would generate volumes of traffic comparable with that previously seen on PCA’s Gatwick service.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A score of +2 is awarded on the basis that Option 3 would increase Plymouth’s connectivity within the UK and facilitate both business and leisure travel.</td>
<td></td>
</tr>
<tr>
<td>Forecast Demand</td>
<td>A realistic estimate of potential future traffic volumes has been produced(^27). This indicates that there could be a modest build-up of passenger numbers between 2012 and 2032. By 2032 PCA could be expected to handle passenger levels comparable to historical peaks.</td>
<td>Insufficient demand</td>
</tr>
</tbody>
</table>

\(^{26}\) Review of Plymouth City Airport: Infrastructure Review, Arup, 2013, (Page 20, Table 2)

\(^{27}\) Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 19, Paragraph 3)
### Appraisal Criteria

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PCA annual traffic throughput peaked at fewer than 160,000 passengers in 2009, despite a wide range of destinations having been tried. In 2009 the PCA had an operating loss margin of 23%; this indicates that that Option 3 would not be capable of generating a surplus when considering forecast demand levels. The duration of time necessary to arrive at traffic levels similar to the historic peak is significant; therefore in the medium to long term traffic volumes would be inadequate for a viable commercial airline/airport operation without subsidy. <em>It is considered that demand levels within Plymouth would be insufficient to support a financially sustainable Option 3.</em></td>
<td>-2</td>
</tr>
</tbody>
</table>

### Retention of an Airline Operator

Option 3 would re-open PCA with the infrastructure to support a limited number of small to medium sized aircraft (50 seats). It is possible that the limited range supported would discourage an airline operator as there would be reduced flexibility in the type of flights they could run.

The inadequate levels of predicted passenger volumes mean that there would be high risks associated with moving operations to the site.

In the case of certain airline operators, Plymouth would be unattractive because operating there would mean duplicating services in place elsewhere e.g. Flybe at Exeter. Other airline operators (e.g. Ryanair) would require a runway of at least 1,800m to support their aircraft.

It is considered unlikely that the Gatwick service would be resumed therefore any connections to London would be to unproven airports e.g. London City, Stansted or Southend.

It is considered Option 3 would be unable to match pricing competition from other established South West Airports such as Newquay and Exeter which have overlapping catchment areas with Plymouth.

*A score of -2 is awarded on the basis that the financial risks on start-up and the uncertainties in regards to operational specifications would discourage an airline operator from moving their services to Plymouth.*

### Wider Benefits

<table>
<thead>
<tr>
<th>Wider Economic Benefits</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>A fully commercial airport would act as an important employer, directly generating new jobs in connection with aviation activities. <em>Option 3 would establish Plymouth Airport as an important gateway into the city and connect Plymouth to multiple hubs and destinations for the purposes of both leisure and business. This would constitute an increase in business related aviation and potentially lead to</em></td>
<td>+2</td>
</tr>
</tbody>
</table>

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28 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 4, Paragraph 2)
29 Berkeley Hanover Consulting Limited, Plymouth City Council, Plymouth Airport – Economic Study Into Air Services for Plymouth 2011
30 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 22, Paragraph 3)
31 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 33, Paragraph 3)
Appraisal Criteria | Sub Criteria | Scoring
--- | --- | ---
Financial Viability | Option 4 would incur costs associated with transferring the airport leasehold to a new operator; these costs would significantly increase the initial financial expenditure/exposure necessary to obtain control of the PCA site. | Yes
| Option 4 would perform negatively against this criterion as it would require significant sums of capital expenditure. [There is no evidence available on costs of acquiring the leasehold.] | | 
| Option 4 would not involve expansion of the runway and therefore would not require land purchases to be made. | No

5.4 Option 4

Open Plymouth City Airport with limited commercial services RFFS CAT 3 Airport.

Key Components:
- Runway thresholds displaced to maximise TODA to 1,167m (Code 2 runway)
- Runway modified (landing distance available reduced) to provide 90m runway end safety areas (RESAs) at either end
- Instrumentation runway modifications (can involve a combination of ground based precision guidance to aircraft in the form of radio signals and high intensity lighting along the runway)
- Scheduled operations limited to 19 seat aircraft
- Maximum 700 movements in busiest three months of the year, for aircraft allowed under RFFS Category 4 (50 seat aircraft)
- RFFS capabilities (Category 3)

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32 Supplementary Paper, Plymouth City Airport Infrastructure Cost Estimates, Arup 2014, (Page 8)
### Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Scoring</th>
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<tr>
<td>safety derogations.</td>
<td></td>
</tr>
</tbody>
</table>

**A score of -1 is awarded on the basis that Option 4 would have high capital costs in connection with airport infrastructure renewal.**

#### Operational

| Option 4 would permit scheduled operations limited to aircraft with 19 seats, therefore operational costs would be significantly lower than Options 1, 2 & 3. |
|-------------------------------------------------------------------------------------------------------------------------------------|---------|
| There would be:                                                                                                                 | -1      |
| • Reduced staff costs: air traffic control, security, check-in, baggage handlers, managerial staff, maintenance and cleaning staff. |
| • Reduced running costs: reduce fuel cost, vehicle maintenance.                                                                   |         |
| Furthermore, Option 4 would incur costs associated with attaining the necessary slots at other airports.                           |         |

**A score of -1 is awarded on the basis that Option 4 would have high operational costs relative to the intensity of aviation activity predicted as taking place on the site.**

#### Revenue

| Demand for a London service could potentially be satisfied through the provision of a London Stansted service, however there would be a significant one-way fare that could be considered exorbitantly high. Including air passenger duty and assuming a 75% load factor a one-way fare is estimated to be £144 per passenger. |
|-------------------------------------------------------------------------------------------------------------------------------------|---------|
| Breakeven fares for a daily flight to Manchester would range between £102-248 each way (assuming 65% and 75% load factors). These figures indicate that for this operation to be economically sustainable at PCA fares would have to be double that of Flybe’s similar Q400 operations out of Exeter. |
| For a daily operation to Glasgow the breakeven one-way fare is estimated to range between £147 -£377 assuming 65%-75% load factors. The above fare is high in comparison with Flybe’s Exeter service operating six flights per week to Glasgow with additional flights available via Manchester, The one way fare for these services averaged £75 in 2013. |

**A score of -1 is awarded on the basis that Option 4 would incur significant costs associated with high levels of air passenger duty experienced on each leg in the UK. It is considered that Option 4 would be an on-going loss making operation.**

#### Feasibility

<table>
<thead>
<tr>
<th>Presence of a Willing Seller</th>
<th>Yes, but at development value not existing use value</th>
</tr>
</thead>
<tbody>
<tr>
<td>The current leaseholder has a 150 year lease and it is understood that although they would be willing to discuss the sale of the leasehold, they are willing to consider land values associated with development potential not existing use value.</td>
<td></td>
</tr>
</tbody>
</table>

**Option 4 would perform poorly against this criterion.**

---

33 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 24, Paragraph 4)
34 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 27, Paragraph 1)
35 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 28, Paragraph 1)
<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAA Compliance</strong></td>
<td>Option 4 would be compliant with the minimum requirements for a Code 2 runway as it includes provision of 90m RESA. However it should be noted that CAP168: Licensing of Aerodromes recommends that RESAs extend to at least 120m for a Code 2 Instrument runway. Should the CAA deem that RESA beyond the 90m minimum are necessary declared distances would have to be reduced or other mitigation measures to demonstrate an equivalent safety result.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Connections</strong></td>
<td>Option 4 could improve connectivity throughout the UK and enable limited some connectivity to destinations within Europe. Destinations within 500 nautical miles range could be reached utilising specific aircraft traveling directly from Plymouth.</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td>Long-haul gateway airports such as Gatwick and Heathrow are becoming increasingly inaccessible. These airports are operating close to their full capacity and it is considered unlikely that appropriate slots could be obtained.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It would be a major challenge to establish a new London service (Stansted or London City) that would generate volumes of traffic comparable with that previously seen on PCA’s Gatwick service.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>A score of +1 is awarded on the basis that Option 4 would improve Plymouth’s connectivity. However it would be able support fewer aircraft than Options 1,2 &amp; 3 and those capable of travelling to destinations within 500 nautical miles range would only be able to do so while supporting a limited payload.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Forecast Demand</strong></td>
<td>There is no certainty that there is sufficient demand to support this type of operation when considering the limited range of services that are likely to be offered, the high premiums and no direct London service. It is considered unlikely that the scheduled services that would be offered would cater to all the needs and demands of the business community, so while there may be a demand base it could be considered insufficient for this type of operation.</td>
<td>Insufficient demand</td>
</tr>
<tr>
<td></td>
<td>In 2011 Berkley Hanover consulted with 25 companies operating in Plymouth and asked about their level of reliance on Plymouth City Airport. To the question ‘How important is Plymouth City Airport to company operations?’ 23 companies responded fully and of those only one stated the existing air services were of major importance to its operations (Glasgow, Manchester and Leeds). Two other companies used the airport regularly for UK regional air services 90 trips/month.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In 2013, through the Chamber of Commerce Arup consulted with 22 Plymouth based companies, eight of which stated that loss of Plymouth Airport had changed the way they do business. Only one company stated that they had considered relocating.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Several respondents considered that they had lost business and that they have had to alter their travel behaviour shifting to more expensive car and train modes as well as air travel from Bristol. Seven respondents considered that the re-establishment of air connections would be of small benefit dependent upon the destinations that would be available.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>It is considered that demand levels within Plymouth are insufficient to support a financially sustainable Option 4.</strong></td>
<td></td>
</tr>
<tr>
<td>Appraisal Criteria</td>
<td>Sub Criteria</td>
<td>Scoring</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>Retention of an Airline Operator</td>
<td>Option 4 would be unable to match pricing competition from other established South West Airports such as Newquay and Exeter which have overlapping catchment areas with Plymouth. The smaller the aircraft used, the higher the fare would need to be in order to reach break-even levels. It is a standard rule that economies of scale exist in the aviation industry so that smaller aircraft have higher costs per available seat kilometre than larger aircraft. It is therefore considered unlikely under Option 4 that the airport would be able to price competitively against other travel modes such as car or train. It is unlikely that the Gatwick service would be resumed therefore any connections to London would be to unproven airports e.g. London City, Stansted or Southend making Plymouth an unattractive site to airline operators. There would be very few operators interested or capable (with their current fleet) of providing services under Option 4. Few aircraft exist that could operate from PCA under Option 4 with a full payload and only two (the recently re-launched ATR-42-500 and the DHC-6-400) remain in production. All other small turbo-prop aircraft have not been in manufacture for over ten years and eventually will need to be retired.</td>
<td>-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wider Benefits</th>
<th>Wider Economic Benefits</th>
<th>+1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reopening Plymouth Airport with scheduled services would create new jobs in connection with aviation activities however; there would be fewer full time employment (FTE) positions in comparison with the full commercial options. Aviation services under Option 4 would be for a high premium and dependent on the airline operator obtaining services to the correct destinations to cater to the demand base. These could potentially include: London Stansted, Dublin and Glasgow.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Option 4 would establish Plymouth Airport as an entry point into the city and potentially connect Plymouth to targeted destinations within the UK for the purposes of business travel. This would constitute an increase in business related aviation and possibly lead to investment support in Plymouth’s economy. York Aviation has carried out an assessment of the potential economic value of a re-opened Plymouth City Airport on behalf of Viable. York Aviation’s economic impact projection results for 2023 approximate that the Gross Value Added (GVA) to Plymouth’s economy would be £10.1m. Arup has not undertaken an in-depth analysis of wider economic benefits or validated York’s findings. |

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36 Plymouth City Airport: Traffic Demand Forecast Report, Aviation Economics, 2013, (Page 33, Paragraph 3)
5.5 Option 5

Open Plymouth City Airport as a licensed airfield (for General Aviation use)

Key components:
- Runway 13 – TODA of 1,169m and Runway 31 TODA of 1,168m (Code 2 runway)
- Charter flights up to 9 seats (overall aircraft length from 9m up to but not including 12m)
- Category 2 RFFS
- Business aviation, air taxi, aero club, private flights, flight training and sea training
- Runway modified (landing distance available reduced) to provide 90m runway end safety areas (RESAs) at either end

<table>
<thead>
<tr>
<th>Appraisal Criteria</th>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Viability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leasehold Acquisition</td>
<td>Option 5 would incur costs associated with transferring the airport leasehold to a new operator; these costs would significantly increase the initial financial expenditure/exposure necessary to obtain control of the PCA site.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><em>Option 5 would perform negatively against this criterion as it would require significant sums of capital expenditure.</em> [There is no evidence available on costs of acquiring the leasehold.]</td>
<td></td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>Option 5 would not involve expansion of the runway and therefore would not require land purchases to be made.</td>
<td>No</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Option 5 would require reduced infrastructure investment in comparison with Options 1 to 4. However, Option 5 would involve necessary refurbishment and maintenance works e.g. grass cutting around airfield, rescaling of apron slabs, clearing vegetation from drainage channels and re-commissioning of RFFS station, navigational aids, and airfield lighting. The infrastructure cost of this option is estimated to range between £7.8m to £7.9 excluding costs of obtaining the leasehold.</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td><em>A score of -1 is awarded on the basis that Option 5 would have high capital costs in connection with airport infrastructure renewal.</em></td>
<td></td>
</tr>
<tr>
<td>Operational</td>
<td>Under Option 5 there would not be scheduled airline services or charter aircraft of 10 passengers or more. The airfield would be able to support small business jets and air taxis. As a consequence of reduced activities Option 5 would have low operational costs due to the minimal services on offer. There would be low staffing requirements associated with reduced RFFS level (Category 2) and low levels of Air Traffic Control advice.</td>
<td>+1</td>
</tr>
<tr>
<td></td>
<td><em>A score of +1 is awarded on the basis that Option 5 would have low staffing costs linked to on-going operations.</em></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>The Berkley Hanover Report considered that General Aviation activities an unlicensed airfield could produce a small surplus provided that:</td>
<td>0</td>
</tr>
</tbody>
</table>

37 Supplementary Paper, Plymouth City Airport Infrastructure Cost Estimates, Arup 2014, (Page 8)
### Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The presences of military activities (FOST) at PCA were retained</td>
<td></td>
</tr>
<tr>
<td>• Aero Club activities were retained</td>
<td></td>
</tr>
<tr>
<td>• There was no capital expenditure or debt repayments</td>
<td></td>
</tr>
<tr>
<td>• The CCA imposed no additional licensing requirements</td>
<td></td>
</tr>
</tbody>
</table>

This conclusion was based upon movement forecasts for 2012 (developed from previous trends years 2008 and 2010), the resultant figures estimated the level of passenger throughput, the intensity and value of activities including private flights and air taxi (business aviation).

Following the airports closure in 2011 there has been prolonged disruption of aviation activates, subsequently previous movement trends could be considered invalid.

There is currently limited evidence from prospective user organisations to support assumptions that military (FOST) or Aero Club training would be readily available re-commence operations at PCA.

Additionally there is limited evidence available to indicate the likely intensity or value of private flights and air taxi (business aviation) activities.

However, if these operations could be attracted back to PCA on the right terms the revenue stream could be positive, although more information would be required in a detailed business plan. Although no detailed business plan has yet been presented such a plan cannot be ruled out at this stage.

*A score of 0 is awarded on the basis that Option 5 could be viable if sufficient use could be attracted to PCA and that this would need to be presented in a detailed business plan by any potential operator. Any plan would need to show that GA operations could bear the costs of obtaining the leasehold or undertaking the initial refurbishment and infrastructure re-commissioning works without public subsidy.*

### Feasibility

<table>
<thead>
<tr>
<th>Presence of a Willing Seller</th>
<th>The current leaseholder has a 150 year lease and it is understood that although they would be willing to discuss the sale of the leasehold, they are willing to consider land values associated with development potential not existing use value.</th>
<th>Yes, but at development value not existing use value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 5 would perform poorly against this criterion.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAA Compliance</td>
<td>Option 5 would be compliant with the minimum requirements for a Code 2 runway as it includes provision of 90m RESA. However it should be noted that CAP168: Licensing of Aerodromes recommends that RESAs extend to at least 120m for a Code 2 Instrument runway. Should the CAA deem that RESA beyond the 90m minimum are necessary declared distances would have to be reduced or other mitigation measures to demonstrate an equivalent safety result.</td>
<td>Yes</td>
</tr>
<tr>
<td>Connections</td>
<td>Connections would be dependent on the varying needs of the charter market. Potentially a small range of destinations would be on offer and the regularity of flights would vary. However, it is noted that Option 5 does provide air connectivity to the city and allows future development of the aviation market in Plymouth and catchment.</td>
<td>+1</td>
</tr>
</tbody>
</table>
### Appraisal Criteria

<table>
<thead>
<tr>
<th>Sub Criteria</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>A score of +1 is awarded on the basis that Option 5 could provide the</td>
<td></td>
</tr>
<tr>
<td>scheduled services that both key stakeholders and the community of Plymouth</td>
<td></td>
</tr>
<tr>
<td>would like to see.</td>
<td></td>
</tr>
<tr>
<td>Forecast Demand</td>
<td></td>
</tr>
<tr>
<td>Connections would be entirely dependent on the varying needs of the</td>
<td></td>
</tr>
<tr>
<td>charter market. It may be that there is sufficient demand for an GA</td>
<td></td>
</tr>
<tr>
<td>operation as this option is not dependant on local catchment in the</td>
<td></td>
</tr>
<tr>
<td>same manner as full commercial airport or scheduled service driven options.</td>
<td></td>
</tr>
<tr>
<td>However, Option 5 would not provide the scheduled services that some</td>
<td></td>
</tr>
<tr>
<td>stakeholders would like to see.</td>
<td></td>
</tr>
<tr>
<td>Sufficient demand</td>
<td></td>
</tr>
<tr>
<td>Retention of Airline Operator</td>
<td>0</td>
</tr>
<tr>
<td>Under Option 5 Aero Club and training organisations would be able</td>
<td></td>
</tr>
<tr>
<td>to undertake operations, active marketing could increase the level of</td>
<td></td>
</tr>
<tr>
<td>aero club and training flights and strengthen the financial incentive for</td>
<td></td>
</tr>
<tr>
<td>operating from the airfield. Enquires have been made by interested parties</td>
<td></td>
</tr>
<tr>
<td>who have prepared a business case that is in line with Option 5 i.e. Viable.</td>
<td></td>
</tr>
<tr>
<td>A score of 0 is awarded on the basis that Option 5 would not require</td>
<td></td>
</tr>
<tr>
<td>attraction and retention of a commercial airline operator.</td>
<td></td>
</tr>
<tr>
<td>Wider Benefits</td>
<td></td>
</tr>
<tr>
<td>Wider Economic Benefits</td>
<td>+1</td>
</tr>
<tr>
<td>A licensed GA airfield would function as a small employer directly</td>
<td></td>
</tr>
<tr>
<td>generating a limited number of FTE positions in connection with aviation</td>
<td></td>
</tr>
<tr>
<td>activities.</td>
<td></td>
</tr>
<tr>
<td>Although General Aviation operations will fluctuate with the market.</td>
<td></td>
</tr>
<tr>
<td>Maintaining airport operations in Plymouth would allow the city to</td>
<td></td>
</tr>
<tr>
<td>market itself as ‘air connected’ with associated reputational benefits and</td>
<td></td>
</tr>
<tr>
<td>wider economic gain.</td>
<td></td>
</tr>
<tr>
<td>A score of +1 is awarded as Option 5 provides Plymouth with an airport that</td>
<td></td>
</tr>
<tr>
<td>would provide connections for the city, although it is recognised that</td>
<td></td>
</tr>
<tr>
<td>passenger demand would be very low with limited onsite services.</td>
<td></td>
</tr>
</tbody>
</table>
5.6 Option 6

Option 6 represents a staged approach to reinstating and incrementally increasing aviation service at Plymouth City Airport.

Key components:

- Stage 1 Reopen Plymouth Airport site as licensed airfield (General Aviation)
- Stage 2 Reopen Plymouth City Airport with a reduced level of service CAT 3 RFFS

As such the appraisal scoring is the same as Option 5 for Stage 1 and Option 4 for Stage 2. The scoring for Option 6 is therefore not repeated in this section.

5.7 Option 7

Open Plymouth Aerodrome as an Unlicensed Airfield (General Aviation)

Key components:

- Runway 13 – TODA of 1,169m and Runway 31 TODA of 1,168m (Code 2 runway)
- Charter flights up to 9 seats
- Category 2 RFFS
- Business aviation, air taxi, aero club, private flights, flight training and sea training

CAA has confirmed that PCA is identified as being situated in a congested area where the Rules of the Air Regulations (RoAR) require that an airport must be licensed if it is to operate in any form as an airport or aerodrome. CAA guidance does not permit operation of an unlicensed airport in a congested area and therefore this Option is not feasible and has not been scored.
5.8 Option 8

Redevelopment of the Plymouth City Airport Site

Key Requirements to progress alternative site redevelopment:

- Positive policy framework
- Secure planning consent
- Demolition and removal works
- Sale of airport land

This option has not been scored against the defined criteria as it is not considered appropriate to test an alternative land use development proposal against airport operations criteria. Instead a summary description of the costs, benefits and issues for this proposal is given.

- Option 8 would incur costs associated with transferring the airport leasehold to a new owner; these costs may increase the initial financial expenditure/exposure necessary to open up the site for redevelopment and have a significant bearing on viability and the land use mix necessary to regenerate the site.

- Option 8 would incur some abnormal site remediation costs associated with demolition works involving the break up and removal of the site’s existing infrastructure.

- Option 8 could result in a very high financial return (single payment from sale of land), this would be dependent on the proposed site use and a successful planning application.

- Option 8 would rule out any future aviation use for the existing PCA site. Any future Plymouth Airport would require a new site with associated land acquisition, planning and infrastructure costs.
## Summary Score Table

The following table summarises the options and how they have scored against the appraisal criteria, a total score is provided against each option indicating the degree to which they are considered to be viable.

<table>
<thead>
<tr>
<th>Financial Viability</th>
<th>Costs vs. Returns</th>
<th>Feasibility</th>
<th>Wider Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option 1:</strong> Open as a fully commercial CAT 6 Airport with expansion of operations</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Option 2:</strong> Open as a fully commercial CAT 5 Airport with a limited expansion of operations</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Option 3:</strong> Open as a fully commercial CAT 5 Airport</td>
<td>Yes</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Option 4:</strong> Reopen with a reduced level of service CAT 3</td>
<td>-2</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td><strong>Option 5:</strong> Open as an licensed airfield (General Aviation)</td>
<td>-2</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td><strong>Option 6:</strong> Stage 1 Open Plymouth Airport site as an licensed airfield (General Aviation)</td>
<td>-2</td>
<td>-2</td>
<td>-2</td>
</tr>
<tr>
<td><strong>Option 6:</strong> Stage 2 Open Plymouth City Airport with a reduced level of service CAT 3</td>
<td>-2</td>
<td>-2</td>
<td>-2</td>
</tr>
</tbody>
</table>

### Financial Viability

- **Leasehold Acquisition:** Yes, Yes, Yes, Yes, Yes, Yes, Yes, Yes
- **Land Acquisition:** Yes, Yes, No, No, No, No, No, No
- **Infrastructure:** -2, -2, -1, -1, -1, -1, -1, -1
- **Operational:** -2, -2, -2, -2, -2, -2, -2, -2
- **Revenue:** -2, -2, -2, -2, -2, -2, -2, -2

### Feasibility

- **Presences of a Willing Seller:** Yes, but at development value not existing use value, Yes, but at development value not existing use value, Yes, but at development value not existing use value, Yes, but at development value not existing use value, Yes, but at development value not existing use value, Yes, but at development value not existing use value, Yes, but at development value not existing use value, Yes
- **CAA compliance:** Yes, No, Yes, Yes, Yes, Yes, Yes, Yes
- **Connections:** +2, +2, +2, +2, +2, +2, +2, +2
- **Forecast Demand:** Insufficient demand, Insufficient demand, Insufficient demand, Insufficient demand, Sufficient demand, Sufficient demand, Insufficient demand, Insufficient demand
- **Retention of an Airline Operator:** -2, -2, -2, -2, -2, -2, -2, -2

### Wider Benefits

- **Wider Economic Benefits:** +2, +2, +2, +2, +2, +2, +2, +2
- **Total Score:** -4, -4, -3, -2, -2, -2, -2, -2
6 Summary

6.1 Options 1, 2 & 3

Options 1 to 3 are similar, in that they would see the operation of commercial aircraft operations and therefore require high levels of demand to be present within Plymouth Airport’s catchment area. Each option would incur high operational costs associated with commercial airport activities and there is unlikely to be sufficient forecast demand.

There are some differences between these options, for example it is considered that runway strengthening would be necessary for options 1 and 2 to support standard regional jet aircraft due to their heavier loads and increased tier pressures. Under Option 3 it is considered that the existing runway could still accommodate 50 seat aircraft and avoid the need for the cost of strengthening the runway.

The number of aircraft models that could be supported under Options 1 to 3 increases by little relative to the high costs of the runway extensions necessary to facilitate them. The introduction of new aircraft designs does not significantly alter the distances flights are capable of making from Plymouth, as under Options 3 (restoration to pre-closure conditions) there are aircraft capable of flights to destinations in a 500nm range. The maximum payload (passenger uplift) that aircraft could take on would increase only marginally as a result of runway extensions. Due to these factors the scores awarded for the above options are very similar and it is considered that there is little benefit to enhancing the runway infrastructure beyond that suggested under Option 3.

However, the evidence suggests there is insufficient demand in Plymouth and the surrounding region to support the expense of runway infrastructure investment as specified under Options 1 and 2 (the costs would prove “prohibitively expensive”38). It is considered a realistic assumption that airline operators would look at Plymouth’s historic demand in the region of 150,000 passengers per annum and make their decision on whether or not they wish to base themselves in such a high risk environment. As such, a view is taken that attraction of airline operator is unlikely.

Although Option 3 requires less capital and would operate aircraft similar in type to those used historically at Plymouth, the lack of sufficient demand is considered to be the main excluding factors that remove Options 1, 2 & 3 from further consideration in the assessment process.

6.2 Options 4, 5 & 6

Options 4 and 5 are interrelated and could form the basis for an incremental increase of aviation services at Plymouth. Option 6 considers these two options as a combined staged approach and identifies that a licenced airfield limited to General Aviation would require lower infrastructure costs relative to other options. Following successful operations of the licenced airfield for General Aviation (Option 5), market conditions and viability could be reviewed and it could then be possible to re-introduce scheduled services from PCA as per Option 4.

A staged approach has been presented as part of Viable’s draft business case proposals for reintroducing air services to Plymouth, with the final stage being restoration of the airport.
to full commercial operations. It is worth noting that the financial investment necessary to undertake the minimal level of re-commissioning works, and the acquiring of the airport leasehold remain substantial factors of consideration in the decision making process with regards to both Options 4 & 5.

Several types of activities are identified as major contributors to the possible financial viability of Options 4 & 5 (business aviation, air taxi, aero club, military, private flights, flight training and sea training). There are acknowledged uncertainties with regards to the future presence and intensity of such activities which may increase financial exposure and could deter future investors from committing to any phased options for Plymouth Airport. For example the transfer of FOST activities back to Plymouth from Newquay has been identified as a potential foundation of the Viable draft business plan. This is in principal only as no formal commitment to do so has been received to date by Viable from the Ministry of Defence.

It should be noted that for less frequent operations with smaller aircraft the air fares are likely to be more expensive to cover operational and other fixed charges associated with the airport.

However Option 5 (licenced airport used for General Aviation), potentially building to Option 4 should market conditions improve, is considered an feasible scenario should an in depth assessment and detailed business plan be presented that provides evidence that, for example: the level of demand for non-scheduled operations and the realization of suitable destinations for scheduled operations can provide sufficient income to support and sustain the required capital and operational investment.

Further, CAA licencing can be achieved at PCA for General Aviation and would allow the airport to continue operation in the future should an operator present a detailed, viable and sustainable business plan acceptable to Plymouth City Council. Safeguarding the site under Option 5 would allow for the future reconsideration of its aviation future if such a business plan was presented by a potential operator. Safeguarding would also allow for any positive changes that may occur in aviation policy, economics, regulations or technology, although it is recognised that there is no guarantee of such positive changes occurring.

6.3 Option 7

Option 7 examines the potential for reopening PCA as an Unlicensed Airfield, under this option the airfield would not have to meet licencing standards required under CAP 168 Licencing of Aerodromes. This could reduce the level of expenditure need to re-establish some form of aviation activities at PCA, additionally operational savings could potentially be made. Under this option aviation activities would be limited to business aviation, air taxi, aero club, private flights, flight training and sea training.

A major factor of consideration for this option is the suitability of the PCA site in the context of aviation statutory instruments specifically the Air Navigation Order 2009 and the Rules of the Air Regulations (RoAR) 2007.

The Air Navigation Order 2009 sets out the definition for a congested area as “in relation to a city, town or settlement, means any area which is substantially used for residential, industrial, commercial or recreational purposes.”

The RoAR sets out low flying prohibitions including the 1,000feet rule which states: “an aircraft flying over a congested area of a city town or settlement shall not fly below a height of 1,000 feet above the highest fixed obstacle”. The RoAR exempts any aircraft from the low flying prohibition if it is in accordance with normal aviation practice at a licensed or Government aerodrome. Therefore an aerodrome should be licensed if it is to operate in a congested area such as Plymouth.
The Rules of the Air (Amendment) Regulations 2010 sets out a similar exemption under rule 6(aa) to a Training Aerodrome (valid only where the aircraft concerned is flown by a person under instruction). Our interpretation is that an unlicensed airfield would be restricted solely to training activities and would not be able to operate private flights, chartered or business operations.

Additionally the CAA has considered this scenario and concluded that the exemption to all training aerodromes is an unintended consequence of Rule 6(aa). In CAP793 the CAA has stated that it is intended to correct this through a further amendment at the next available opportunity.

For the purposes of this assessment it is considered that an unlicensed airfield on the PCA site would not be compliant with CAA regulations and Option 7 is therefore rule out.

6.4 Option 8

Option 8 is distinctly different from the specified aviation options and involves a wider array of issues associated with permanent closure and redevelopment of the site.

Option 8 would lead to the airport site being used for alternative land uses other than aviation. It would mean the permanent cessation of aviation activity on the site and effectively the permanent loss of a site which could have some future aviation role for General Aviation use if a sufficiently robust and detailed business plan is presented to Plymouth City Council. The significance of this is that it would effectively mean loss of any aviation facilities for Plymouth as it is extremely unlikely another airport site could be found or developed. This option, which would lead to permanent loss of PCA needs to be carefully weighed against the alternative options that could retain the site with some level of aviation use.

However, it is noted that should the site be permanently closed and decommissioning works undertaken, an area measuring 45ha, composed of flat/level land, with limited contamination would become available to serve the land requirements of the city going forward. The site is in a good location to north east of Plymouth city centre with a strong connection to the A38 via the A386. It is considered that former airport site could be considered as a prime location for alternative mixed use regeneration in this scenario.

As identified above an issue interlinked with the permanent closure and sale of the existing airport site is the possibility of a providing for a new airport for Plymouth in an alternative location. A new airport would be a highly controversial option. A site would need to be identified that could provide for a minimal runway length of 1,800m to place Plymouth on par with other regional airports, together with attendant passenger and operational facilities, car parking and transport access. The traffic demand forecasts clearly show that Plymouth’s latent (and historic) demand could not support this option.

The capital costs of building a new airport would be extremely high even if a site could be identified. The only condition under which this option could even begin to be considered seriously would be if other local regional airports such as Exeter or Newquay were to close. This is considered highly unlikely given the levels of investment happening at both locations so the possibility of a new airport at Plymouth has not been considered further.

A further view could be taken that despite the failure to identify a commercially robust option the permanent loss of a site that has the potential to be re-regulated by the CAA in the future would be short sighted for a city that is considered relatively peripheral in terms of location.
7 Potential Changes for Aviation

This chapter examines potential long term issues and changes that may affect the UK domestic airport and airline industry. No detailed information is available on these issues but they may affect the viability of Plymouth City Airport (PCA) site for future aviation.

The table below identifies possible technological, regulatory and fiscal changes that may occur in the aviation sector and the resultant opportunities that could emerge should the PCA site be retained for aviation use and safeguarded in planning policy terms for the plan period to 2031. The table provides a commentary of the risks and implications associated with the possible future changes.

The table clearly illustrates the uncertainty associated with such potential changes that may occur in the future.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Context</th>
<th>Potential Change / Risk</th>
<th>Future Impact on PCA</th>
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</thead>
<tbody>
<tr>
<td>Air Passenger Duty</td>
<td>Air Passenger Duty (APD) was introduced in 1994 and has since seen several increases, 160% for short-haul flights and by 225% for long-haul flights. The tax brings £2.8 billion into the Exchequer, and that is expected to rise to £3.8 billion by 2016-17. The UK’s APD is the highest passenger tax on flying in the world. Germany, France, Italy and Austria charge comparable tax, however on average the UK pays five times more passenger departure tax than other EU countries. Many EU countries do not have any APD, while some introduced it then abandoned it because of its impact. The countries that have retained it have done so at a lower level than in the UK. The Republic of Ireland abolished its version of APD from April 2014 having previously lowered it in 2011 and deemed it as still being too high. Holland, Denmark, Norway and Malta have abolished their version of the tax, with Germany freezing theirs earlier in 2013 after a Government review showed it was greatly harming their aviation industry.</td>
<td>It was recently announced in the budget that, from April 2015 APD bands C and D would be abolished. The change means that band B will become the highest band and money will be saved on flights to some long haul destinations. However, airline operations from PCA were restricted to short haul flights, therefore this recent change to APD would have limited or no immediate impact on options to re-introduce air services from PCA. Reform of APD could continue to gather support and changes made for the purpose of encouraging tourism and boosting economic growth and ensuring job creation. Any such changes would impact on air travel in the UK and could impact on some issues outlined in the option assessment above as barriers to the operational viability of PCA. The impact of any potential changes to APD on the aviation market or the viability of operations at PCA cannot currently be assessed. The possibility of changes to APD resulting in favourable conditions for PCA is speculative in nature as ultimately reforms to or abolition of APD is dependent on the objectives of policy makers.</td>
<td>Uncertainty of reform</td>
</tr>
<tr>
<td>Economic Growth</td>
<td>Economic growth is a key driver for air traffic growth. The global economy has strengthened during 2013 with the UK’s economic performance being one of the strongest among the European countries. The UK has strengthened its position as a lead country for Foreign Direct Investment (FID) flows, this indicating long-term interest of foreign investors, and their confidence and commitment to the UK economy. The findings of the UK Aviation Forecasts 2013 state: “Demand for air travel is forecast to increase within the range of 1% - 3% a year up to 2050, compared to historical growth rates of 5% a year over the last 40 years.” A Demand Forecast has been prepared and which considers the competitive position of PCA and includes a 20 year passenger forecast.</td>
<td>The findings of the UK Aviation Forecasts show that there is projected growth in aviation expected to take place up to 2050. However the levels of growth projected are lower than those previously experienced in the UK over a similar timeframe. The growth forecasts suggest that major airports such as London and Manchester will be under substantial pressure and may be in excess of their total capacity. It is already increasingly difficult for airlines to obtain flight slots especially during peak times. The saturation of airports through an increased demand for services could impact on the ability of a future airline operator to operate services from PCA.</td>
<td>Economy returning to growth but forecast demand for Plymouth not expected to grow sufficiently to improve commercial viability.</td>
</tr>
<tr>
<td>Civil Aviation Authority (CAA) licensing</td>
<td>The CAA is obliged to develop and apply interventions (regulatory or otherwise) to mitigate identified safety risks. The CAA has stated its commitment to achieving a proportionate balance between regulatory and non-regulatory interventions. The CAA has established a “gold-plating” review team to identify and amend those existing regulations which are shown to add unnecessary cost and regulatory burden for no safety benefit. In May 2014 the CAA published CAP1188 ‘Let There Be Flight’ consolidation document introducing the draft General Aviation (GA) policy framework for the purposes of balancing the regulation GA market sector. CAP1188 states: “Not all risks can be effectively mitigated, and in some cases, the cost of mitigating the risk will outweigh the aggregate safety benefit. For these reasons, the CAA must focus its finite resources on mitigating those risks which are most important.” Certain types of regulation designed to prevent system wide safety risk remain outside the scope of the framework this includes airspace regulation and Rules of the Air Regulations (RoAR).</td>
<td>As stated above in the options assessment, compliance with licensing requirements is a restrictive factor impacting the feasibility of an operational aerodrome at PCA. At this stage the changes occurring in the regulation of aerodromes are unknown and changes could be either beneficial or negative to the PCA site. The CAA has the regulatory authority to allow dispensations to its own requirements. Dispensations from the licensing standards would require a very strong business case to be presented to the CAA and a demonstration that equivalent safety standards could be reached through alternative mitigation measures, such mitigation could have high associated costs of their own and be restricting factors. Whilst many airports and aerodromes operate with dispensations, the ability of a potential operator to present a viable business case would be severely impeded by the other onerous conditions at PCA as identified within the options assessment.</td>
<td>Uncertainty of Reform</td>
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</table>
Aircraft Technologies reduce costs, improve on environmental impact, landing and take of distances

The aviation sector has continually evolved as new technologies emerge and as environmental considerations have become more prevalent.

Long term rise in oil prices will make fuel a larger part of airline operating expenses driving a need for more fuel efficient aircraft.

There has been a trend in recent years that has seen development of larger aircraft as a method that reduces fuel burn and costs per seat. Airlines select larger aircraft within each market segment to meet their needs.

A recent example in the continued development of new aircraft technologies is the medium sized Bombardier CSeries which launched in 2013. It comprises a standard aeroplane design, however includes new Geared Turbofan engines under carbon composite wings. The design promises significant fuel efficiency savings. The CSeries is aimed at the 100-150 seat regional market.

Concept designs are being developed for the next generation of aircraft.

Ideas are emerging for aircraft that would be:
- Manufactured from lightweight materials thereby increasing efficiency and reducing the fuel costs of flying.
- Shaped to reduce noise pollution.
- Larger, whilst being designed to be capable of take-off on smaller runways, opening up access to smaller airports and more remote areas.

The future capabilities of these aircraft is uncertain and cannot be assessed. There is likely to be a progression of the market and technologies. However it is considered that in the future there will remain limitations to services that are on offer and to the destinations that newer aircraft will fly to.

The specifications of future aircraft would determine whether or not they may be capable of landing at PCA given current runway constraints. Specifications are currently unknown.

A detailed review of options would need to be undertaken in the context of the future aviation market to determine the viability of any operations.

The condition of PCA Assets

The existing infrastructure at is described in detail in the Review of Plymouth Airport Infrastructure (see Appendix B). The review identifies the condition of the runway, the main terminal building, the Rescue and Fire Fighting Services (RFFS) station and other airport infrastructure as requiring significant refurbishment and/or redevelopment. The capital costs of three options are summarised by infrastructure elements, these costs are considered significant impacting on the viability of the PCA site.

Retaining the aerodrome for purposes other than aviation would result in continued erosion of the runway conditions and other associated infrastructure.

It is considered that the prolonged absence of operational use and maintenance practices at the former PCA site would lead to further degrading to the condition of airport infrastructure. This would have a direct impact on the financial expenditure necessary to re-establish aviation uses on the PCA site at a future date.

Consolidation of regional airports

The UK Government’s broad support for the growth of regional airports is set out in its Aviation Policy Framework. However, a broad trend in recent years appears to be a growth or consolidation of route networks at larger airports, and a decline in the number of destinations served from smaller airports. This has led to a number of smaller airports being closed and other regional airports reporting losses in recent years.

The Airports Commission discussion

Consolidation of the UK airports could continue. The result of which would be larger hub airports such as Bristol having a more prominent position in the market. Hub airports would have an established range of services on offer.

It is considered that under these circumstances the challenge of re-commissioning PCA would increase as the airport would be unable to compete effectively against the services on offer elsewhere.

Uncertainty of future aircraft specifications and resultant ability of the PCA site to accommodate new aircraft.

Increased re-commissioning costs

Continued consolidation expected
A paper on Utilisation of the UK’s Existing Airport Capacity states: “some consolidation of the market may be absorbed without causing significant diminution of connectivity to either individual regions or the UK as a whole. Indeed, it may be argued that consolidation of the UK’s regional airports into fewer, larger airports could enhance regional connectivity, as larger airports serving bigger catchment areas could attract a wider range of services, enhancing route networks and other services”.

<table>
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<th>Growth of Exeter and Bristol airports / Development of Plymouth’s road and rail connections</th>
<th>The Demand Forecast Report (see Appendix C) identifies that the former PCA site had an overlapping catchment with both Exeter and Newquay airports. Bristol’s airport is also identified as offering competing services.</th>
<th>Should PCA remain closed for a prolonged period of time it is considered that the other airports servicing the South West would see growth and be able to establish stronger positions in the market.</th>
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<td>The continued growth of Bristol and Exeter will make reopening PCA more challenging. Improved road and rail connections could be developed linking Plymouth with Exeter and Bristol Airports and with London. This improved connectivity would be significantly beneficial to Plymouth.</td>
<td>Prohibitive competitive South West market</td>
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<td></td>
<td>Improvements to Plymouth’s connections</td>
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8 Conclusions

8.1 Overview

This study has considered future options for Plymouth City Airport alongside both policy and local context issues regarding to the airports current status.

It has examined the experiences from regional airports elsewhere and taken consideration of trends in the UK aviation market. As part of the study, a 20 year passenger forecast has been prepared (2012 – 2032) and route analyses has been undertaken to determine break even fares and profitability margins.

The study has further been informed by an assessment of the existing on-site infrastructure conditions. The infrastructure costs necessary for re-commissioning the airport under several scenarios have been estimated:

- Option 1: Re-open as a commercial CAT 6 airport with expansion of operations;
- Option 2: Re-open as a commercial CAT 5 airport with a limited expansion of operations and enhanced level of service; and
- Option 3: Reopen as a fully commercial CAT 5 airport.

The minimum re-commissioning and refurbishment interventions have been identified through the preparation of a supplementary infrastructure costs estimates paper (See Appendix J)

- Option 4: Re-open PCA as licenced airport with commercial services RFFS CAT 3 Airport.
- Option 5: Open Plymouth City Airport as a licensed airfield RFFS CAT 2 (General Aviation).
- Re-open Plymouth Aerodrome as an Unlicensed Airfield (General Aviation).

The background evidence base informed the development of an option assessment framework. A long list of options, many of which had been previously considered by previous studies, was assessed through this framework. Several of the options were sifted from further consideration because there is insufficient demonstrable market demand for the options and short to medium term viability was not evident. In addition these options would have significant barriers that could render them unfeasible.

The feasibility issues considered in the study include the existence of airline operators with appropriate fleets that could establish services that would operate from Plymouth. The short runway at Plymouth restricts the aircraft types that could land, and has historically limited operations preventing participation in European low cost and holiday charter markets. These factors severely impact on the airport’s ability to attract and retain a new airline operator.

The viability of each option is challenged by high capital investment costs associated with re-commissioning/refurbishing and bringing the airport up to the minimum necessary operational specifications in accordance with the CAA licencing requirements.

The re-opening of Plymouth Airport as an unlicensed airfield is not considered feasible due to CAA stipulations regarding flying over congested areas.

However, a route to future operation of the airport as a licensed airfield (general aviation), could potentially be developed. It would require a detailed business plan to show that infrastructure and ongoing operational investment costs could be covered by revenue. It is
considered that it would be heavily dependent on specific activities being present such as Ministry of Defence, private flights and Aero Club training.

It should be noted that there is a strong possibility that options involving the reintroduction of air services would require operational subsidy during the first few years of operations and a build-up of activity. However, the permanent loss of the PCA site to aviation use would most likely mean the permanent loss of the ability to reinstate aviation links from Plymouth to the rest of the UK and Europe. A new airport in a new location in Plymouth would not be realistic proposition, given the need for a large enough site and capital investment.

Reinstatement of air services would be a possibility through Option 5, a licenced airport with General Aviation activities. However, more detailed consideration of the business plan would be required. As part of a detailed business plan evidence would need to demonstrate that the infrastructure requirements and operational costs of Option 5 could be funded and that the operation would be viable in the long term. Safeguarding of the PCA site is an option whilst this evidence is collected.

8.2 Information Limitations

In carrying out the option assessment Arup have been faced with a number of information limitations that could have a bearing on the options presented and recommendations made. These include:

- Costs associated with the purchase of additional land to extend the runway (including CPO).
- The value of the relinquished lease.
- Lack of benchmarking information on unlicensed airfield operations that would demonstrate the likely profitability of such an option under known constraints.
- A detailed business case would needed to be undertaken for the reopening of PCA as an unlicensed airfield before an informed opinion could be drawn on whether or not this option could be financially successful and limit the level of underwriting exposure of the City Council.
Appendix A

Policy Review
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.
# Contents

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<td>Summary</td>
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1 Introduction

Ove Arup and Partners Limited (‘Arup’) has been commissioned by Plymouth City Council (‘the Council’) to prepare a study to inform the Plymouth Plan, having specific regard to the long term future of Plymouth Airport (‘the airport’).

A key element of the study is to ascertain whether there is a sound economic case for reintroducing air services to Plymouth based at the existing site.

This report forms one component of a series of technical reports:

- Policy Review
- Infrastructure Assessment
- Demand Forecast

The purpose of this review is to provide an update to the relevant policy framework context for Plymouth Airport in light of more recently published policy documents; namely: the National Planning Policy Framework (2012) and the Aviation Policy Framework (2013), and reflect on the on-going work of the Airports Commission (2013-15).

The review will cover the Plymouth Core Strategy; the Derriford Area Action Plan Submission Draft and emerging priorities from the LEP which underpin the importance of connectivity to sub regional economic development across Devon and Somerset.

The relevant aviation studies which have been carried out on the airport by York Aviation (2006) and Berkeley Hanover (2011) with a Master Plan for the airport published by Plymouth Airport Company Limited (2008) are also considered.
2 National Planning Policy

Relevant national planning policy is set out in the National Planning Policy Framework (NPPF) (March, 2012).

The core principle of the NPPF is that of ‘a presumption in favour of sustainable development’ (paragraph 14) which means that development proposals according with the development plan should be approved – unless material considerations indicate otherwise.

The following paragraphs relate specifically to economic development and infrastructure covering the provision and development of airports.

The NPPF aims to build a strong and competitive economy which requires local planning authorities to plan proactively to meet the development needs of business and support an economy fit for the 21st century (Paragraph 20).

Paragraph 31 states that: ‘local planning authorities should work with neighbouring authorities and transport providers to secure investment necessary to support strategies for the growth of ports, airports or other major generators of travel demand in their areas’. [emphasis added]

Specific to large infrastructure projects, paragraph 33 states that when planning for ports, airports and airfields that are not subject to a separate national policy statement, plans should take account of their growth and role in serving business, leisure, training and emergency service needs.

Reinforcing the importance of a collaborative approach to planning, paragraph 162 states that local planning authorities should work with other authorities and providers to take account of the need for strategic infrastructure including nationally significant infrastructure within their areas.

PCC Input: Commentary on Duty to Co-operate and what has been happening between Cornwall CC, Devon CC and PCC broadly in terms of strategic transport strategy and specifically regional airport policy strategy.

Paragraph 41 affirms that local planning authorities should identify and protect sites and routes which could be critical in developing infrastructure to widen transport choice.

This requirement of the NPPF is the basis for this study. Plymouth’s Core Strategy (adopted in April 2007) is being refreshed to reflect the changes to the planning system through the Localism Act and the NPPF. The city’s new local plan will be known as the ‘Plymouth Plan’.

This report will form part of the evidence base informing the Plymouth Plan, with regard to the long term future of Plymouth Airport.
3 Aviation Policy

The aviation policy context consists of:

- Aviation Policy Framework (2013)

Of importance for this study and the production of the Plymouth Plan will be the emerging findings and reports from:

- The Airports Commission (2013-15)

3.1 Aviation White Paper: The Future of Air Transport

This paper (published in 2003) established a strategic framework for the development of airport capacity within the United Kingdom. The paper aimed to be applicable for 30 years, taking into account forthcoming significant developments in aviation infrastructure. The paper is structured on a region-by-region basis, with a section relevant to the South West and specifically Plymouth.

The paper sets out an approach to aviation which:

- Recognises the economic importance of air travel to national and regional economies;
- Reflects people’s desire to travel by air and take advantage of the opportunities that this brings;
- Seeks to reduce the environmental and social impacts of airports and respects the rights and interests of those affected by airport development;
- Makes the best use of existing airport capacity and minimises the need for airport development at new locations;
- Provides greater certainty in the planning of future airport capacity.

Paragraph 10.6 of the paper states that there is ‘significant potential for growth at existing airports in the South West of England... ’ which is likely to generate significant economic benefits for the region. It was acknowledged that the majority of this growth is however, likely to be at Bristol Airport as it remains the largest airport within the South West region.

Paragraph 10.26 states that: ‘during the consultation a proposal was put forward for a new airport to the east of Plymouth. As this was not covered by the consultation, we have not reached conclusions on it.’

This proposed site was within South Hams to the east of Plymouth. Whilst the feasibility of this option was assessed, this proposition is now considered dead - this site (Sherford) was identified for housing within the Devon Structure Plan; an Area Action Plan has since been adopted for the area in 2007 by South Hams District Council for an urban extension in broadly the same location.

Paragraph 10.26 of the paper concludes that: ‘the Government is content, therefore, for this issue to be considered by regional and local authorities, having
careful regard to the alternatives. **These are to extend the runway at the existing Plymouth City Airport, or to take advantage of air services available from other airports in the region potentially capable of serving the Plymouth catchment area.**' [emphasis added]

The basis of this study is to examine the recommendation above - to survey the condition and capability of the facilities at the existing Plymouth City Airport; to analyse the historic and forecast demand for air services from the Plymouth Airport catchment area; whilst taking into account more recent developments in aviation policy (see following sections).

### 3.2 Aviation Policy Framework

In July 2012, the Department for Transport consulted on its strategy for aviation: the draft Aviation Policy Framework. This high-level strategy sets out Central Government’s overall objectives for aviation and the policies it proposed to achieve those objectives.

The final Aviation Policy Framework produced in March 2013 replaces the 2003 Air Transport White Paper as Government’s policy on aviation, alongside any refinements Government decides to make following the recommendations of the independent Airports Commission which is working up options for the future role of regional airports.

By defining Government’s objectives and policies on the impacts of aviation, the Aviation Policy Framework sets out the parameters within which the Airports Commission will work.

The Aviation Policy Framework was informed by the 600-plus responses received to the 2011 scoping document and the nearly 500 responses received to the 2012 consultation on the draft Aviation Policy Framework. The framework is underpinned by two core principles:

- **Collaboration:** By working together with industry, regulators, experts, local communities and others at all levels, to identify workable solutions to the challenges and share the benefits of aviation in a fairer way than in the past.

- **Transparency:** To facilitate improved collaboration, it is crucial to have clear and independent information and processes in place. Those involved in and affected by aviation need to have a clearer understanding of the facts and the confidence that proportionate action will be taken at the international, national or local level.

This document, (along with the publication of the Airports Commission reports) supersedes the Aviation White Paper – The Future of Air Transport.

The document discusses a number of topics which are pertinent to this study. There are a number of references made to the contribution aviation makes to the UK economy:

- ‘We believe that aviation infrastructure plays an important role in contributing to economic growth through the connectivity it helps deliver. For example, it provides better access to markets, enhances...
communications and business interactions, facilitates trade and investment and improves business efficiency through time savings, reduced costs and improved reliability for business travellers and air freight operations.’

Paragraph 1.2.

- ‘There is broad agreement that aviation benefits the UK economy, both at a national and a regional level... the economic benefits are significant, particularly those benefits resulting from the connectivity provided by aviation. In addition we believe there to be social and cultural benefits from aviation.’ Paragraph 1.3 [emphasis added]

The benefits to the UK economy are summarised as follows:

- Gross Domestic Product and Jobs
- Imports and Exports
- Manufacturing, Skills and Technology
- Value of Business and General Aviation
- Greater Productivity and Growth
- Tourism
- Travel, Culture and Family

There is a particular emphasis in paragraphs 1.20 onwards on the growth and importance of airports outside London. Paragraph 1.21 emphasises that: ‘For more remote parts of the UK, aviation is not a luxury, but provides vital connectivity. Nineteen million passengers took domestic flights in 2011.’

Paragraph 1.22 outlines that airports can provide: ‘focal points for business development and employment by providing rapid delivery of products by air and convenient access to international markets. For example, Birmingham Airport employs only 500 people directly, but 150 companies on the airport site employ a total of 7,000 people.’

Paragraph 1.23 of the Framework highlights the opportunity for other airports to: ‘accommodate wider forecast growth in demand for aviation in the UK, which could help take some pressure off London’s main airports. The availability of direct air services locally from these airports can reduce the need for air passengers and freight to travel long distances to reach larger UK airports.’

At paragraph 1.26 the Department for Transport: ‘fully recognise the importance of air services to these areas, and will be inclined to support applications by devolved and regional bodies to establish Public Service Obligations (PSOs) that comply with the specific PSO conditions within EU law, where necessary to protect services between other UK airports and London.’ [emphasis added]

The Aviation Policy Framework emphasises the importance of connectivity both within the UK and with developing countries. London based airports such as Heathrow will accommodate the increasing demand for long-haul flights to established markets such as the USA and Europe however, there could be opportunities to provide additional services for regional and European flights.
Despite the above, it is noted at paragraph 1.53 that although opportunities to provide additional services exist: ‘the demand for air travel is forecast to increase at a slower rate than we have seen over the last 40 years, reflecting the anticipation of market maturity... Whereas in the past we saw annual growth of 5% in the future it is likely to be between 1% and 3% over the next 15 years.’

[emphasis added]

The Airports Policy Framework has a section (chapter 5) detailing relevant planning policy (in paragraph 5.8) which reiterates the earlier reference made in Paragraph 41 of the NPPF stating the Local Planning Authorities should ‘identify and protect’ sites which could be critical in developing infrastructure to widen choice.

3.3 The Airports Commission

The Airports Commission was established in September 2012 with the remit of recommending how the UK can maintain its status as a global aviation hub and maintain excellent international connectivity for generations to come, as well as making best use of existing airport capacity in the shorter term.

The Airports Commission is an independent group with a total of six members with the following priorities:

- ‘take a UK-wide perspective considering the national, regional and local implications of any proposals;

- provide interested parties and members of the public with opportunities to submit evidence and proposals and to set out views relevant to our work;

- build a consensus in support of our approach and recommendations.’

The Commission is working to finalise a report by the end of 2013 looking at the UK’s status as an international centre for aviation. This will incorporate looking at immediate strategies to ameliorate the use of existing runway capacity within the course of the next five years.

By Summer 2015, the Airports Commission aims to have completed a report looking at the environmental, economic and social costs and benefits of a number of solutions with the aim of increasing airport capacity. This will involve consideration of operational, commercial and technical viability.

The terms of reference¹ for the Commission states that:

‘The Commission should report no later than the end of 2013 on:

- its assessment of the evidence on the nature, scale and timing of the steps needed to maintain the UK’s global hub status; and

- its recommendation(s) for immediate actions to improve the use of existing runway capacity in the next 5 years – consistent with credible long term options

The Commission should report no later than summer 2015 on:

¹ www.gov.uk/government/organisations/airports-commission
• its assessment of the options for meeting the UK’s international connectivity needs, including their economic, social and environmental impact;

• its recommendation(s) for the optimum approach to meeting any needs; and

• its recommendation(s) for ensuring that the need is met as expeditiously as practicable within the required timescale.’

Once published, the two reports (along with the Aviation Policy Framework) will supersede the Aviation White Paper – The Future of Air Transport.

To date, the Airports Commission has published a series of discussions papers, specified below:

• Aviation demand forecasting (1 February 2013)
• Aviation connectivity and the economy (8 March 2013)
• Aviation and climate change (5 April 2013)
• Airport operational models (16 May 2013)
• Aviation noise discussion paper (4 July 2013)
• Public evidence sessions transcripts: Airports Commission discussion papers (29 July 2013)
• Stakeholder responses to Airports Commission discussion papers (29 July 2013)

The discussion papers have informed the Airports Commission publishing two guidance notes.

**Summary of proposals for making best use of existing airport capacity in the short and medium term (7 August 2013)**

This summarises the proposals received by the Airports Commission from stakeholders for making best use of existing airport capacity in the short and medium term.

• Short term options are considered to be those which could be delivered without the provision of additional runways or terminals, within 5 years of the publication of the interim report in December 2013.

• Medium term options are considered to be those which do not require the provision of additional runways or terminals, but which may need more than 5 years to deliver.

This paper lists those organisations that submitted proposals. It is of pertinence to this study that Viable Plymouth Ltd is listed as a submitter of options for making best use of existing airport capacity. The Airports Commission is currently assessing the merits of the proposals submitted.

Based on the proposals submitted this paper breaks down the options into the following broad categories:
• Airport Operations options for changes to the operations of particular airports, or to the general principles of UK airport operation.

• Airspace Operations options for the more efficient management of the UK’s airspace beyond the bounds of individual airports.

• Slot/Scheduling options for changes to the governance and incentive mechanisms around the use of slots.

• Regulatory options for changes to the regulatory and legal frameworks that govern the UK’s aviation sector.

• Air Passenger Duty (APD) options for changes to the tax regime to promote different uses of the UK’s airport capacity.

• Air Services Agreement options for the promotion of bilateral and international agreements to encourage the development of new routes between the UK and overseas destinations.

• Surface Transport options for the provision of new or enhanced infrastructure to improve the surface access to particular airports and or for changes to the operation of the UK’s existing surface transport infrastructure so as to better support the aviation sector.

• Financial Incentivisation options for non-tax changes to the financial incentives in place around the use of the UK’s airport capacity.

• Night Flight and Enhanced Mitigation options for changes to the night flights regimes in place at various UK airports and to reduce the adverse impacts of aviation.

• Traffic Redistribution rules for mandating or incentivising changes to the usage of particular UK airports (this has some overlap with the two categories above).

Phase 2 information note: discussing the second phase of the Airports Commission’s work (7 August 2013)

This note states that if the Commission reaches a view in its interim report that a significant increase in aviation capacity is needed, the second phase of work will develop the list of credible long term options into detailed schemes, and subject them to a thorough appraisal process.

It is indicated that this appraisal process is likely to include looking not only at individual proposals in isolation, but also at how they might be combined.
4 Local Planning Policy

Plymouth’s Core Strategy (adopted in April 2007) is being refreshed to reflect the changes to the planning system through the Localism Act and the NPPF. The city’s new local plan will be known as the ‘Plymouth Plan’.

Throughout the period of transition to the Plymouth Plan, the Core Strategy alongside its supporting Area Action Plans (AAPs) and Development Plan Documents (DPDs) will retain their status as the city’s statutory Development Plan.

4.1 Plymouth Core Strategy

The Plymouth Core Strategy sets out the framework and policies upon which the City bases decisions on future development. The document is to be applicable up-to 2021. The Core Strategy restates the City Vision for Plymouth as:

“One of Europe’s finest, most vibrant waterfront cities, where an outstanding quality of life is enjoyed by everyone.”

The Core Strategy takes this forward, by outlining the spatial vision for the city:

By 2021 Plymouth will ‘become the economic hub of the far South-West’, fulfilling its role as the leading retail, entertainment, employment, health and learning centre for the far South West. Its global links will be extended. Its role as a major communication centre will be expanded, with improved connections to Europe and the rest of the UK. The city’s links with its hinterland will be developed, helping spread the benefits of economic investment. The quality of life in Plymouth will have been dramatically improved, making it the city of choice.

It is important to remind ourselves of the overall Vision in the context of the future of the airport site as international connectivity is fundamental to the success of the Vision.

In relation to the airport, paragraph 14.10 sets the context by stating that ‘the current Plymouth Airport layout is not adequate to accommodate the next generation of turbo prop aircraft’.

Under strategic objective 14 – Delivering Sustainable Transport, the Council aim to increase passenger numbers using Plymouth Airport to 580,000 per annum by 2021.

Policy CS27 – ‘Supporting Strategic Infrastructure Proposals’ plans to make:
‘improvements at Plymouth City Airport, enabling it to meet a fuller range of business and leisure needs, including:

- Extending the main runway by 48 metres to enable the next generation of turbo prop aircraft to use the airport.
- Decommissioning of the shorter runway.
- Increasing the size of the airport’s apron to allow more aircraft to park.
- Extending the passenger terminal buildings.'
• Relocating the maintenance hangar and engine testing area (which should be built to a high standard for noise attenuation).

• Releasing surplus land for development, to help finance infrastructure improvements.

Paragraph 14.23 cites the 2006 Study carried out by York Aviation which provided the evidence base for the policy. The airport is recognised in the Core Strategy as a highly important part of the city’s strategic transport infrastructure and it is thought that expansion of the airport is necessary if it is to be a viable proposition in the long term.

Paragraph 14.23 continues by emphasising the complications of the airport particularly regarding a longer runway extension which would not be possible without widening the entire length of the runway. This was considered to be unacceptable due to the consequential impacts on residential areas within close proximity. Due to the above, a 48 metres extension to the runway was proposed to deliver increased connectivity whilst also being the most financially viable – albeit still requiring significant investment.

Area Vision 9 – Derriford and Seaton, sets out the key development objectives for the area:

‘To create a thriving, sustainable, mixed-use new urban centre at the heart of the north of Plymouth, which is well connected to surrounding communities and to the city’s High Quality Public Transport network.’

The Council’s objectives to deliver this vision (amongst others) are:

‘To play a major supporting role in the sub-region’s long term economic and social well-being through the provision of strategically important health, economic, further education and transport infrastructure (including an improved Plymouth airport).’

Paragraph 5.72 recognises that the area has ‘large, isolated, single use areas with significant space wasted.’ The paragraph goes on to state that ‘the long distance views to Dartmoor and the coast have not been utilised’. The site and its potential development have a number of environmental constraints applicable to it; this relates not only to visual impact, but pollution, noise, and disturbance to wildlife and local habitats.

Chapter 6 defines the City’s strategy to building a prosperous economy. Paragraph 6.9 states that ‘the strategy also includes a major spatial component to build upon the bi-polar nature of Plymouth’s economy - with a strong City Centre and a strategic employment location in the Derriford area, as well as supporting key contributions’.

4.2 Local Transport Plan 2011-2026

The Local Transport Plan (LTP) was written before the closure of the airport. It contains few references to aviation. In respect of ‘Air Travel’ and ‘Air Transport’ the LTP cites the importance of good connectivity between the city and air services as vital for business and tourism.
The LTP acknowledges the role of Plymouth City Airport as important to the business community of the sub region, and as such this document supports the provision of air services by outlining the following policy measures:

- Safeguard land to enable future airport expansion, through the planning process.
- Work with the airport operator and public transport providers to improve surface access to the airport by sustainable modes.
- To enable connections to main business districts including Derriford, Langage and the city centre.

**4.3 Economic Strategy**

Whilst the Local Development Framework (LDF) and Local Transport Plan (LTP) provide the strategic framework for the spatial development of the city, the economic strategy identifies the key economic development priorities necessary to deliver a step change in economic performance (to 2026).

The Plymouth Local Economic Strategy seeks to realise the following aspirations:

- A highly competitive City, well recognised and branded on the global economic stage;
- A City with a balanced, diversified and knowledge intensive business base;
- A City Region with well-connected and inclusive communities;
- A City with an adaptable and skilled workforce which is constantly learning;
- A City where strong stakeholders and agencies work effectively together to deliver shared priorities;
- A City where a genuine commitment to sustainable development reinforces a set of unique environmental assets.

The “city of ideas” is a central concept within the Economic Strategy. The Strategy states that by 2020, Plymouth will be distinguished by a set of key physical and economic features. One of the key features cited is - transport links (especially airport with high connectivity) both to and within the city.

**4.4 Derriford & Seaton Area Action Plan**

Plymouth City Council submitted the Derriford and Seaton Area Action Plan to the Secretary of State on 21 December 2012.

Within the Area Action Plan (AAP), the Council stated they would ascertain the future of the airport site within the Plymouth Plan rather than the AAP; therefore there is little explicit reference to the airport site.

‘Plymouth City Airport is considered to raise issues of such strategic importance to the city and its sub-region and the appropriate policy vehicle for reviewing its
future is considered to be the Core Strategy Review (Plymouth Plan) which is now underway. ’(Paragraph 1.14)

The AAP has now been through examination (March – April 2013) and in May 2013 the Inspector wrote to Plymouth City Council to outline preliminary concerns2 regarding the Submission Draft, namely:

- deliverability of transport infrastructure and the required ‘modal shift’;
- the justification and deliverability of key proposals;
- the approach to risk and contingency;
- the relationship of the AAP to the airport site and the timeframe of the plan.

With regards to site justification and delivery, the Inspector’s report highlights that: 
*Given the absence of information in relation to the potential use of the airport site and its implications for transportation and land to the south, in conjunction with the evolving evidence being produced to support the economic strategy of the city as part of the Plymouth Plan, it is difficult to conclude that Proposal DS16 (District Centre), or indeed any specific alternative, is based on sufficiently up to date information so as to be robust.’

The Inspector recognises that the Council is going to use the Core Strategy as the mechanism for dealing with the strategic implications of the airport; the Inspector deems this approach reasonable. Despite this, the Inspector goes on to state that: 
*the submitted AAP subsequently does not substantively address the proximity and potential future of the airport site.’

In the concluding comments, the Inspector notes that: *it is not possible to conclude that the submitted content of the AAP is necessarily the most appropriate without a consideration of the reasonable alternatives being informed by a greater degree of clarity upon the future of the airport site.’

In response to this, the Council has issued two formal responses.

The initial response from the Council confirms that they will not withdraw the plan. The response seeks clarification on a number of issues which would provide constructive feedback on the AAP, namely:

- Those parts of the plan and its specific evidence base documents are considered to be robust, commendable and good.
- What parts of the plan/evidence base were found to be deficient, to what degree and in what respect.
- Clarification on the Inspector’s comment that the Core Strategy is ‘out of date in some material respects’. The Council have requested clarification on the weight that can be applied to the Core Strategy in the event that a planning application comes forward before the Plymouth Plan is adopted.

The second correspondence from the Council to the Inspector deals with the exclusion of airport land (point 8); whereby the Council outline concern at the

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2 Derriford and Seaton Area Action Plan – Preliminary Main Concerns of the Planning Inspector (May 2013)
level of weight given by the Inspector to the proximity and future of the airport site.

The Council consider it ‘unreasonable’ that the uncertainty relating to the future of the airport site should have to be resolved before a plan can be advanced. The Council acknowledge that ‘it could take several years to fully resolve the issue for the future of this site and the Council does not consider that this is a site which is currently available for development...’

The Inspector has not formally responded to either piece of correspondence nor issued the report on the AAP.

Note: Situation to be updated at the time of Final Issue of Airport Study at the end of 2013.

4.5 Local Enterprise Partnership

Plymouth is the primary economic development hub of the far west of the ‘Heart of the South West’ Local Enterprise Partnership (LEP) area. The Heart of the South West covers the area of the upper tier local authorities of Somerset, Devon, Plymouth and Torbay. It has a population of 1,700,000 and an economy with a gross turnover of £28bn per annum.

While the Heart of the South West enjoys an outstanding natural environment, its peninsular location renders it somewhat peripheral from London and the South East – as a consequence its productivity as measured in GVA per head is lower than the UK average, at £17,000 per head compared with a figure for England of £21,300 per head. The area is home to 2 operational regional airports at Exeter and on its northern boundary at Bristol.

The LEP is a strategically focused organisation, which draws extensively on the resources, energy and commitment of its partners. Its primary organisational objective is to lead and influence outcomes to improve economic growth and job creation within Devon and Somerset. It is not a delivery body, but works with those who are and align funding to secure added value.

The role of the LEP is to:

- **Champion Priorities**: Identify the important challenges and opportunities facing our economy, set out priorities for economic growth and prosperity and promote these priorities to businesses, policy makers and investors.

- **Secure Investment**: Influence investors to support its objectives and help advance priority initiatives to achieve growth.

- **Lead and Co-ordinate**: Bring partners together to align their activities, policies and investments with our vision and objectives. This will allow us to draw on our existing strengths and distinctiveness and give critical mass.

- **Share Insight**: Ensure intelligence from and perspectives of our partners are embedded in policy and investment decision-making.
HOSW Business Plan

Enhanced communications are of great importance to business in the HOSW area and this is reflected in the objectives that underpin the LEP’s Business Plan. The Business Plan ‘Enabling Growth and Prosperity in the South West’ developed by the LEP board, provides a framework for the organisations activities between 2012-2015.

The LEP is currently focussing its efforts on four strategic priorities:

- **Drive Productivity and Enterprise**: By stimulating greater innovation and creating an economic environment, it will support the competitiveness of businesses and social enterprises. This will enable them to make better use of their knowledge assets in order to drive forward an enterprise culture and exploitation of new communication technologies.

- **Attract New Business and Investment**: By supporting businesses to compete both within the South West and outside in the wider global economy, the LEP will help businesses exploit opportunities to extend their customer and supply base.

- **Maximise Employment Opportunities**: By ensuring that people living in HotSW areas acquire, maintain and enhance the skills and aspirations needed to secure fulfilling, long-term employment. The LEP will work to stimulate employment growth and encourage the retention of relevant skills within an ageing workforce, while taking advantage of graduate opportunities.

- **Promote Infrastructure to Connect with Markets**: By making the case for critical infrastructure which will allow South West businesses to access opportunities and compete effectively.

Within these strategic priorities several opportunities/initiatives are identified that indicate the LEP’s recognition of the importance that aviation needs to play in the future of the regions communications:

**Priority: Attracting new business and investment**

*Opportunity 4: Capitalise upon being a Gateway Location*: Ensuring that we capitalise upon our direct and indirect gateways into international markets.

*Initiative*: Support the expansion of transport hubs and marine assets to create a wide range of new commercial opportunities such as access to international ports and recognition of marine energy assets. We will also build our IT capacity to access world markets and enhance our international tourism opportunities.

**Priority Promote infrastructure to Connect with Markets**

*Opportunity 1: Address existing and future constraints on business growth*: Physical connectivity is a crucial priority for the HotSW. This requires a long term approach and commitment to working with Government to secure improved *transport* connections.
Initiative: Emphasise the need for ongoing public and private investment to improve connections into and within our area while giving specific focus to locations where current connectivity is impacting on productivity and competitiveness.

HOSW LEP Airports Commission Submission May 2013

Paragraph 5.22 of the Aviation Policy Framework outlines the scope for LEPs maximising the potential of airports: ‘At other airports outside the South East, scope exists for LEPs to develop local strategies to maximise the catalytic effects of airports to attract business and support growth. LEPs, in partnership with local authorities, have a range of tools at their disposal to help support businesses in the vicinity of airports.

In May 2013 the LEP made submissions to the Airports Commission consultation on making the best of existing airport capacity in the short to medium term. In the absence of any specific HOSW airports policy and supporting investment priorities, the submission provides an indication of the LEP’s stance on its regional airports generally:

- Connectivity by air is seen as vital, to enable businesses to interact with their markets both nationally and internationally, and also to enhance the accessibility of the South West for inbound tourism and leisure travel.
- Plymouth airport’s closure during the recession were undoubtedly hampered by its physical constraints, which limited the types of aircraft that could use the airport, its closure at this time is a clear indicator of the difficulties faced by regional airports.
- The LEP believe that it is fundamentally important for any future national airports strategy to capitalise on the potential offered by regional airports, and at the same time to reinforce their sustainability as access points for air travel.
- The future strategy should embrace the runway and terminal capacity offered by regional airports, to relieve the pressure on the crowded airports and air space in London and the South East.
- A related factor having an influence on volumes of air travel, particularly discretionary travel, is the impact of Air Passenger Duty. This is levied at a higher rate than in other countries, and acts disproportionately on domestic flights, where it is payable on both legs of the journey. The drawbacks of having higher APD than our competitors include the fact that it increases the cost of doing business in Britain, and particularly that it adds to the cost of doing business in the regions. It is one of the factors which directly act against the Heart of the South West LEP’s objective of improving productivity in Devon and Somerset.
- A further threat is posed by the prospect of devolving decisions about the scale of APD in Wales and Scotland to the devolved administrations. Reference is made to HM Revenue and Customs research which shows that a differential reduction in APD by the Welsh Assembly Government, for example, could further challenge the situation of South West airports.
such as Exeter and Bristol by attracting patronage away to Cardiff. However, the same paper models the effect of differential rates of APD between Heathrow and Gatwick on the one hand and the remaining British airports on the other. By shifting demand away from overcrowded airports to those with spare capacity, the case is made that APD could become part of the regional airport solution.

- The importance of good surface access is reiterated. Congestion delays, or uncertainty about travel times, can impose extra costs to businesses through additional time taken and reduced performance. Hence improvements to surface access in the medium term could contribute to more effective use of our airport capacity. Reference is made to the particular benefits of rail access given it gives more journey time certainty and is less susceptible to incident delays than the motorway network. The importance of the proposed western rail access to Heathrow to the HOSW area is emphasised.

- The LEP is of the view that there is sufficient terminal and runway capacity in the region to cater for the growth in air travel for the foreseeable future. The key consideration they raise is how this capacity is going to be utilised to best effect, and specifically how regional airports might function in combination with international hub airports, to complement improved surface access to those hub airports.

- The LEP considers there is merit in a strategy which would incentivise the use of airports other than Heathrow and Gatwick, by retaining central Treasury control of APD but making revenue-neutral adjustments, with higher APD charges for Heathrow and Gatwick and lower rates at other UK airports. This would bolster the position of regional airports, encourage the retention and enhancement of international and domestic routes serving them, and support the development of secondary hub airports such as Manchester or Birmingham to complement Heathrow.

Note: Situation to be updated at the time of Final Issue of Airport Study at the end of 2013.
5 Relevant Background Aviation Studies

5.1 York Aviation Study

The York Aviation Study was published in 2006 with the principal aim of providing:

“Robust and comprehensive evidence base in relation to the case for an airport serving Plymouth for the foreseeable future, having regard to the wider regional context for air service provision.” (Paragraph 1)

The report assessed the policy context in addition to the economic context within which the City sits; with an assessment of the anticipated market (at that time) for the airport.

An analysis of the market appetite for Plymouth City Airport with regards to nearby competition from Exeter and Newquay was undertaken with the following findings:

“Plymouth City Airport could be handling around 1 million passengers per annum by 2030 based on growth of the low cost regional airline model.” (Paragraph 12) [emphasis added]

It is important to note that the above projections were based on the assumption that a number of airlines would serve the airport and the development of a longer runway.

The report identified the length of the runway, which is insufficient for turbo-prop aircraft and regional jets, as a key problem for Plymouth Airport. This is further complicated by the inappropriate location of the hangar and engine test bay: ‘relocation of these is fundamental to releasing a significant area of land at the southern end of runway 06/24 for disposal and alternative use.’ (Paragraph 21).

During the production of the study, three scenarios were identified:

- ‘Do nothing – no Runway End Safety Area (RESA) works;
- Short runway extension comprising RESA works and use of RESAs for take-off;
- Full or long runway extension comprising RESA works and the maximum runway extension.’ (Paragraph 17).

The risks associated with each of the above options were considered to be:

- *no development* runs the risk of the CAA imposing further restrictions on the operation of the Airport;
- provision of *RESAs only* would avoid further operational restrictions being imposed but would not ensure the long term growth of the Airport through attracting new airlines and services and may not generate sufficient profits to allow finance to be raised;
- development of the *short runway extension option* would secure scope for growth but the remaining restriction on arrivals would still limit long term growth potential to turbo-prop aircraft only;
• development of the long runway extension option would offer the greatest potential for the long term operational viability of the Airport but at the highest cost.’ Paragraph 22. [emphasis as existing in text]

Based on the above scenarios and risk assessment, the short runway option was the favoured approach of Sutton Harbour Holdings, which would leave a funding gap of £8.4 million. (Paragraph 23)

In terms of economic impact, the following key drivers were identified:

• ‘attracting of new high tech and creative industries;
• attracting new short break/high spending tourist visits;
• improving productivity of local companies through reducing journey times.’ (Paragraph 28)

Chapter 3 discusses the planning policy context relevant to Plymouth Airport. The section reiterate references to the ‘Future of Air Transport – White Paper’, that decision making on this topic should be made at local level. There are a number of references to the regional tier of plan making which has been abolished since the publication of this report.

Chapter 7 sets out the economic impact and the importance of the aviation industry. The key points are as follows:

• ‘In 2005, operations at Plymouth City Airport directly supported 222 full time equivalent jobs, including those employed at the Air Southwest base but excluding non-aviation related companies housed at the Airport.
• 64% of employees live within the City of Plymouth.
• Taking indirect and induced effects into account, the gross value added to the Devon and Cornwall economy of operations at Plymouth City Airport is £12.2 million per annum currently, supporting 320 jobs.
• By 2030, the Airport would support 710 to 960 jobs directly dependent on the growth scenario and length of runway available. Total employment sustained by the Airport in the sub-region would rise to between 1,090 jobs to 1,480 jobs dependent upon scenario.
• The GVA added by the Airport would rise to between £92.8 and £125.8 million per annum dependent upon the runway length and growth scenario.
• Given the step change required in the performance of the Plymouth economy, the availability of air service connections will become more important to the sub-regional economy in future, particularly to support target growth sectors such as creative and high tech industries and the medical sector.
• An analysis of air service connectivity would suggest that Plymouth is falling behind its comparators in terms of air access at present and this will damage the City’s competitiveness.
In the longer term, the airport needs to be able to attract a wider range of air services, including to European cities to materially improve its connectivity, requiring a longer length runway.

At present the presence of the Airport results in journey time savings to UK residents valued at around £3 million per annum. These journey time saving benefits could rise to around £40 million per annum if the airport grows. Much of the benefit is derived from the service to London Gatwick, saving long surface access journeys.’

5.2 Plymouth City Airport Master Plan

Much of the technical information contained within this Master Plan (2008) reiterates guidance found in other reports namely as the York Aviation Study and the Air Transport White Paper. The Plymouth City Airport Master Plan was produced following guidelines published in the Air Transport White Paper (Paragraph 12.7) stating that:

‘Airport operators are recommended to maintain a master plan document detailing development proposals. An airport master plan does not have development plan status, but the level of detail contained within it is essential to inform the content of the Local Development Framework.’

Paragraph 1.2 outlines the purpose of Airport Master Plans stating that their primary objectives are as follows:

- ‘To provide a mechanism for airport operators to explain how they intend to take forward development of their airport in the light of the Air Transport White Paper and so inform regional and local planning frameworks; and

- To facilitate engagement and interaction with a variety of key stakeholders, providing interested parties with useful information relating to the future growth and operation of the airport.’

The document was to be reviewed and updated every five years to comply with government guidance.

The Master Plan has a section dedicated to socio-economic impacts which are detailed below:

- ‘Accelerating economic growth and restructuring, including the rate at which the economies of Plymouth and the wider South West migrate to higher value added activity. Expanding output and improving the rate at which people and businesses in Plymouth are able to generate wealth through improved productivity and competitiveness is a primary goal.

- Promoting the development of Derriford as a second, distinctive and complementary economic centre within Plymouth. The Derriford area, with its concentration of key knowledge economy assets, will need to play an increasingly important part in the long-term economic development of Plymouth.

- Bringing forward new residential development within the Plymouth New Growth Point Area, particularly on previously developed land.'
• Supporting the longer-term development of Plymouth City Airport, bringing a range of direct, indirect, induced and catalytic economic impacts to Plymouth and the South West. The growth of the Airport is strongly supported in a range of local economic development and planning policy documents. Improving the national and international connectivity of key economic centres in the South West is a core aim of economic development policy.’ (Page. 32).

With regards to the Airport Facility, the Masterplan proposed a four phase development:

• Phase 1 Airport Development: Engine Test Bay; Fuel Farm; Noise Bund; RFFS facility.
• Phase 2 Airport Development: Hangar Bay for Fixed Wing Aircraft; Link Road; Fuel Farm; Navigation Aids.
• Phase 3 Airport Development: Hangar Bay for Fixed Wing Aircraft; Fixed Wing Aircraft Parking; General Aviation; Bypass Taxiway; Car Parking, Airport Terminal Forecourt and Public Transport Hub; Commercial B1 units.
• Phase 4 Airport Development: Airport Terminal Building; Runway Extension.

The initial phases of the masterplan were intended to re-organise and rationalise the airport layout; with investment in new and improved airport operational facilities. The later phases of the Airport Development, specifically the extension of the main runway in a south easterly direction and an extension to the airport terminal, were proposed in the longer term. No timescales were set out for the implementation of these improvements.

5.3 Economic Study into Air Services for Plymouth

Berkeley Hanover Consulting was commissioned by Plymouth City Council and the Plymouth Chamber of Commerce and Industry (April 2011) to produce a report on the current and potential future role of Plymouth City Airport – within the context of the economy of Plymouth.

The study did not review the performance of Sutton Harbour Holdings’ past and current management of either Plymouth City Airport or Air Southwest. (Paragraph 1.2)

This report sought to:

• ‘Review the context and history of Plymouth City Airport (PCA), assess its operational constraints and estimate the market for its services.
• Establish the importance of PCA to the local economy including inward investment and economic implications for the future.
• Establish the aviation options available for the continuation of airport activities on the current site as well as possible cessation of operations and assess the financial implications including risks of each option to Plymouth City Council (PCC).’
The report outlines that whilst, the airport lost its connection to Heathrow in 1997, when this was followed by Gatwick in 2010; it ‘signalled the beginning of a decline in the strategic importance of the airport for the Plymouth economy.’ (Paragraph 3)

Berkeley Hanover Consulting note that the 2006 study by York Aviation projected significant airport related employment generation; this projection was based upon an expected growth in passenger demand which did not occur. (Paragraph 2.4)

The report states that in the years between 1995 and 2011, PCA failed to keep pace with projected regional growth. Paragraph 2.7 states that ‘in 2011, it is likely that PCA will handle some 50,000 passengers. If PCA had kept pace with regional demand, the airport would have handled some 350,000 passengers in 2010.’

The study highlighted that: ‘there are no signs that the inability of PCA in the last 10 years to meet local demand for air travel has resulted in a diminution of travel to/from Plymouth and/or has had a knock-on impact to the local economy.’ (Paragraph 2.18)

Paragraph 3.4 comments on the constraints applicable to the airport: ‘The full length of the surfaced asphalt runway at Plymouth is 1,161 metres… As a general rule, an airport needs to have a runway in excess of 1,800 metres if it is to offer full range capability to aircraft such as the Boeing 737 or the Airbus A320 families.’

Paragraph 3.5 acknowledges the studies undertaken (as aforementioned) to ascertain the potential for the runway to be extended. This report notes that such extensions ‘have proved prohibitively expensive. Extending the runway would involve extending the boundaries of the airport and buying up local commercial and residential property.’

Paragraph 3.12 raises concerns over potential changes that may be required by the Civil Aviation Authority (CAA); if PCA gets a new operator, the CAA may terminate current derogations and impose its new requirement for the lengthening of the Runway End Safety Area from 90 metres to 240 metres. This would cause significant problems for Plymouth as they would only be able to accommodate the 19-seat Otter as operated to and from the Scilly Isles.

Paragraph 4.4 goes on to state that only the Twin Otter and ATR92 are still in production and that there are ‘no plans to develop (small) planes in the future that would be capable of landing at PCA given its current runway restrictions.’

In terms of financial details, Paragraph 3.28 notes that the airport had been operating at a loss between 2008 -10 with Air Southwest, also incurred significant losses during the same period. Throughout the course of research for the Berkeley Hannover report, it was noted that a number of third parties had expressed an interest in managing the airport. However, the report cites the complications due to leasehold ownership which has direct implications on whether the Council should keep the Derriford site operating as an airport.

Chapter 4 makes reference to potential development at RAF Northolt which could aid connectivity between Plymouth and the South East however it is unknown as to whether the Government would give the green light to development.
Chapter 5 addresses the question of how important Plymouth City Airport is to the local economy. Paragraph 5.33 states that ‘Of the 23 businesses asked about the importance of PCA to their company operations 18 firms (nearly 80%) responded that it currently is of little or no importance.’ The report goes further to state in paragraph 5.34 that ‘there was clearly a perception of the importance of PCA being more important to the City in general than to members’ own companies in particular’.

Chapter 6 focuses on aspects of connectivity, concluding that: ‘Over half the businesses interviewed articulated a need for good connectivity with London, with the preference being for rail connectivity and improved train services.’ (Paragraph 6.41)

Paragraph 6.45 goes on to state that: ‘Given the range of alternatives for London, European, international and UK regional connectivity, the loss of the already severely diminished PCA air services is not expected to reduce Plymouth businesses’ overall connectivity to any significant extent.’

Paragraph 7.7 notes that: ‘the site has significant development value if planning permission is granted for non-aviation use and has the potential to enhance the mid to long term growth rates of economic development in the corridor.’

The report outlines that ‘the Derriford site has significant future commercial potential being located at a strategic location and the opportunity cost of neutralising the site for low-scale aviation activities will clearly increase over time.’ (Paragraph 7.8)

Chapter 8 considers the various options available to PCA; as detailed below:

- Maintaining the airport as now, at Rescue and Fire Fighting Services (RFFS) 5, with the capability to handle 50-seat Dash 8-300 aircraft;
- Reducing the RFFS Category from 5 to 3, enabling it to accommodate scheduled service aircraft of up to 19 seats;
- Becoming an unlicensed airfield – not licensed to handle scheduled service aircraft;
- Mothballing the airport for some years until a final decision can be made; and
- Closure of the airport.

The report concludes with the following key points:

- If there is a business/political consensus to retain airport operations, it could be possible to operate a very limited scheduled passenger airport or a general aviation airfield that could be broadly cost covering, though the likelihood of commercial profitability is low to non-existent.
- The willingness of prospective new airport operators to assume total financial risk at any level of airport operations needs to be robustly tested and validated.
- In the absence of any meaningful positive economic contribution to the City of Plymouth, we are unable to identify an economic rationale for
PCC to underwrite the commercial risks involved in maintaining any scale of airport operations at PCA.
6 Summary

National Policy

The findings of the Interim Report (end of 2013) and the Final Report (2015) of the Airports Commission will be critical to the preparation of the Plymouth Plan as these documents will clearly set out the future role of regional airports, international hubs and potentially put in place mechanisms to support regional airports.

Neither the NPPF nor the Aviation Policy Framework currently provide this.

The absence of any formal recommendations from the Airports Commission at a national level makes developing a local policy framework for the future of Plymouth Airport challenging.

The findings of the Airports Commission could impact on the viability of potential future commercial options for Plymouth Airport – namely any changes that may be proposed regarding: slot/scheduling; air passenger duty; financial incentivisation; and traffic redistribution.

A key trend driving national policy is that the demand for air travel is likely to be at a slower pace than previously thought and only at an annual growth rate of between 1 - 3% over the next 15 years. Should Plymouth Airport be re-opened this highlights the importance of having a robust business case in place, which would need to consider maximising non-general aviation uses that its location may afford e.g. capitalising on Ministry of Defence or healthcare opportunities.

A key theme within the NPPF and the Aviation Policy Framework is the important role that aviation infrastructure can play in contributing to economic growth with economic benefits significant at both the national and regional level. Therefore both documents cite the need to identify and protect sites and routes which could be critical in developing infrastructure to widen transport choice.

So whilst the safeguarding of the Plymouth Airport site is supported by national policy it is clear that this has to be robustly evidenced. In this case it would require a demand to be identified with a robust business case to demonstrate the viability of re-opening the airport site.

Local Policy

The Core Strategy is based on an ambitious vision for Plymouth to become ‘one of Europe’s finest, most vibrant waterfront cities’. The Core Strategy emphasises that by 2021 it will ‘become the economic hub of the far South-West’; ‘Its global links will be extended. Its role as a major communication centre will be expanded, with improved connections to Europe and the rest of the UK.’

As such a key issue for the Plymouth Plan to consider is the degree of importance to be attached to the airport as an asset to the City to achieve this vision.

As aforementioned the national policy drivers promote the need to identify and protect sites, if this is the case, the evidence base and associated strategies supporting the Plymouth Plan must be progressed on the basis of the airport being available for operational use in the future.
The Heart of the South West LEP is somewhat behind other LEP’s with respect to the progression of the strategic economic plan for their area and the role that regional airports play within that plan.

By way of example, the South East LEP has carried out a significant research study (May 2012) to identify how the airports of the Greater South East can be used more effectively and efficiently and, where possible, grown to accommodate the anticipated increasing demands of air travel.

The report found that expanding utilisation at other airports serving the South East (including Stansted, Southend and Manston) could address short term business needs; with significant potential is available by increasing the Air Transport Movement Cap at Heathrow, Gatwick and City airports.

The outputs of this study have:

- Provided the LEP with an independent view of demand and capacity constraints;
- Determined the impact to business and GVA if airport capacity is constrained;
- Assisted the LEP to contribute to the consultations on aviation strategy;
- Outlined solutions to stretching existing capacity in the LEP area.

It is considered that the HOSW should progress a similar piece of strategic thinking for Plymouth Airport and Exeter Airport; in association with the West of England LEP (Bristol Airport) and the Cornwall and Isles of Scilly LEP (Newquay Airport).

**Background Aviation Studies**

There are a number of points to note around the limitations of the previous background studies that have been carried out:

- **Applicability**: the last independent study to be carried out on the Airport was the report compiled by York Aviation in 2006, to inform the Plymouth Core Strategy. This report is of its time as it was carried out prior to the recession and the findings are based on overly optimistic regional growth forecasts.

- **Scope**: the Berkerley Hannover Consulting report was carried out during the last year of operation of the airport prior to its closure in December 2011. In parts, the report places considerable weight on its survey of local businesses, however, only 23 were surveyed and this is could be argued as not proportionate nor adequate sample upon which to draw meaningful findings.

A recurring theme in both background documents is the inadequacy regarding runway length stating that the current length of 1,161m would need to be increased to offer full range capability; whilst acknowledging that such an extension would require significant investment.

It is important to note that moving forward, any case for re-opening the airport would need to be based upon more up to date growth assumptions; forecasts of demand and macro-economic considerations.
Points for Consideration

A review of both the adopted and emerging policy context raises a number of points for consideration and discussion for the airport site, namely:

- The misalignment of the timing of the Airports Commission findings and the timescales for the Plymouth Plan (and associated evidence base). This leaves uncertainty regarding the assumptions to be made regarding whether provision for an operational airport (with runway extension) is to be allowed for as a key assumption underpinning the progression of other evidence base refresh exercises documents such as the Employment Land Review; Economic Strategy; and Transport Strategy.

- PCC should lobby the HOSW LEP to form a clear view on aviation as part of its strategic economic strategy and the investment priorities in the South West in association with West of England LEP and Cornwall and Isles of Scilly LEP.

- Provision of clarity to the PCC Leader on the role that a re-opened airport at Plymouth would have for the city; in the context of its contribution to the vision for the city and the importance to be attached to it.
Appendix B

Infrastructure Review
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 229666-00
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Executive Summary

Ove Arup and Partners Limited (‘Arup’) has been commissioned by Plymouth City Council (‘the Council’) to prepare a study to inform the Plymouth Plan, having specific regard to the long term future of Plymouth Airport (‘the airport’).

This report forms one component of a series of technical reports and

- Assesses the condition and capability of the current facilities.
- Assess the aircraft types that take off and land at the airport based on the runway length.
- Provide an overview of the constraints and opportunities at the airport site.
- Outline scenarios for the potential future operation of the airport site based on the constraints and the opportunities to enhance capacity identified.
- Outline the infrastructure improvements required (and the associated cost) to bring the airport to current Civil Aviation Authority (CAA) standards.

Existing Infrastructure Review

The condition and capability of the current terminal building facilities is constrained to handling one aircraft at any one time due to the operational restrictions.

The existing airfield infrastructure is largely intact and suitable for the reintroduction of passenger services, although if as part of the re-licensing the Civil Aviation Authority determined that Runway End Safety Areas are required, the operational length of the runway would be reduced. However, reactive maintenance is required before any operations could commence.

The air traffic control tower appeared to be in a satisfactory condition. However, the equipment will is likely to require modernisation and upgrade.

Rescue and Fire Fighting Services, refuelling and power utilities will need to be re-commissioned prior to the reintroduction of operations.

There may be a need for additional car parking facilities and public transport interchange.

Runway Length

Three scenarios have been explored for an assessment of runway length to understand which aircraft, and what payload restrictions there might be, could operate at Plymouth.

- Runway Scenario 1 provides 90m Runway End Safety Areas and a Take off Distance Available of 1,167m.
- Scenario 2 provides a 75m width each side of a runway centreline and a Take off Distance Available of 1,319m.
- Scenario 3 provides the 75m width each side of the runway centreline and a Take off Distance Available of 1,602m.

**Constraints and Opportunities**

The A386 and B3432 roads on the western and northern edges of the airport, land to the south west which has been sold for development, the location of the current fuel farm and an existing industrial development to the south east of the runway all provide a level of constraint to the expansion and development of the airport.

However, there are is space available for a number of opportunities for expansion and enhancement of the airport including taxiway bypass/runway holding area, terminal expansion and apron expansion. Lengthening the runway to the south east is also possible subject to acquisition of the industrial land.

**Development Options**

Three development options have been explored at the airport site for costing purposes:

- Option 1: Do-Minimum Reinstatement of services to Civil Aviation Authority standards
- Option 2: Short runway extension to achieve a maximum length of 1,319m.
- Option 3: Longer runway extension to a length of 1,602m.

The capital expenditure costs for the options are as follows:

- Option 1: £9.9m (terminal refurbishment, runway resurfacing, procurement of passenger and baggage security equipment and the refurbishment of the office block).
- Option 2: £29.6m (earthworks, terminal refurbishment, runway extension/resurfacing and provision of additional apron).
- Option 3: £69.6m (earthworks, terminal refurbishment, runway extension/resurfacing and provision of additional apron).
1 Introduction

Ove Arup and Partners Limited (‘Arup’) has been commissioned by Plymouth City Council (‘the Council’) to prepare a study to inform the Plymouth Plan, having specific regard to the long term future of Plymouth Airport (‘the airport’).

A key element of the study is to ascertain whether there is a sound economic case for reintroducing air services to Plymouth based at the existing site.

This report forms one component of a series of technical reports:

- Policy Review
- Infrastructure Assessment
- Demand Forecast

The purpose of this report is to:

- Assess the condition and capability of the current facilities at the airport site.
- Assess the aircraft types that take off and land at the airport based on the runway length.
- Provide an overview of the constraints and opportunities at the airport site.
- Outline scenarios for the potential future operation of the airport site based on the constraints and the opportunities to enhance capacity identified.
- Outline the infrastructure improvements required (and the associated cost) to bring the airport to current Civil Aviation Authority (CAA) standards.
2 Methodology

Prior to going on site Arup undertook a desktop study reviewing a number of previous documents and reports regarding the condition of the airport infrastructure.

A comprehensive site visit to the airport was then undertaken with Sutton Harbour Holdings staff to examine the condition of key airport facilities and the runway.

2.1 Desktop Review

There are three relevant background studies which have been carried out on the airport site:

Plymouth City Airport Study, York Aviation (2006)

The report identified the length of the runway, which is insufficient for turbo-prop aircraft and regional jets, as a key problem for Plymouth Airport. This is further complicated by the inappropriate location of the hangar and engine test bay: ‘relocation of these is fundamental to releasing a significant area of land at the southern end of runway 06/24 for disposal and alternative use.’ (Paragraph 21).

During the production of the study, three scenarios were identified:

- ‘Do nothing – no Runway End Safety Area (RESA) works;
- Short runway extension comprising RESA works and use of RESAs for take-off;
- Full or long runway extension comprising RESA works and the maximum runway extension.’ (Paragraph 17).

The risks associated with each of the above options were considered to be:

- ‘no development runs the risk of the CAA imposing further restrictions on the operation of the Airport;
- provision of RESAs only would avoid further operational restrictions being imposed but would not ensure the long term growth of the Airport through attracting new airlines and services and may not generate sufficient profits to allow finance to be raised;
- development of the short runway extension option would secure scope for growth but the remaining restriction on arrivals would still limit long term growth potential to turbo-prop aircraft only;
- development of the long runway extension option would offer the greatest potential for the long term operational viability of the Airport but at the highest cost.’ Paragraph 22.

Based on the above scenarios and risk assessment, the short runway option was the favoured approach of Sutton Harbour Holdings, which would leave a funding gap of £8.4 million. (Paragraph 23)
Plymouth City Airport Master Plan (2008)

Much of the technical information contained within this Master Plan reiterates guidance found in other reports namely the York Aviation Study and the Air Transport White Paper.

With regards to the Airport Facility, the Masterplan proposed a four phase development:

- **Phase 1 Airport Development**: Engine Test Bay; Fuel Farm; Noise Bund; RFFS facility.
- **Phase 2 Airport Development**: Hangar Bay for Fixed Wing Aircraft; Link Road; Fuel Farm; Navigation Aids.
- **Phase 3 Airport Development**: Hangar Bay for Fixed Wing Aircraft; Fixed Wing Aircraft Parking; General Aviation; Bypass Taxiway; Car Parking, Airport Terminal Forecourt and Public Transport Hub; Commercial B1 units.
- **Phase 4 Airport Development**: Airport Terminal Building; Runway Extension.

The initial phases of the masterplan were intended to re-organise and rationalise the airport layout; with investment in new and improved airport operational facilities. The later phases of the Airport Development, specifically the extension of the main runway in a south easterly direction and an extension to the airport terminal, were proposed in the longer term. No timescales were set out for the implementation of these improvements.

Economic Study into Air Services for Plymouth, Berkeley Hanover (2011)

Berkeley Hanover Consulting was commissioned by Plymouth City Council and the Plymouth Chamber of Commerce and Industry in April 2011 to produce a report on the current and potential future role of Plymouth City Airport – within the context of the economy of Plymouth.

The study did not review the performance of Sutton Harbour Holdings’ past and current management of either Plymouth City Airport or Air Southwest. (Paragraph 1.2).

Berkeley Hanover Consulting note that the 2006 study by York Aviation projected significant airport related employment generation; this projection was based upon an expected dramatic growth in passenger demand which did not occur. (Paragraph 2.4).

The report states that in the years between 1995 and 2011, PCA failed to keep pace with regional growth. Paragraph 2.7 states that ‘in 2011, it is likely that PCA will handle some 50,000 passengers. If PCA had kept pace with regional demand, the airport would have handled some 350,000 passengers in 2010.’

The study highlighted that: ‘there are no signs that the inability of PCA in the last 10 years to meet local demand for air travel has resulted in a diminution of travel
to/from Plymouth and/or has had a knock-on impact to the local economy.’ (Paragraph 2.18).

Paragraph 3.4 notes the constraints applicable to the airport - ‘The full length of the surfaced asphalt runway at Plymouth is 1,161 metres...As a general rule, an airport needs to have a runway in excess of 1,800 metres if it is to offer full range capability to aircraft such as the Boeing 737 or the Airbus A320 families.’

Paragraph 3.5 acknowledges the other studies undertaken to ascertain the potential for the runway to be extended, but such extensions ‘have proved prohibitively expensive. Extending the runway would involve extending the boundaries of the airport and buying up local commercial and residential property.’

Paragraph 3.12 raises concerns over potential changes made by the Civil Aviation Authority (CAA); if PCA gets a new operator, the CAA may terminate current derogations and impose its new requirement for the lengthening of the Runway End Safety Area from 90 metres to 240 metres. This would cause significant problems for Plymouth as they would only be able to accommodate the 19-seat Otter as operated to and from the Scilly Isles. Paragraph 4.4 goes on to state that only the Twin Otter and ATR92 are still in production and that there are ‘no plans to develop (small) planes in the future that would be capable of landing at PCA given its current runway restrictions.’

Chapter 8 considers the various options available to PCA; as detailed below:

- Maintaining the airport as now, at Rescue and Fire Fighting Services (RFFS) 5, with the capability to handle 50-seat Dash 8-300 aircraft;
- Reducing the RFFS Category from 5 to 3, enabling it to accommodate scheduled service aircraft of up to 19 seats;
- Becoming an unlicensed airfield – not licensed to handle scheduled service aircraft;
- Mothballing the airport for some years until a final decision can be made; and
- Closure of the airport.
2.2 Site Visit

A site visit was conducted on 11th July 2013 between 2pm and 4:30pm. The team visiting from Arup consisted of Gavin Foster, David Grattan and Ben Angell.

They were shown around the airport by Paul James, Asset Manager, and two operational/maintenance staff from Sutton Harbour Holdings, whom had a good knowledge and understanding of the airport site, facilities and of the previous operations.

The purpose of the site visit was to review the condition and current/future capability of the Airport and its facilities, specifically:

- Review the condition and discuss the current/future capabilities of the terminal building.
- Review the condition and discuss the current/future capabilities of the apron and aircraft stands.
- Review the condition and discuss the current/future capabilities of the runway and taxiways.
- Review the condition and discuss the current/future capabilities of the Air Traffic Control (ATC) Tower and Runway Navigational Aids – instrumentation and lighting.
- Review the condition and discuss the current/future capabilities of the support services – rescue and fire fighting, aircraft fuelling, airport maintenance, and hangar.
- Review the condition and discuss the current/future capabilities of the surface access infrastructure – kerbside and car parks.

To cover the above items on the site visit there was a walking tour of the terminal, apron, hangar and ATC Tower. There was a vehicle tour (with stops) to view the airfield and support facilities, particularly runway and taxiways.
3 Existing Infrastructure Review

The condition and current/future capability of the following were reviewed:

- The terminal building.
- The airfield – apron, aircraft stands, runway and taxiway.
- The Air Traffic Control (ATC) Tower and Runway Navigational Aids – instrumentation and lighting.
- The support services – rescue and fire fighting, aircraft fuelling, airport maintenance, and hangar.
- The surface access infrastructure – kerbside and car parks.

3.1 Terminal Building

3.1.1 Condition

General

- Single storey building, that handles all passenger processing
- On visual inspection, the building appears to be intact and secure throughout
- All of the interior fit-out and operational equipment have been removed
- The building utilities are still connected but generally not in use.
- The Closed Circuit Television (CCTV) and the Public Address (PA) systems have been removed, whilst security and fire systems are still in place
- Building is thought to be designed late 1970s/early 1980s.
- Sutton Harbour Holdings representatives stated that while the terminal was operational there was regular maintenance, however since the airport was closed in December 2011 they employ a reactive maintenance regime for essential items.
- Currently there is an inspection of the airport facilities once a week.
- The floor tiles throughout the building are either removed or worn and require replacement before recommencing operations.

Departures

Areas visited during the site visit included: check-in, hold baggage screening, commercial area, departure lounge, executive lounge area, passenger and hand-baggage screening and back-of-house areas.

- Check-in desks and scales have been removed/sold.
- Baggage screening device has been removed/sold.
- Passenger and hand-baggage screening consisted of one Archway Metal Detector and one hand-baggage screening device. Both have been sold and removed.

Sutton Harbour Holdings informed us on the site visit that:
• The check-in area had three desks of which two were used for check in and the other was likely for information/ticketing/check-in without luggage.

• The check-in layout was geared towards a single flight operation at any one time, and there was limited facility provision for handling two simultaneous departures.

Baggage was taken from check-in and manually placed in a hold baggage screening device – baggage that passed screening were passed straight out to the airfield through a hatch in the wall, whereas baggage that failed screening was set aside for further searches.

Arrivals

• The baggage reclaim area has been removed.

Sutton Harbour Holdings informed us on the site visit that:

• The baggage reclaim consisted of a single straight-line roller belt – baggage entered the building through a hatch directly from the airside.

• The Arrivals process was geared towards a domestic operation but had the ability to process international passengers with customs and immigration available as necessary.

• It wasn’t possible to process a domestic and international flight simultaneously because of the lack of segregation.

3.1.2 Capability

The estimated passenger throughput capacity of each of the passenger processing facilities within the existing terminal building as equipped prior to closing is set out below.

Check-In

The check-in area, containing two check-in desks with an assumed average transaction time of 120 seconds per passenger each and a 12 minute queue, have a combined throughput capacity of 72 passengers per hour. It should be noted that not all passengers may need to check-in as they may have checked in on-line or not have bags to check-in. Therefore the actual throughput of passengers is likely to be higher than the theoretical capacity of the check-in desks.

Security

The capacity constraint at security is the x-ray machine as it takes longer to process passenger’s baggage than the passengers using the archway metal detector. With an assumed processing time of 22.5 seconds per passenger and a 7.5 minute queue time, the theoretical security throughput capacity is 180 passengers per hour.

Hold Room

It is understood from the site visit that the hold room would not handle more than one flight simultaneously. Therefore, assuming the hold room area is sized to handle a Dash-8-300 with 100% load factor (56 passengers) and could process two flights in an hour (30 minute dwell time), the maximum capacity of the hold room is estimated to be 112 passengers per hour.
Baggage Reclaim

From the information available it is not possible to estimate the hourly throughput capacity of the baggage reclaim system, however its capacity is limited to one aircraft at any one time.

Immigration

Assuming an immigration average processing time of 60 seconds per passenger and two immigration officers, the throughput capacity is estimated to be 120 passengers per hour.

3.1.3 Summary

The capacity of the overall terminal building is constrained to handling one aircraft at any one time due to the operational restrictions at baggage reclaim and space available in the holdroom.

There may be scope for some operational improvements that would enable the terminal building to handle two aircraft simultaneously within the existing building, provided that there are a low proportion of passengers with hold baggage, the simultaneous flights are both domestic or both international, and that the holdroom could be expanded and the level of service/amount of seating within the holdroom is reduced.

3.2 Airfield

3.2.1 Condition

Apron

- Overall condition of the concrete apron is good – there were no visible signs of significant cracking or ponding.
- The sealant between the pavement slabs has deteriorated in places and in some cases vegetation was growing within the joins.
- The apron has a number of slopes that will assist drainage.
- Drainage culverts are provided at the edge of the apron and were said to be in working condition.
- Stand line markings are visible but faded.
- Some apron signage may require maintenance or replacement due to weathering.
- Apron high-mast lighting is provided.

Runway and Taxiway

- The grassed areas of the airfield are in need of cutting in order for lighting and signage to be operational and visible. [Sutton Harbour Holdings indicated that once the ground nesting birds season had completed they would undertake this work.]
- The runway and taxiway signage appeared in general to be in good condition.
• Runway 06/24 is now designated as taxiway Charlie following the sale of a portion of the runway at the 06 end for redevelopment. The remaining length is too short for passenger aircraft operations and is now used as the main taxiway access between the runway and apron. Before closure it may have been used for the occasional helicopter or light aircraft operation in a crosswind scenario.

• Taxiway Charlie appeared to be in good condition – isolated areas of vegetation were seen growing from joints/cracks but no major deterioration was observed.

• The ground lighting for taxiway Charlie appeared to be intact.

• Runway 13/31 pavement condition is good, however some vegetation was visibly growing from joins between different areas of asphalt.

• No evidence of ponding or significant cracking was observed.

• The airfield ground lighting for runway 13/31 appeared to be mostly intact and in good condition, however there were some cases of vandalism and some lights need to be replaced.

• Due to the period of closure, it is recommended that all airfield ground lighting is tested and maintained to ensure they meet operational requirements.

• The navigational aids including precision approach path indicator (PAPI), instrument land system (ILS) are present and intact. However, to reinstate operations at the airport it is recommended that all navigational aids are tested and recalibrated to ensure they meet operational requirements.

• The runway and taxiway markings are present but slightly faded, therefore for the airport to be operational they may need to be repainted.

• Small sections of perimeter fencing and a couple of emergency access gates were briefly inspected and demonstrated that the airfield was generally secure.

3.2.2 Capability

The apron has a maximum capacity of 5 aircraft. The largest aircraft to have used the apron have been small Code C aircraft such as the Dash-8-300 and BAe 146, however the 5 stands are unable to facilitate 5 aircraft of that size simultaneously.

The runway and taxiway Charlie are restricted to handling one aircraft at a time. The runway is constrained both in length and strength, with a PCN (Pavement Classification Number) of 14. Aircraft with an ACN (Aircraft Classification Number) greater than this are restricted in their number of annual movements. Historically, the runway has handled aircraft up to Dash-8-300 and BAe 146.

3.2.3 Summary

The airfield infrastructure is largely intact and suitable for the reintroduction for passenger services, although if as part of re-licensing the CAA determine that RESAs are required at either runway end, the operational runway length will be reduced. Reactive maintenance is required throughout the entire site before recommencing operations, including, inter-alia:

• Grass cutting around movement areas
• Resealing of pavement slabs
• Clearing the drainage channels of vegetation
• Repair/replacement of signage, ground markings and lighting
• Recalibration and re-commissioning of navigational aids

3.3  Air Traffic Control Tower

3.3.1  Condition

• The ATC control room contained basic equipment.
• It is noted that some of the equipment is dated and if the airport were to become operational again it is likely that CAA and NATS would require an upgrade or modernisation of the ATC facilities.
• The control tower server room still contained equipment required for tower operations, including the servers and cabinets.

3.3.2  Capability

• The ATC tower could accommodate two controllers working simultaneously, which is sufficient for the levels of traffic at the airport.

3.3.3  Summary

• The air traffic control tower structure appeared satisfactory
• However only basic equipment was in situ and this will likely require modernisation or upgrade prior to recommencing operations.

3.4  Support Services

3.4.1  Condition

Fuelling

• The refuelling area contained three tanks for Jet-A1 fuel, each with a capacity of 55,000 litres, and a single bowser for 100LL fuel. Fuel was delivered to the site by truck. A bowser would refuel the larger aircraft, whereas light aircraft would taxi to the refuelling area. There was no underground fuel hydrant system. A red diesel tank was also located in this area to fuel the airfield vehicles.
• The fuel tanks appeared to be fairly new and in good conditions with no visible signs of deterioration.
• The Jet-A1 fuel capacity of the fuel farm is 165,000 litres.
Rescue and Fire-Fighting Service (RFFS)

- The RFFS station is empty but contains space for three crash tender vehicles. The airport previously owned four crash tenders - two have been sold, and of the remaining two only one is operational but dated.
- A basic fire training area was provided, however recent acts of vandalism have resulted in a number of the facilities being burnt-out.
- The airport operated with an RFFS Category 5. If the fire training area is repaired, this can be reinstated.

Maintenance

- The airport and aircraft maintenance hangar close to the ATC tower was in generally good condition and is currently being used to store the remaining two crash tenders.

Hangar

- The general aviation (GA) hangar appeared to be dated and in need of some repair in places. It had the capacity for up to 8 light aircraft. No maintenance equipment was present.

Utilities

- The 50Hz generator has a capacity of 300 kVA. It is understood that it had the capacity to support the critical airport systems e.g. control tower, airfield ground lighting, navigational systems, and some none-essential systems such as terminal lighting.
- The plant rooms located in ‘sheds’ outside of the terminal building had been previously broken into but the equipment was intact.
- Capability

3.4.2 Summary

- RFFS, refuelling and the power utilities would need to be re-commissioned prior to re-introduction of operations.
- The GA hangar is not necessary for operations, but it is advisable to retain this if smaller aircraft are anticipated to continue to operate.

3.5 Surface Access Infrastructure

3.5.1 Condition

Passenger and staff car parking was located directly in front of the terminal building. Four rental car parking places were provided. An additional car park is provided across the access road from the terminal. If airport operations are resumed, the CAA may stipulate a 30m buffer zone be provided in front of the terminal building for security purposes which would reduce the provision of passenger car parking facilities. It is understood that both previously and currently no public transport bus stops are provided.
3.5.2 Capability

- There are sufficient car parking spaces to support the operations. There are no direct public transport interchange facilities available.

3.5.3 Summary

- The existing car parking spaces are suitable for the reintroduction of operations, provided the CAA do not determine that a 30m buffer is required in front of the terminal building. If this is the case, additional spaces will need to be found elsewhere.

- The lack of public transport interchange facilities will not prevent operations at the airport, however it may be a factor that will impact willingness to travel through Plymouth airport and thus constrain the traffic potential.
4 Runway Length

Three scenarios have been explored for the assessment of runway length to understand which aircraft types could operate at Plymouth and what if any payload restriction would be required. Assumptions

The following assumptions have been used for each of the runway length assessments:

- In order to calculate the runway length requirements it has been assumed that typical routes flown from Plymouth would be of ranges of 200 and 500 nautical miles (nm).
- A 200nm range was chosen as it is a sufficient range to serve all of the London airports from Plymouth, as well as other potential regional airports such as Dublin, Cork, Bristol, Jersey, Guernsey and the Scilly Isles.
- The 500nm range was chosen as a range that could serve all of mainland UK and a variety of potential European destinations, including Amsterdam, Brussels, Paris, Geneva and Frankfurt.
- Airfield Elevation: 145m
- Airfield Reference Temperature: 21°C
- Runway Slope: 0.95%
- Runway Condition: Wet
- The runway length assessments have been conducted based on the take-off distance required. The assumption is that this will be the constraining factor for the aircraft types, and not the landing distance required.
- For calculating maximum number of passengers, the following has been assumed:
  - 0.5 Bags per passenger, at an average weight of 20kg
  - The average weight of a passenger including hand baggage is 80kg
- If the calculated number of passengers exceeds the number of aircraft seats, the lower of the two is shown.

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1 Plymouth City Airport, Aeronautical Information Publication (October 2009)
2 Plymouth City Airport, Aeronautical Information Publication (October 2009)
3 Plymouth City Airport, Aeronautical Information Publication (October 2009)
4.1 Range

Figure 1: Selection of airports within 200nm of Plymouth

Maps generated by the Great Circle Mapper – copyright © Karl L. Swartz

Figure 2: Selection of airports within 500nm of Plymouth

Maps generated by the Great Circle Mapper – copyright © Karl L. Swartz
4.2 Payload, Range and Runway Length

The runway length required for an aircraft to take-off is a function of aircraft performance, weight and environmental factors.

The aircraft weight consists of the aircraft, its payload (passengers, baggage and cargo) and fuel. Each aircraft type has a maximum permissible take-off weight – the maximum fuel and maximum payload together will typically exceed this so fuel and payload are traded-off against each other to obtain a balance.

Where the available runway length is less than the runway length required at the aircraft’s maximum take-off weight, the payload and range are further restricted. For the runway length studies, the fuel weight is calculated for each aircraft type based on the 200nm and 500nm ranges. The payload that can then be carried for the given runway lengths are calculated in terms of weight, and then translated into number of passengers using the assumptions stated in section 4.1.
4.3 Runway Scenario 1 – Reinstatement of Existing Services

Using the existing site boundaries, the runway can be modified to provide 90m runway end safety areas (RESAs) at either end of the runway and provide a take-off distance available (TODA) of 1,167m.

Table 1: Scenario 1 Aircraft Types

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Seats</th>
<th>200nm range</th>
<th>500nm range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Payload (kg)</td>
<td>Payload (kg)</td>
</tr>
<tr>
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<td>48</td>
<td>75%</td>
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</tr>
<tr>
<td>ATR</td>
<td>ATR 72-201</td>
<td>66</td>
<td>45%</td>
<td>3,375</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ100*</td>
<td>112</td>
<td>25%</td>
<td>2,948</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ200*</td>
<td>50</td>
<td>40%</td>
<td>2,123</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ440LR*</td>
<td>44</td>
<td>40%</td>
<td>2,450</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-6-300</td>
<td>20</td>
<td>85%</td>
<td>1,785</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-6-400</td>
<td>20</td>
<td>85%</td>
<td>1,785</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-101</td>
<td>37</td>
<td>100%</td>
<td>3,814</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-201</td>
<td>37</td>
<td>95%</td>
<td>3,988</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-301</td>
<td>56</td>
<td>85%</td>
<td>4,463</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-402</td>
<td>78</td>
<td>60%</td>
<td>4,680</td>
</tr>
<tr>
<td>Embraer</td>
<td>ERJ170*</td>
<td>78</td>
<td>50%</td>
<td>4,550</td>
</tr>
<tr>
<td>Embraer</td>
<td>ERJ175*</td>
<td>86</td>
<td>35%</td>
<td>3,570</td>
</tr>
<tr>
<td>Embraer</td>
<td>ERJ195*</td>
<td>118</td>
<td>40%</td>
<td>5,520</td>
</tr>
<tr>
<td>Saab</td>
<td>340A</td>
<td>30</td>
<td>45%</td>
<td>1,409</td>
</tr>
</tbody>
</table>

* Aircraft ACN and/or tyre pressure exceeds existing runway strength. Further assessment would be required to determine if these could operate with restrictions on number of movements, or if runway strengthening would be required to facilitate these.

200nm Range

Aircraft with a payload between 75% and 100% are considered to be most suitable for operation on a runway of this length. These are:

- ATR 42
- Twin Otter DHC-6-300 and -400
- Dash-8 -100, -200 and -300

Aircraft with a payload between 50% and 75% may feasibly operate from the airfield, albeit with restricted passenger numbers.

- Dash-8-400
- ERJ 170

The following aircraft would have a maximum payload factor of less than 50%, making it less viable for them to operate with this runway length.

- ATR 72-200
- BAe 146-RJ100
- CRJ 200 and 440
- ERJ 175 and 195
• Saab 340

**500nm Range**

**Aircraft with a payload between 75% and 100%**
• Dash 8 -100, -200 and -300

**Aircraft with a payload between 50% and 75%**
• ATR 42
• Twin Otter DHC-6 -300 and -400
• Dash 8 -300 and -400

**Aircraft with a payload of less than 50%**
• ATR 72-200
• BAe 146
• CRJ 200 and 440
• ERJ 170, 175 and 195
• Saab 340
4.4 Runway Scenario 2 – Maximum Length Code 2C Runway

The runway strip associated with the existing Code 2C runway is 75m wide either side of the centreline, and it is unlikely that any extension of this would be possible due to neighbouring development. In order to operate the runway with instrumentation, the runway is therefore limited to an International Civil Aviation Organization (ICAO) classification code of 2C. The maximum potential Code 2C length is 1,319m (1,200m +10%). Therefore Scenario 2 assumes a take-off distance available of 1,319m.

Table 2: Scenario 2 Aircraft Types

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Seats</th>
<th>200nm range</th>
<th>500nm range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>% Max Payload</td>
<td>Payload (kg)</td>
</tr>
<tr>
<td>ATR</td>
<td>ATR 42-500</td>
<td>48</td>
<td>95%</td>
<td>5,178</td>
</tr>
<tr>
<td>ATR</td>
<td>ATR 72-201</td>
<td>66</td>
<td>55%</td>
<td>4,125</td>
</tr>
<tr>
<td>ATR</td>
<td>ATR 72-500</td>
<td>68</td>
<td>80%</td>
<td>5,640</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ100*</td>
<td>112</td>
<td>45%</td>
<td>5,307</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ70*</td>
<td>70</td>
<td>90%</td>
<td>7,570</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ85*</td>
<td>100</td>
<td>70%</td>
<td>7,707</td>
</tr>
<tr>
<td>Boeing</td>
<td>737-800*</td>
<td>189</td>
<td>20%</td>
<td>4,055</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ200*</td>
<td>50</td>
<td>55%</td>
<td>2,919</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ440LR*</td>
<td>44</td>
<td>50%</td>
<td>3,062</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-6-300</td>
<td>20</td>
<td>85%</td>
<td>1,785</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-6-400</td>
<td>20</td>
<td>85%</td>
<td>1,785</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-101</td>
<td>37</td>
<td>100%</td>
<td>3,814</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-201</td>
<td>37</td>
<td>100%</td>
<td>4,177</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-301</td>
<td>56</td>
<td>100%</td>
<td>5,250</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-402</td>
<td>78</td>
<td>80%</td>
<td>6,240</td>
</tr>
<tr>
<td>Embraer</td>
<td>ERJ170*</td>
<td>78</td>
<td>70%</td>
<td>6,370</td>
</tr>
<tr>
<td>Embraer</td>
<td>ERJ175*</td>
<td>86</td>
<td>60%</td>
<td>6,120</td>
</tr>
<tr>
<td>Embraer</td>
<td>ERJ190*</td>
<td>106</td>
<td>50%</td>
<td>6,450</td>
</tr>
<tr>
<td>Saab</td>
<td>340A</td>
<td>30</td>
<td>70%</td>
<td>2,191</td>
</tr>
<tr>
<td>Saab</td>
<td>Saab 2000</td>
<td>58</td>
<td>60%</td>
<td>3,720</td>
</tr>
</tbody>
</table>

* Aircraft ACN and/or tyre pressure exceeds existing runway strength. Further assessment would be required to determine if these could operate with restrictions on number of movements, or if runway strengthening would be required to facilitate these.

200nm Range

Aircraft with a payload between 75% and 100%

- ATR 42
- ATR 72-500
- BAe 146 –RJ70
- Twin Otter DHC-6 -300 and -400
- Dash-8 -100, -200, -300 and -400
Aircraft with a payload between 50% and 75%
- ATR 72-200
- BAE 146 – RJ85
- CRJ 200 and 440
- ERJ 170, 175, 190 and 195
- Saab 340 and 2000

Aircraft with a payload of less than 50%
- BAE 146-RJ100
- Boeing 737-800

500nm Range

Aircraft with a payload between 75% and 100%
- ATR 42
- BAE 146-RJ70
- Dash-8 -100, 200 and -300

Aircraft with a payload between 50% and 75%
- ATR 72 – 200 and -500
- BAE 146-RJ85
- Twin Otter DHC-6 -300 and -400
- Dash-8 -400
- ERJ 170 and 175
- Saab 340 and 2000

Aircraft with a payload of less than 50%
- BAE 146-RJ100
- Boeing 737-800
- CRJ 200 and 440
- ERJ 190 and 195

In the Development Options section below, the design aircraft for the apron is assumed to be the Dash-8-400, as it has one of the higher seat capacities and largest physical dimensions of the aircraft able to operate at 75-100% payload.
4.5 Runway Scenario 3 – Code 3C Runway

The Code 3C scenario assumes the maximum possible runway extension length that can be provided to the southeast of the airport without necessitating major road diversions and land acquisition of residential developments. The runway TODA assumed is 1,602m. As this is designated as a Code 3C runway with a 75m runway strip, the runway would be limited to non-instrument operation and therefore wouldn’t be operational in low visibility conditions.

Table 3: Scenario 3 Aircraft Types

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Seats</th>
<th>200nm range</th>
<th>500nm range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>% Max Payload</td>
<td>Total Payload (kg)</td>
</tr>
<tr>
<td>Airbus</td>
<td>A318-112*</td>
<td>136</td>
<td>90%</td>
<td>14,114</td>
</tr>
<tr>
<td>Airbus</td>
<td>A319-131*</td>
<td>156</td>
<td>95%</td>
<td>16,315</td>
</tr>
<tr>
<td>ATR</td>
<td>ATR 42-500</td>
<td>48</td>
<td>100%</td>
<td>5,450</td>
</tr>
<tr>
<td>ATR</td>
<td>ATR 72-201</td>
<td>66</td>
<td>75%</td>
<td>5,625</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ100*</td>
<td>112</td>
<td>70%</td>
<td>8,255</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ70*</td>
<td>70</td>
<td>100%</td>
<td>8,411</td>
</tr>
<tr>
<td>BAe</td>
<td>Avro 146-RJ85*</td>
<td>100</td>
<td>95%</td>
<td>10,460</td>
</tr>
<tr>
<td>Boeing</td>
<td>737-800*</td>
<td>189</td>
<td>50%</td>
<td>10,138</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ100*</td>
<td>50</td>
<td>70%</td>
<td>3,715</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ200*</td>
<td>50</td>
<td>85%</td>
<td>4,511</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ440LR*</td>
<td>44</td>
<td>75%</td>
<td>4,593</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ700-701*</td>
<td>70</td>
<td>75%</td>
<td>6,406</td>
</tr>
<tr>
<td>Bombardier</td>
<td>CRJ900*</td>
<td>90</td>
<td>50%</td>
<td>5,330</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-6-300</td>
<td>20</td>
<td>85%</td>
<td>1,785</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-6-400</td>
<td>20</td>
<td>85%</td>
<td>1,785</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-101</td>
<td>37</td>
<td>100%</td>
<td>3,814</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-201</td>
<td>37</td>
<td>100%</td>
<td>4,177</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-301</td>
<td>56</td>
<td>100%</td>
<td>5,250</td>
</tr>
<tr>
<td>Bombardier</td>
<td>DHC-8-402</td>
<td>78</td>
<td>100%</td>
<td>7,800</td>
</tr>
<tr>
<td>Embrarer</td>
<td>ERJ170*</td>
<td>78</td>
<td>100%</td>
<td>9,100</td>
</tr>
<tr>
<td>Embrarer</td>
<td>ERJ175*</td>
<td>86</td>
<td>90%</td>
<td>9,180</td>
</tr>
<tr>
<td>Embrarer</td>
<td>ERJ190*</td>
<td>106</td>
<td>80%</td>
<td>10,320</td>
</tr>
<tr>
<td>Embrarer</td>
<td>ERJ195*</td>
<td>118</td>
<td>75%</td>
<td>10,350</td>
</tr>
<tr>
<td>Saab</td>
<td>340A</td>
<td>30</td>
<td>95%</td>
<td>2,974</td>
</tr>
<tr>
<td>Saab</td>
<td>Saab 2000</td>
<td>58</td>
<td>100%</td>
<td>6,200</td>
</tr>
</tbody>
</table>

* Aircraft ACN and/or tyre pressure exceeds existing runway strength. Further assessment would be required to determine if these could operate with restrictions on number of movements, or if runway strengthening would be required to facilitate these.

200nm Range

Aircraft with a payload between 75% and 100%

- Airbus A318-112
- Airbus A319-131
- ATR 42-500
• ATR 72-200 and -500
• BAe 146-RJ70 and RJ85
• CRJ 200, 440 and 700
• Twin Otter DHC-6 -300 and -400
• Dash 8 -100, -200, -300 and -400
• ERJ 170, 175, 190 and 195
• Saab 340 and 2000

**Aircraft with a payload between 50% and 75%**
• BAe 146-RJ100
• Boeing 737-800
• CRJ 100 and 900

**500nm Range**

**Aircraft with a payload between 75% and 100%**
• Airbus A318-112
• Airbus A319-131
• ATR 42-500
• ATR 72-500
• BAe 146-RJ70 and RJ85
• Dash 8 -100, -200, -300 and -400
• ERJ 170, 175
• Saab 340 and 2000

**Aircraft with a payload between 50% and 75%**
• ATR 72-200
• BAe 146-RJ100
• CRJ 100, 200, 440 and 700
• Twin Otter DHC-6 -300 and -400
• ERJ 190, 195

**Aircraft with a payload of less than 50%**
• Boeing 737-800
• CRJ 900
5 Constraints & Opportunities

5.1 Constraints

The primary constraints on the airport site are:

- A386 and B3432 roads run along western and northern perimeters of the airport
- Land at the south west of the airport site has been sold for development
- The instrument runway strip provided for Runway 13/31 is 75m either side of the runway. Extension of the strip beyond 75m is considered not to be possible as there are numerous residential buildings and roads beyond the strip on both sides
- The ground level to the south west of the apron drops away steeply.
- The fuel farm appears to be in a decent and operable condition, potential relocation of this would be expensive.
- There is an existing industrial development to the south east of the runway 31 threshold. This is considered to be the only potential area for a runway extension. This land would require acquisition as it is located outside of the airport boundary and could also potentially require significant and expensive earthworks as the land falls away from the site at this point.

Figure 3: Site constraints
5.2 Opportunities

The main opportunities for the site are:

- Lengthening of the runway 13/31 to the south east
- Provision of a taxiway bypass/runway holding bay to increase runway capacity
- Terminal expansion
- Apron expansion

Figure 4: Key opportunities
6 Development Options

Three options have been explored for further development of the airport site:

- Option 1 – Do-Minimum Reinstatement of services to CAA standards
- Option 2 – Short runway extension to achieve max length for Code 2C Instrument runway
- Option 3 – Longer runway extension to Code 3C Non-Instrument standards

6.1 Option 1 – Do Minimum

This scenario assumes that for the airport to re-open, the Civil Aviation Authority (CAA) would require compliant 90m runway end safety areas (RESAs) to be provided at either end of the runway.

In order to achieve this requirement and also maximise the runway length available for take-off, the Runway 13 threshold would need to be displaced to create a longer starter strip, though the landing distance available would also need to be reduced to accommodate the required RESAs.

Figure 5: Scenario 1 – Do Minimum
6.2 **Option 2 – Maximum Code 2C Runway**

As outlined in the Runway Length section of this report, an instrument runway would be limited to a length of 1,319m due to the available width for the associated runway strip. Beyond this length, the runway would be categorised as a ‘Code 3C Runway’ and would require an instrument runway strip that is double the width of the existing, which is not feasible given the proximity and amount of existing development along the boundaries of the Airport site.

Scenario 2 involves a short runway extension to the south east (see figure below). This would require the airport to expand beyond its existing site boundaries, and would involve land acquisition, demolition of the existing buildings and earthworks to build the land up to the appropriate levels for the runway strip and RESA.

This length of runway would support larger Dash-8 Q400 aircraft operations. To accommodate these aircraft a reconfiguration and enlargement of the apron would be required. It is also possible to provide additional stands on the other side of the taxiway if required with a northern apron expansion. The apron expansion approaches Runway Road, so an impact assessment will likely be required to evaluate the odour and noise implications of the expanded apron on the adjacent properties. The stands shown below are configured for power-in power-out operations, so that aircraft do not require pushback tugs to operate. An indicative location for a taxiway bypass/runway holding bay is also shown in the sketch below– this would provide increased runway capacity and operational flexibility. Additionally, an indicative zone for terminal expansion is highlighted to accommodate the growth in passenger demand associated with operating larger aircraft.

---

4 The Dash-8 Q400 is categorised as an ICAO Code D aircraft on account of the aircraft outer main gear wheel span. The runway width required for a Code D aircraft is 45m, exceeding the existing runway width by 15m. However, there is precedent for operating this aircraft type on a 30m wide runway in the UK at London City Airport, so subject to regulatory approval it is likely that it could operate on a 30m wide runway at Plymouth.

5 The Q400 aircraft type will require an upgrade of the RFFS capabilities from category 5 to category 6. This would require two crash tenders of suitable performance specifications to be available during Q400 operation, so may involve upgrade or purchasing of additional crash tenders.
Figure 6: Option 2 – Maximum 2C runway / short Runway Extension
6.3 Option 3 – Code 3C Runway

This scenario considers the longest possible runway extension that could be provided without requiring significant diversion of major roads but does require land acquisition to the south east.

For CAA/ICAO compliance, the runway would be limited to visual approach conditions, as an instrument runway would require double the width of runway strip. The main implications of operating this longer non-instrument runway, is that in adverse weather conditions aircraft would have to divert to another airport. It should be noted that airlines may decide that this is an operational risk that they are not willing to accept.

The option involves expanding the runway at the south eastern end into the adjacent industrial park. As per the previous option, this would require land acquisition, building demolition and significant earthworks. In this scenario, the design aircraft is assumed to be the A319 aircraft, and it is assumed that these would be operated in a power-in / pushback operation to make the most efficient use of the limited apron space available. The apron expansion approaches Runway Road, so an impact assessment will likely be required to evaluate the odour and noise implications of the expanded apron on the adjacent properties.

Additionally, a taxiway bypass / runway holding bay would increase the runway capacity and operational flexibility by enabling aircraft to hold near the threshold whilst another aircraft is taking off or landing. A zone for future terminal expansion has also been identified.

Figure 7: Option 3 – Code 3C Non-Instrument Runway / Longer runway Extension

---

6 The A319 aircraft type will require an upgrade of the RFFS capabilities from category 5 to category 6. This would require two crash tenders of suitable performance specifications to be available during A319 operation, so may involve upgrade or purchasing of additional crash tenders.
## Summary

The following table outlines the key infrastructure improvements required for each scenario and to bring the airport to current Civil Aviation Authority (CAA) standards.

<table>
<thead>
<tr>
<th>Option</th>
<th>Site Boundary Expansion</th>
<th>Runway Expansion</th>
<th>Apron Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None</td>
<td>Small expansion of runway paved area and additional grading required. 90m RESA provided at the southern end to meet ICAO compliance.</td>
<td>Adjust paint markings as appropriate for the operating aircraft type.</td>
</tr>
<tr>
<td>2</td>
<td>Partial expansion of boundaries to South-East</td>
<td>Significant expansion of paved and graded runway areas. Optional pavement and grading for taxiway bypass/runway holding bay. Lighting and navigational aid modifications required. 90m RESA provided at the southern end to meet ICAO compliance.</td>
<td>Expansion to north (optional)</td>
</tr>
<tr>
<td>3</td>
<td>Significant expansion of boundaries to South-East</td>
<td>Significant expansion of paved and graded runway areas. Optional pavement and grading for taxiway bypass/runway holding bay. Lighting modifications required. 90m RESA provided at the southern end to meet ICAO compliance.</td>
<td>Significant expansion to north (optional) and realignment of taxiway</td>
</tr>
</tbody>
</table>

In addition to this, the following will be required for each of the three options:

- Grass cutting around the entire airfield
- Resealing of apron slabs and cleaning of vegetation from drainage channels
- Fitting out and reinstalling equipment in the terminal building
- Re-commissioning of the following, with equipment repairs/replacement as necessary
  - Control Tower
  - RFFS Station
  - Navigational Aids (Option 3 will not require the ILS to be re-commissioned)
  - Airfield Lighting, Marking and Signage
8 CAA Licensing

The airport was previously operated under a number of CAA dispensations as ‘grandfather clauses’, however these lapsed six months after airport operations ceased. In order to reinstate services, the CAA may stipulate that certain more stringent current recommendations and standards are adhered to if the airport was to become operationally licensed again.

It is recommended that the CAA are therefore consulted as early as possible in any decision making process to understand their latest requirements.
9 Capital Investment

9.1 Introduction

In this section the capital investment levels required to deliver each of the three development options outlined in section 6 above are presented. Capital cost estimates are presented in real terms based on 2013 construction prices.

9.1.1 Cost Certainty

It should be noted that no design work has been undertaken for the concepts presented; therefore capital investment is based on block and master plan concepts. As a result there is a high level of cost uncertainty in the capex and these should be considered as order of magnitude estimates only.

Table 4 below provides an indication of different levels of cost certainty based on various levels of design completion. The estimates presented below are considered to be level 4 to 5 estimates and would be subject to refinement in later stages of a design process.

Table 4 Capital Investment Estimate Levels

<table>
<thead>
<tr>
<th>Estimate Level</th>
<th>Estimate Description</th>
<th>Design Phase</th>
<th>Level of Design Completion</th>
<th>Methodology</th>
<th>Accuracy Range</th>
</tr>
</thead>
</table>
| 5              | Rough Order of Magnitude | Planning Schematic Design | 0% to 5% | Parametric Model, Ca
dy Capacity, Footprint, Etc. | L: >20% to <50% H: <5% to <10% |
| 4              | Cost Feasibility      | Planning Schematic Design | 1% to 5% | Equipment Factor, Parametric Models | L: >20% to <50% H: <5% to <10% |
| 3              | Budget Authorisation  | Planning Schematic Design, Design Documents | 10% to 40% | Unit Costs, Estimators | L: >30% to <50% H: <5% to <10% |
| 2              | Budget/ Cost Estimate | Preliminary Design Engineering Design Documents, Construction Documents | 30% to 70% | Detailed Unit Cost, Detailed Take Off, Detailed Unit Cost, Detailed Take Off, Estimator | L: >5% to <15% H: <5% to <10% |
| 1              | Est. | Detailed Design Engineering Construction Documents | 50% to 100% | Detailed Unit Costs, Detailed Take Off, Estimator | L: >2% to <5% H: <5% to <10% |

9.1.2 Assumptions

In order to establish the capital investment estimates a number of assumptions have been made in relation to infrastructure, facilities and general conditions at the airport:

- Utilities can be simply re-commissioned with no requirement to refurbish, upgrade or replace.
- Stripped topsoil (for options 2 & 3) can be either deposited on site or taken away at minimal/zero additional cost.
- Bulk fill material for options 2 and 3 can be mix of imported surplus clay and granular material and can be sourced locally.
• A conservative allowance has been made for refurbishment works to the existing terminal building and covers the provision of new services, interiors and a minor allowance for some works to the external building envelope.

• Runway resurfacing works will be undertaken prior to aircraft operation, some drainage groove cutting will be required and it is assumed that the runway surface will be planed before overlay applied to maintain existing runway elevations.

• Extent of work required to the ILS system is not fully understood at this time, a provisional sum of £250k has been allowed to cover re-commissioning of this (including re-calibration).

• Allowance for refurbishment of RFFS Station primarily intended to replace furniture, fittings and equipment.

• The airport will need to comply with the latest EU standards for hold baggage screening. It is assumed that a stand-alone small-bore standard 3 HBS device will be appropriate to meet comply with the requirements.

• Based on future passenger demand there will be no requirement to expand the passenger terminal facilities at the airport.

• We understand that the airport operator has a number of replacement aeronautical ground lighting fittings in storage so we have only made a small allowance for replacement of broken fittings. No allowance has been made for significant replacement of the systems themselves.

9.1.3 Exclusions

As a result of limited information and based on the preliminary nature of the master plan and concepts there are a number of exclusions in the capex that should be understood.

The list below provides for reference an outline of exclusions for each of the options:

• Land acquisition for runway extension (options 2 & 3 only).

• Site clearance and demolition for acquired land for runway extension (options 2 & 3).

• Cost associated with aerodrome licensing and other operating permits.

• Reinstating or installing navigational aids (radar/ DVOR) – as far as we are aware Plymouth airport does not have this equipment.

• New airside vehicles (other than rescue and crash tender) many of the airside vehicles, such as tow tractors, fuel bowsers, baggage trucks etc. are assumed to be provided by airlines and other third parties.

• Site wide security (CCTV, fencing & gates).

• Site access roads (not considered necessary as this is an existing airport).

• Aircraft stand equipment such as stand entry guidance systems, fixed electrical ground power or hydrant refuelling all of which are not considered necessary for this airport.

• Works to the control tower
• No allowance has been made for refurbishment of the fuel farm, it is assumed that this is not necessary or will be undertaken by a third party concessionaire.
• No allowance made for refurbishment or redevelopment of aircraft maintenance hangars this is assumed to be a third party or tenant cost.
• Works associated with redevelopment/ expansion of car parks.

9.2 Capex Estimating Approach

Outlined below is the general approach to establishing the capital investment assessment for each of the development scenarios.

9.2.1 Quantities

Quantities and size of required works have been established on the following basis:

• Measurement of existing areas, pavements, terminal, ancillary facilities and other facilities and areas;
• Assessment of additional pavement areas/ other facilities required for expansion as identified in the options above;
• Estimates of earthworks requirements (see section below);
• Assumptions, based on visual assessment, of areas to be refurbished/ upgraded or replaced.

9.2.2 Earthworks Quantities

For options two and three there will be a need to undertake earthworks in order to provide a CAP168 compliant platform for runway extension and/ or runway end safety area grading. Outlined below is provided and overview of the approach taken to establish preliminary estimates of earthwork quantities.

Unfortunately no detailed topographical or geotechnical data was made available for the site so the estimates made should be considered preliminary. Should an airport operator wish to consider these options further, significantly more detailed analysis will be required ahead of making final decisions or progressing designs.

Estimates of earthworks quantities have been established on the basis of Ordinance Survey 10m terrain contour data obtained for the airport and surrounding area. It has been assumed that the runway extension, strip and RESA will delivered at the same elevation as the existing runway.

The runway extension, strip and RESA areas that sat between contours were multiplied by the average height of the contours to establish their volumes (e.g. any area between the -10m and -20m contour was multiplied by an average height of 15m). Tie-in with existing terrain levels is assumed to be at a maximum of 1:3 gradients.

The distance required to tie in with the existing ground levels at the 1:3 gradient was estimated, and this area was multiplied by half of the average contour height (e.g. any tie-in area between the -10m and -20m contours were multiplied by
Where it appears the 1:3 tie-ins would encroach into existing residential areas or major roads it is assumed a crib type retaining wall will be required. Using this approach the estimated quantum of earthworks required for each option is as follows:

- Option 1 – none required;
- Option 2 – ~315,000m³ and 400m² allowance for retaining wall;
- Option 3 – ~1,000,000m³ and 1,300m² allowance for retaining wall.

**9.2.3 Unit Rates**

Unit rates are based on our experience of similar UK projects, benchmarks and reference to other airport costs models for buildings, pavements and other facilities. Unit rates are then adjusted to take account of specific local conditions in the South and South West of England. It has been assumed that rates in Plymouth are around 97% of UK average rates and 95% of Greater London Rates.

**9.3 Development Cost Estimates**

**9.3.1 Option One**

Option One is focused on the re-commissioning of the airport with no expansion. Key cost elements under this section are related to the terminal refurbishment, runway resurfacing, procurement of passenger and baggage security equipment and the refurbishment of the office block. No significant earthworks will be required but re-grading of the areas adjacent to the runway ends may be needed to provide a 90m RESA at each of the runway. The total cost of this option is ~£9.9m broken down in Figure 8 and summarised in Table 5 below.

**Figure 8 Option 1 Capital Cost Breakdown**

![Pie Chart]
9.3.2 Option Two

Option Two provides for an upgrade of the runway to the maximum permissible length to remain within the existing Code 2C categorisation and maintain the 75m runway strip. The runway will be extended to 1,319m by way of a short runway extension requiring the airport to go outside its existing boundary and triggering the need for earthworks.

Key cost elements in this option are related to earthworks, terminal refurbishment, runway extension/ resurfacing and provision of additional apron. The total cost of this option is ~ £29.6m broken down as shown in Figure 9 and summarised Table 5 below.

![Figure 9 Option 2 Capital Cost Breakdown](image)

9.3.3 Option Three

Option three involves extending the runway at the south eastern end into the adjacent industrial park. This scenario considers the longest possible runway extension that can be provided without requiring significant diversion of major roads. However, it will require land acquisition to the south east, building demolition and significant earthworks.

The key cost elements in this option are related to earthworks, terminal refurbishment, runway extension/ resurfacing and provision of additional apron.

The total cost of this option is ~ £69.6m broken down as shown in Figure 10 and summarised in Table 5 below.
Table 5 shows a summary of the capital cost for each option by infrastructure element.

**Table 5 Capital Cost Summary**

<table>
<thead>
<tr>
<th>Element</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabling Works</td>
<td>£280,000</td>
<td>£8,269,750</td>
<td>£27,847,813</td>
</tr>
<tr>
<td>Aeronautical Expenditure</td>
<td>£2,813,400</td>
<td>£2,813,400</td>
<td>£2,813,400</td>
</tr>
<tr>
<td>Airside Infrastructure</td>
<td>£2,839,675</td>
<td>£8,723,909</td>
<td>£11,173,253</td>
</tr>
<tr>
<td>Ancillary Facilities</td>
<td>£420,000</td>
<td>£420,000</td>
<td>£420,000</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>£600,000</td>
<td>£600,000</td>
<td>£600,000</td>
</tr>
<tr>
<td>Contractors Preliminaries</td>
<td>£869,134</td>
<td>£2,603,382</td>
<td>£5,356,808</td>
</tr>
<tr>
<td>Professional fees</td>
<td>£695,308</td>
<td>£2,082,706</td>
<td>£4,285,447</td>
</tr>
<tr>
<td>Risk / Contingency</td>
<td>£1,390,615</td>
<td>£4,165,412</td>
<td>£17,141,786</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£9,908,132</strong></td>
<td><strong>£29,678,560</strong></td>
<td><strong>£69,638,507</strong></td>
</tr>
</tbody>
</table>
9.3.5  Risks and Opportunities

Outlined below are a number of risks and opportunities associated with the capital expenditure.

- Arup has assumed that the runway will need to be resurfaced as part of the re-commissioning – a detailed survey of the runway may present opportunities to either reduce or defer this capex.

- Further detailed investigation of the terminal buildings may reveal that services and structures require little upgrade/refurbishing works resulting in possible opportunities to make capital cost savings.

- An allowance has been made for the refurbishment of the prefabricated office block – it may be possible to defer this or assume that tenants will take responsibility for refurbishment and fit-out of leased space resulting in potential cost savings.

- Arup has only allowed a notional £250k for re-commissioning of the ILS and DME systems. If these need to be replaced it could cost between £400-600k.

- There may be a need for refurbishment of the tower equipment and this could be a cost that needs to be carried by the airport operator.

- The earthworks components of options 1 and 2 represent considerable cost uncertainty and risk. Detailed site investigation studies may conclude significantly more earthworks or site preparation is required resulting in substantially higher costs.
Appendix C

Demand Forecast
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1. Introduction

Aviation Economics (AE) has been asked by Plymouth City Council to evaluate the options regarding the future of Plymouth City Airport. Aviation Economics has been commissioned to review the competitive positioning of Plymouth City Airport (PLH), to produce a long-term traffic forecast and comment on the Business Plans for a new airline operation to be based at the airport.

Sections 2 to 5 cover the existing situation with regards to some of the trends in the UK aviation market, a competitive analysis of the airports in the Southwest, and commentary on changes in the London market.

Section 6 covers the methodology Aviation Economics has used to provide a 20 year passenger forecast for Plymouth City Airport and the forecast itself.

Section 7 assesses the viability of an airline operation at Plymouth and 9 provide an analysis of the potential regional airlines that could operate from Plymouth and an analysis of the aircraft types that could use the airport.

Section 8 considers the options available to Plymouth City Council regarding the future of the airport.
2. Demand for air transport in the Plymouth catchment area

The three airports serving the Southwest (Exeter, Newquay and Plymouth) have experienced traffic declines in recent years. Exeter Airport has performed best and has become a major base for Flybe. Newquay grew strongly originally, but has lost nearly half its passenger traffic since 2008. Plymouth has struggled to achieve substantial traffic volumes and is now closed.

Figure 1 - Annual Passenger Traffic Trends at Southwest airports

![Graph showing annual passenger traffic trends at Southwest airports]

Note: Prior to 2003, Newquay Airport did not provide any passenger data to the CAA.
Source: UK Civil Aviation Authority (CAA)

PLH's traffic throughput peaked at just under 160,000 passengers in 2009, despite a wide range of destinations having been tried from the airport. The three main routes had been London (Gatwick), Manchester and Glasgow.

Figure 2 - Routes operated from Plymouth (Annual Passengers)

![Graph showing routes operated from Plymouth]

Source: CAA

Plymouth Airport historical passenger numbers were also somewhat inflated by the fact that Air Southwest chose to run some of its services from Newquay through Plymouth. It is possible that
without this Newquay originating traffic, the Air Southwest large turboprop operating model would have been unsustainable.

In May 2010, Sutton Harbour Holdings, the parent company of Air Southwest, the base carrier at PLH, announced that the airline was to be sold to enable the company to "resource activities more effectively". The sale to Humberside-based Eastern Airways was completed in September 2010. In July 2011 Eastern announced that Air Southwest would cease operations, stating that the closure was due to low demand on routes making them financially unviable.

Flights from Plymouth to London Gatwick ended on January 11th 2011, and flights to Glasgow, Guernsey, Jersey and Manchester ended on 14th September 2011, whilst the remaining flights to Aberdeen, Bristol, Cork, Dublin and Leeds Bradford ended on 30th September 2011. The leases of Air Southwest’s three remaining aircraft were transferred to Eastern. Plymouth City Airport closed on 23rd December 2011.

The financial performance of Plymouth City Airport, at the operating profit (loss) level, is shown below – the operating loss margin was 23% in 2008 and 2009, and 33% in 2010, a very poor result. 2010 net results were boosted by a one-off exceptional income of £5.9 million due to the sale of airport land.

Table 1 - Plymouth Airport Financial Results (2008-2010)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>£2,344,000</td>
<td>£3,315,000</td>
<td>£3,234,000</td>
</tr>
<tr>
<td>Cost of sales</td>
<td>£3,261,000</td>
<td>£4,096,000</td>
<td>£3,972,000</td>
</tr>
<tr>
<td>Gross profit (loss)</td>
<td>(£917,000)</td>
<td>(£781,000)</td>
<td>(£738,000)</td>
</tr>
<tr>
<td>Other operating income</td>
<td>£17,000</td>
<td>£16,000</td>
<td>£5,895,000</td>
</tr>
<tr>
<td>Profit (loss)</td>
<td>(£529,000)</td>
<td>(£765,000)</td>
<td>£4,791,000</td>
</tr>
</tbody>
</table>

Source: Berkley Hanover Report – “Plymouth City Airport – Economic Study Into Air Services For Plymouth”, August 2011
3. Recent trends in the UK domestic market

There has been a sharp decline in UK domestic passenger numbers since 2007, resulting from a combination of UK economic weakness and increases in Air Passenger Duty (APD), which doubly impacts UK domestic passengers. In 2005, there were 50.2m UK domestic passengers; in 2012 there were 37.6m domestic passengers, a fall of 25%.

![Figure 3 - Decline in the UK Domestic Air Passenger Market and Rising APD](source: CAA and HM Treasury)

### Air Passenger Duty

According to a study by York Aviation (*The Impact Of Air Passenger Duty On Scotland, October 2012*), APD has increased substantially as a proportion of typical fares, particularly on domestic fares - from around 10% of the value of a fare to around 26%. For international travel, this proportion has gone from between 3% and 4% to between 9% and 14%.

Flybe Chairman and Chief Executive, Jim French, has highlighted the impact of APD:

"Domestic air travel has been hammered hard over the past four years" resulting in “four million less domestic air passengers travelling, equating to a 21% decrease in passenger numbers passing through the country’s regional airports. I cannot stress enough that the success of regional aviation is crucial to regional development and supporting commerce, industry and social mobility, not to mention much-needed employment."

### Importance of airport size

Recent experience has shown that smaller airports have struggled to compete against larger neighbouring airports, as airlines prefer to focus their activities at one location where they can achieve maximum traffic volumes and revenue. Three examples of this are shown below.
Coventry no longer has any passenger traffic, having failed to compete against Birmingham Airport.

**Figure 4- Historic development of passengers at Birmingham and Coventry airports**

![Graph showing the historic development of passengers at Birmingham and Coventry airports.](image)

Source: CAA

Durham Tees faces closure with traffic gravitating to Newcastle Airport.

**Figure 5- Historic development of passengers at Newcastle and Durham Tees Valley airports**

![Graph showing the historic development of passengers at Newcastle and Durham Tees Valley airports.](image)

Source: CAA
Prestwick has been sold to the Scottish government for £1 and faces the prospect of closure despite the presence of Ryanair, again having failed to compete with Glasgow International Airport.

**Figure 6**- Historic development of passengers at Glasgow International and Prestwick airports

![Graph of passenger development](image)

Source: CAA

An industry rule of thumb, is that it is very challenging for airports handling under 1 million passengers per annum to operate profitably, as the graph below demonstrates.

**Figure 7**- Size versus Profitability at UK Regional Airports

![Graph of size vs profitability](image)

Source: CAA Company Accounts for 2011/12 Financial Year

### 4. Review of competing airports

The airports in competition with Plymouth City Airport are:

- Bristol, the major regional airport, which has substantial traffic flows domestically, to the EU and to other international destinations
- Exeter which has a split of largely domestic and EU passengers; and
- Newquay Airport which serves primarily UK domestic passengers.
Table 2- Southwest Airports’ Traffic Statistics

<table>
<thead>
<tr>
<th></th>
<th>Bristol</th>
<th>Exeter</th>
<th>Newquay</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2012 Passengers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charter</td>
<td>321</td>
<td>170</td>
<td>-</td>
</tr>
<tr>
<td>Scheduled</td>
<td>1,095,168</td>
<td>268,781</td>
<td>161,685</td>
</tr>
<tr>
<td>Total</td>
<td>1,095,489</td>
<td>268,951</td>
<td>161,685</td>
</tr>
<tr>
<td>EU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charter</td>
<td>599,542</td>
<td>168,464</td>
<td>919</td>
</tr>
<tr>
<td>Scheduled</td>
<td>3,747,239</td>
<td>205,554</td>
<td>3,378</td>
</tr>
<tr>
<td>Total</td>
<td>4,346,781</td>
<td>374,018</td>
<td>4,297</td>
</tr>
<tr>
<td>Other international</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charter</td>
<td>232,373</td>
<td>45,962</td>
<td>290</td>
</tr>
<tr>
<td>Scheduled</td>
<td>241,615</td>
<td>6,032</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>473,988</td>
<td>51,994</td>
<td>290</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>5,916,258</td>
<td>694,963</td>
<td>166,272</td>
</tr>
</tbody>
</table>

Source: CAA

**Bristol Airport**

In 2012, Bristol Airport reported that passenger numbers had risen by 2.8% to 5.92 million passengers from 5.781 million passengers in 2011, making Bristol the only airport in the UK’s top ten to see growth each year since 2009. In October 2012, Bristol welcomed a new airline when bmi commenced a twice-daily service to Aberdeen, and in February 2013 bmi started flights to Frankfurt and Hamburg. Other new routes in 2012 included an easyJet service to Copenhagen and Naples, and a three times a week Ryanair flight to Warsaw Modlin. This year bmi regional have started services to Hanover, Milan Malpensa and Munich.

The airport has benefited from a resurgence in business travel with KLM and Brussels Airlines, adding capacity on routes to major European hub airports. APD increases have led to some passengers using airports such as Amsterdam as connecting points for medium to long-haul flights.

Bristol has plans to ultimately handle 10 million passengers per annum. Last year saw the addition of three new aircraft stands and the construction of an additional immigration facility.

In 2012, Bristol Airport offered services to 12 domestic airports, the most important markets being Belfast, Edinburgh, Glasgow and Newcastle which accounted for 84% of total domestic passengers.
Exeter Airport

Exeter Airport handled 695,000 passengers in 2012, down from a peak of just over 1 million passengers carried in 2007.

Exeter Airport is dominated by its base carrier Flybe which operates services to a number of UK domestic and EU destinations, although many of these markets are only served in summer months. Flybe has its headquarters at the airport and also has a maintenance base there. The other scheduled operators are Skybus which serves the Isles of Scilly.

In 2012, Exeter Airport offered services to 11 domestic airports. The largest market was Manchester which accounted for 24% of total domestic passengers. In June 2013 Rigby Group Plc acquired Exeter Airport from Balfour Beatty Plc for an undisclosed sum.
Newquay Airport

Newquay Airport handled 166,000 passengers in 2012, down from a peak of just over 431,000 passengers in 2008.

In 2013, Flybe scheduled two year-round destinations - London Gatwick and Manchester – but the airline has recently sold its Gatwick slots as part of its turnaround plan. Newquay Airport has secured the future of its London operations with the allocation of PSO status. Although services to any London Airport would meet the criteria, Gatwick offers the best compromise of connectivity and slot availability – the airport has just received authorisation to increase peak hour movements. The Isles of Scilly are served year-round by Skybus. There are eight summer-only destinations: Belfast City, Birmingham, Edinburgh, Newcastle (Flybe); Düsseldorf (Lufthansa); Liverpool (easyJet) plus charter destinations to Turkey, Bulgaria, Italy and Portugal.

Newquay benefits from:

- Cornwall’s attractiveness as a major summer tourist destination
- Second home ownership, and
- Its geographic remoteness

In 2012, Newquay Airport offered services to nine domestic airports. By far the most important market was London Gatwick which accounted for 59% of total domestic passengers.

Figure 10- Newquay Domestic Passengers by Destination 2012

<table>
<thead>
<tr>
<th>Destination</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gatwick</td>
<td>95244</td>
</tr>
<tr>
<td>Manchester</td>
<td>31214</td>
</tr>
<tr>
<td>Isle of Scilly</td>
<td>14197</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>9806</td>
</tr>
<tr>
<td>Glasgow</td>
<td>3532</td>
</tr>
<tr>
<td>Norwich</td>
<td>2706</td>
</tr>
<tr>
<td>Others</td>
<td>5409</td>
</tr>
</tbody>
</table>

Source: CAA
5. London Market Analysis

Pricing changes at Gatwick

PLH’s most important route historically has been to London Gatwick, typically accounting for around 36-50% of all passengers.

The economics of operating to Gatwick have changed dramatically in recent years, following a change in strategy by the new owners of the airport, Global Infrastructure Partners (GIP), which has a declared objective of seeking to increase the average number of passengers per aircraft movement.

Gatwick’s summer landing charges were increased by 62.5%, while their winter charges for Chapter 3 and 4 aircraft were reduced to zero. Other charges were kept at the same level. As such, the entire cost increase allowed under the CAA’s price cap for Gatwick was loaded on to summer landing charges.

The change in charging structure brought in by GIP in April 2011 led to a legal challenge from Flybe made under Section 41 of the Airports Act 1986, arguing that the new charges structure unreasonably discriminated against it and other operators of small aircraft at Gatwick. The CAA found that although the changed charges discriminate against airlines using small aircraft, the discrimination was not unreasonable, because Gatwick’s objective of increasing the efficient use of its single runway in restructuring its charges, justified the decision to make the changes.

In its submission to the CAA, Flybe estimated that the total airport charges it paid at Gatwick would rise on average by 18% per departing passenger in 2011/12 compared to the previous year. On domestic routes, Flybe said the increases would range from 5% to 22%.

Flybe stressed its position as a specialist in the provision of regional services and its contribution to a policy of developing regional air services in response to pressures on airport capacity in the South East and by undermining Flybe’s services Gatwick’s charges had a damaging effect on regional services and communities.

Gatwick won the hearing as it contended that its new charging structure was economically justified by the need to make efficient use of a scarce resource - the single runway at Gatwick, and that there was excess demand for arrival and departure slots throughout most of the day, in most days of the week during the summer months.

This has severe repercussions for any UK regional service to Gatwick as airport charges in the summer are prohibitively high – over £57 per passenger (these are before APD of £13).
### Table 3 - Analysis of Airport Charges – UK Regional Summer Route to Gatwick

<table>
<thead>
<tr>
<th>Aircraft type: ATR 42</th>
<th>Gatwick charges (summer peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Take-off Weight (MTOW)</td>
<td>16.90 tonnes</td>
</tr>
<tr>
<td>Maximum Landing Weight (MLW)</td>
<td>16.40 tonnes</td>
</tr>
<tr>
<td>Capacity</td>
<td>48 seats</td>
</tr>
<tr>
<td>Load Factor</td>
<td>70.0%</td>
</tr>
<tr>
<td>Passengers</td>
<td>34</td>
</tr>
<tr>
<td>Runway Charges</td>
<td></td>
</tr>
<tr>
<td>Landing</td>
<td>£1,593.92</td>
</tr>
<tr>
<td>Environment</td>
<td>£7.89</td>
</tr>
<tr>
<td>Terminal Charges</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td>£18.05</td>
</tr>
<tr>
<td>Aircraft Parking</td>
<td>£0.00</td>
</tr>
<tr>
<td>Airport Charges</td>
<td>£1,620</td>
</tr>
<tr>
<td>Average Per Pax</td>
<td>£47.64</td>
</tr>
<tr>
<td>Pax Charges</td>
<td></td>
</tr>
<tr>
<td>Passenger</td>
<td>£300.90</td>
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<tr>
<td>Infrastructure</td>
<td>£29.24</td>
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<tr>
<td>Total Pax Charge</td>
<td>£330</td>
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<tr>
<td>Average Pax Charge</td>
<td>£9.71</td>
</tr>
<tr>
<td>Total Charges</td>
<td>£1,950</td>
</tr>
<tr>
<td>Average per Pax</td>
<td>£57.35</td>
</tr>
</tbody>
</table>

Source: airportcharges.com

### Other London Airports

The route from Plymouth to Heathrow was closed back in 1997. The Heathrow route, according to the 1996 CAA passenger survey showed that 55% of passengers on the route were Plymouth originating, and that 87% of those passengers were connecting onto other short and long-haul flights.

Once the Heathrow service was lost, Gatwick became the main London airport served from PLH. Whilst Gatwick provided fewer connecting opportunities than Heathrow, it nevertheless provided reasonable traffic volumes for Air Southwest.

It is more or less inconceivable that either of these two London airports could be served from Plymouth in the future as:

- A new entrant would need to acquire slots, which are scarce and very expensive
As discussed in the Gatwick Case Study in the previous section, operating regional aircraft to either Gatwick or Heathrow is now prohibitively expensive.

This leaves the following alternatives:

- London City
- London Luton
- London Southend
- Stansted

Air Southwest operated a service to London City airport in 2010 but the service was terminated after a few months of poor performance.

None of these airports offers attractive long-haul connecting opportunities in their own right and none of these airports have fast ground transport links to Heathrow, which means that for Plymouth originating international passengers it would be perhaps more attractive to revert to surface access modes for travel to Heathrow; the recommended minimum connect time between LCY and LHR being the same time as driving from Plymouth to LHR – 3 hours 30 minutes (Source: OAG and Google Maps).

Each of these airports would provide various degrees of access to London, but as previously discussed, with the impact of APD, domestic operations are becoming difficult to operate profitably with the exception of some of the longer-haul thick domestic services served by easyJet and Ryanair such as London-Scotland and island-mainland services.
6. Aviation Economics Forecast - Methodology and Results

Catchment Area Analysis

The City of Plymouth has a population of 259,000\(^1\). Including the surrounding districts of South Hams and West Devon as well as the Cornwall Community area of Saltash and Callington, the enlarged surrounding population of Plymouth is 447,000\(^1\).

**Figure 11- Population Density in the Southwest**

![Population Density Map](image)

Source: Ordnance Survey, UK National Statistics

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\(^1\) ONS Mid-2010 Estimate
The airports in the Southwest have overlapping catchment areas. The Plymouth Airport one-hour drive time catchment overlaps with Newquay Airport in the west and Exeter Airport in the east.

**Figure 12- Plymouth Airport – One-Hour Drive Time**
Methodology and Traffic Forecast

Projecting potential traffic at PLH presents a number of methodological problems:

- As there is currently no traffic at the airport, a theoretical 2012 base year has to be generated based on the latent demand from the core catchment of the City of Plymouth.
- Although there is undoubtedly a latent demand for air transport from Plymouth there is also the necessity of proposing a potential airline operation based at PLH capable of carrying these passengers, on a sustainable basis.

AE has addressed these issues by using the following methodology.

In order to establish a theoretical 2012 base year latent passenger demand from the City of Plymouth, AE used an analysis of traffic volumes and travel patterns in 2008 for Exeter, Bristol and the London Airports, the latest year when the CAA conducted its regular survey of Origin/Destination traffic. For Plymouth and Newquay Airports where CAA surveys are not available, the actual airport traffic was used and the percentage of the City of Plymouth’s Origin and Destination passengers (O/D) was assumed.

Actual traffic volumes seen on domestic services at PLH in 2008 were adjusted to reflect our estimate of passengers originating in or destined for the City of Plymouth – we assumed that 85% of passengers of PLH’s demand was local to this core district of City of Plymouth (the remaining 15% to be drawn from East Cornwall/South Hams/West Devon). In comparison, this percentage is slightly higher than the 79% that Exeter Airport draws from Devon County. This reflects the ability of Plymouth Airport to attract passengers outside of its core catchment given that both Exeter and Newquay Airport flanking at either side of the city offer a broader route network. The 2008 CAA survey data showed that 13% of domestic traffic at Exeter and 1% at Bristol originated from City of Plymouth. There is no CAA survey data for Newquay Airport. As such we have assumed that 90% of its passengers are Cornish O/D, and 10% from Plymouth which we considered a reasonable estimate. This provides us with an estimate of the total City of Plymouth domestic market in 2008, which then has to be adjusted to a 2012 base.

To make the adjustment to 2012 levels we apply discounts equivalent to the 2008-12 declines in domestic traffic at the four airports to the 2008 domestic markets, on average a 38% discount.

---

2 UK CAA Survey 2008
3 In 2008, Newquay Airport produced a Draft Airport Surface Access Strategy which showed a survey of passenger O/D distribution in January and August 2008. It showed on a weighted average basis that 84% of passengers come from Newquay, Falmouth, Truro, Penzance, St Ives and Hayle, Bodmin, Wadebridge and Padstow, St Austell, China Clay, Cambourne, Redruth, Helston while 16% are from ‘Other Areas’. The ‘Other Areas’ would include other parts of Cornwall and may include Plymouth and surrounding areas as well.
We now have an estimate for latent demand for domestic air travel at City of Plymouth in 2012 (see table, below).

Table 4- Demand for Domestic Air Travel from City of Plymouth, 2012

<table>
<thead>
<tr>
<th></th>
<th>Annual Passengers</th>
<th>Annual Passengers (Reallocated)¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Plymouth O/D using Plymouth Airport for domestic air travel</td>
<td>49,586</td>
<td>-</td>
</tr>
<tr>
<td>City of Plymouth O/D using Exeter Airport for domestic air travel</td>
<td>26,033</td>
<td>37,946</td>
</tr>
<tr>
<td>City of Plymouth O/D using Newquay Airport for domestic air travel</td>
<td>22,192</td>
<td>28,193</td>
</tr>
<tr>
<td>City of Plymouth O/D using Bristol Airport for domestic air travel</td>
<td>9,055</td>
<td>40,727</td>
</tr>
<tr>
<td>Plymouth City O/D Latent Demand for Domestic air travel</td>
<td>106,866</td>
<td>106,866</td>
</tr>
</tbody>
</table>

¹ As Plymouth Airport is closed today, these passengers would have used the other airports, as well as alternative modes of transport. Reallocating the estimated City of Plymouth O/D passengers that would have used Plymouth Airport to the remaining airports, based on the 2012 proportion of domestic capacity at these airports, would result in these figures.

The next stage is to project this latent demand forward to 2032. The traffic market forecast is generated by applying traffic multipliers and traffic maturity factors to forecasts of UK GDP. In the short term (2013-17) we use the average of independent annual GDP forecasts as produced by HMRC; in the longer term an annual average of 2.2% p.a.. In summary, the latent demand for the Plymouth domestic market increases from 106,866 in 2012 to 161,317 in 2032, an average growth of 2.1% p.a.

AE then used this “latent” demand to analyse how this demand could be met by an airline network, as PLH will not be able to serve all the destinations and also some of the demand would be going via neighbouring airports. Our assumption is that four main points would comprise the core network: London, Manchester (North England), Glasgow/Edinburgh (Scotland) and Belfast (Northern Ireland). However, it should be noted that some of these main cities are also served from competing airports in the Southwest.
Table 5- Competing Domestic Services

<table>
<thead>
<tr>
<th>Destination</th>
<th>Exeter Airport</th>
<th>Newquay Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belfast City Airport</td>
<td>Daily Flybe</td>
<td>Once a week (Summer only) - Flybe</td>
</tr>
<tr>
<td>Edinburgh Airport</td>
<td>Daily Flybe</td>
<td>Once a week (Summer only) - Flybe</td>
</tr>
<tr>
<td>Glasgow International Airport</td>
<td>5/6 times a week - Flybe</td>
<td>Three times a week (Summer only) – Flybe/Loganair</td>
</tr>
<tr>
<td>Manchester Airport</td>
<td>2-3 times a day - Flybe (Codeshare with Etihad)</td>
<td>Daily Flybe in the summer, lower frequencies in the winter</td>
</tr>
<tr>
<td>London Gatwick Airport</td>
<td></td>
<td>Three times a day - Flybe (to be discontinued in 2014)</td>
</tr>
</tbody>
</table>

Source: Capstats.com

AE assumed the frequencies with 30-seat type aircraft for each of these routes. London flown on a double daily operation, Glasgow served as a through service from Manchester on a double daily operations and Belfast as five times weekly. The load factors assumed on these domestic operations averages at 69%. This compares to the average UK domestic scheduled services load factor of 69.4% in 2012. This produces our airport domestic forecast for traffic on a core airline network. These theoretical airport projections are about 67% of the latent demand forecast.

Table 6- PLH Domestic Passenger Forecast Summary

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2022</th>
<th>2032</th>
<th>2012-32 CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>29,918</td>
<td>37,761</td>
<td>43,779</td>
<td>1.9%</td>
</tr>
<tr>
<td>Manchester</td>
<td>13,692</td>
<td>17,284</td>
<td>21,486</td>
<td>2.3%</td>
</tr>
<tr>
<td>Glasgow</td>
<td>19,940</td>
<td>25,171</td>
<td>31,290</td>
<td>2.3%</td>
</tr>
<tr>
<td>Belfast</td>
<td>7,522</td>
<td>9,495</td>
<td>11,803</td>
<td>2.3%</td>
</tr>
<tr>
<td>Total Domestic</td>
<td>71,073</td>
<td>89,711</td>
<td>108,358</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Note: 2012 as a theoretical starting point
Manchester and Glasgow operated as a tagged service

The next stage is to add in a limited European network. AE considers this operation to be primarily focused on delivering connecting passengers to Euro-hubs for onward connections (as an alternative to travelling to Heathrow by train, for example). AE has used a capacity driven rather than a demand driven approach. AE assumes that a service would be operated to major European hubs (Amsterdam, Paris, Frankfurt, Madrid or Dublin) using 50-seater aircraft at least six times a week with 65% load factors. This compares with Flybe’s achieved load factor of 64% on its scheduled European flights in

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4 CAA UK Airline Statistics, 2012
5 As a minimum to operate a frequent connecting service via an international hub, comparable to Flybe 6 times weekly service to Dublin

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2012\(^2\). Other secondary service operating leisure destinations are also assumed at an average of three times a week. This operation generates the following traffic, with again a GDP driven traffic increase.

**Table 7- PLH European Passenger Forecast Summary**

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2022</th>
<th>2032</th>
<th>2012-32 CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro 1</td>
<td>20,280</td>
<td>26,516</td>
<td>33,018</td>
<td>2.5%</td>
</tr>
<tr>
<td>Euro 2</td>
<td>10,920</td>
<td>14,278</td>
<td>17,779</td>
<td>2.5%</td>
</tr>
<tr>
<td>Total Europe</td>
<td>31,200</td>
<td>40,794</td>
<td>50,797</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Note: 2012 as a theoretical starting point

Again there is an issue of competition with European services operated by Flybe from Exeter. It should be noted that the Plymouth six times a week operation has to be constrained by the existing Exeter operation and the Plymouth network will be at a competitive disadvantage to the dailies offered at Exeter, at least for business travel.

**Table 8- Competing European Services**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Exeter Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam Schiphol Airport</td>
<td>Daily Flybe</td>
</tr>
<tr>
<td>Dublin Airport</td>
<td>6 times a week - Flybe</td>
</tr>
<tr>
<td>Paris Charles De Gaulle Airport</td>
<td>Daily Flybe (Codeshare with Air France)</td>
</tr>
</tbody>
</table>

Source: Capstats.com

Adding the domestic and European forecast, AE arrives at the following forecast for total PLH traffic.

**Table 9- PLH Traffic Forecast Summary**

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2022</th>
<th>2032</th>
<th>2012-32 CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>71,073</td>
<td>89,711</td>
<td>108,358</td>
<td>2.1%</td>
</tr>
<tr>
<td>Europe</td>
<td>31,200</td>
<td>40,794</td>
<td>50,797</td>
<td>2.5%</td>
</tr>
<tr>
<td>Total Airport</td>
<td>102,273</td>
<td>130,505</td>
<td>159,155</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

Note: 2012 is a theoretical starting point

With these air services in place, the airport could be expected to handle 159,155 passengers by 2032. This compares to historical peak traffic levels of 157,933 in 2009. The long-term growth of 2.2% corresponds to the DFT’s unconstrained air passenger growth forecast for the United Kingdom of 2.1% p.a.

The build-up of the forecasted traffic volumes are modest in comparison with the historic peak but they represent, in our opinion, a realistic estimate of potential traffic on a core network at PLH given the existing competition and tax environment. There may be upsides in terms of additional
destinations and increased frequencies, but the key question remains: will a commercially sound operation be established at PLH.

7. Viability of an airline operation at PLH

Because of the current runway restriction (1,160 metres only) there are a limited number of aircraft and airlines suited to PLH.

Table 10 - Aircraft suited to PLH operation

<table>
<thead>
<tr>
<th>Aircraft type</th>
<th>Seats</th>
<th>UK operators (aircraft in fleet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dash 8-300</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>ATR42</td>
<td>50</td>
<td>Aer Arann (4), Blue Islands (4)</td>
</tr>
<tr>
<td>Dash 8-200</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Saab 340B</td>
<td>34</td>
<td>Loganair (14)</td>
</tr>
<tr>
<td>Dornier 328</td>
<td>33</td>
<td>Loganair (6)</td>
</tr>
<tr>
<td>Embraer 120 Brasilia</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Jetstream 41</td>
<td>29</td>
<td>Eastern (17)</td>
</tr>
<tr>
<td>Beechcraft 1900</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>DHC-6 Twin Otter</td>
<td>19</td>
<td>Isles of Scilly Skybus (4), Loganair (2)</td>
</tr>
<tr>
<td>Dornier 228</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>LET 410</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Jetstream 31/32</td>
<td>19</td>
<td>Blue Islands (3)</td>
</tr>
<tr>
<td>Trislander</td>
<td>18</td>
<td>Aurigny (6)</td>
</tr>
<tr>
<td>Islander</td>
<td>9</td>
<td>Isles of Scilly Skybus (3), Loganair (2)</td>
</tr>
</tbody>
</table>

Source: Flight Global

Possible PLH airline operators

Flybe

Flybe reported underlying losses of about £36 million for 2012 and has implemented a consolidation strategy as well as selling slots at Gatwick airport. PLH would be unattractive because an operation there would mean possibly duplicating services that it already flies from Exeter, where it has its headquarters and a large maintenance facility. In a conversation with a senior executive of Flybe, Aviation Economics was told that Flybe believes that it adequately serves the Plymouth catchment area both from Exeter Airport (which is about an hour’s drive time from Plymouth) and from Newquay Airport. It should also be noted that the smallest aircraft in Flybe’s fleet, the Dash 8 Q400 is unable to operate from the existing runway at Plymouth.
Low Cost Carriers (LCCs): easyJet and Ryanair

easyJet would require a runway of at least 1,800 metres to operate A319 aircraft, and Ryanair would require an even longer runway to operate its Boeing 737-800s.

Both easyJet and Ryanair have substantial operations at Bristol and offer good frequencies on UK domestic routes and to EU destinations at low fare levels. easyJet had begun summer-only services from its bases at Southend and Liverpool to Newquay where there is a high leisure summer demand in 2013 but dropped the route for 2014. Recently, Flybe announced its intention to continue this service starting summer 2014. Both easyJet and Ryanair have increasingly focused on providing services from primary rather than secondary airports.

Eastern

Having acquired Air Southwest, it opted to close its Plymouth operations and is highly unlikely to reverse its decision. However, it could be a candidate to provide services to Scottish destinations and possibly Leeds, Newcastle and Norwich with its Jetstream aircraft.

Aer Arann

Now owned by the Stobart Group, Aer Arann has a mandate to provide services from the Stobart owned Southend Airport, and it could be a candidate to provide services from Plymouth to Southend using ATR42 aircraft.

Aurigny

Aurigny operates scheduled services from and within the Channel Islands to the UK and Europe from its base in Guernsey. It is a possible candidate to provide seasonal services to the Channel Islands with its Trislander aircraft. The airline has recently acquired an Embraer 195 jet and has plans to replace its Trislander aircraft.

Loganair

Loganair is a Flybe franchisee and also carries a British Airways code on some routes. It serves Newquay with flights to Glasgow and operates an Exeter to Norwich service, and could be a possible candidate to fly some Scottish routes and maybe some other domestic cities such as Leeds, Manchester and Norwich.

bmi regional

bmi regional is owned by Sector Aviation Holdings Ltd (SAH), with its headquarters in Aberdeen and East Midlands Airport. British Midland sold the business in April 2012 to IAG (British Airways), who then sold bmi regional to SAH in June 2012. bmi regional concentrates on serving niche markets on domestic UK and European routes. The airline currently operates fourteen Embraer 145s with 49 seats and four Embraer 135s with 37 seats.
A possible option for bmi regional would be to fly services to Bristol from Plymouth using Bristol as a connecting “hub”, for example Plymouth-Bristol-Manchester or Plymouth-Bristol-Manchester. This would also provide feed traffic to bmi regional’s six Bristol EU services.

It should be noted that bmi regional does not have an aircraft in its current fleet that can operate from the existing runway at Plymouth.

**Plymouth Airways – a new start-up**

There are precedents for an airport to either acquire an airline or start up a new carrier, for example:

- Aer Arann at Southend was purchased by airport owners the Stobart Group
- EUjet at Manston Airport in Kent for owners PlaneStation, but which went out of business with €40m in debts, forcing EUjet to cease operations

The Viable Business Plan for PLH contains a military/civilian airport operation, a focus on the business market with initially a 19-seater aircraft operations and support from important local businesses.
Route Break-Even Fare Analysis

London Service

In order to demonstrate challenges that an airline needs to overcome to operate out of Plymouth Airport and to gauge the fare levels that would need to be charged for a twice daily Plymouth to London service, we have conducted a route profitability analysis for services to both London Stansted (STN) and London City (LCY) airports. The analysis has been conducted through routepro.net, which delivers a full picture of sector operating costs for almost 3,000 airline/aircraft combinations to over 2,000 airports in the world. The software has been developed over fifteen years and is constantly maintained by a team of analysts to incorporate the latest changes in airline operating costs. The main assumptions used in the route profitability analysis are:

- Annual aircraft utilisation of 2,200 hours
- Overhead costs - 15% of total fixed costs
- Contingency cost - 5% of total fixed costs
- Fuel price of £2.69 per US Gallon
- Historical Plymouth Airport charges (2010-2011)
- No runway operating restrictions (assumes the runway at Plymouth is able to handle aircraft operations as per the different development options).

The results are summarised below – various load factors and aircraft types have been used to highlight the variances in break-even fares which could be expected.
Overall, the analysis shows that the smaller the aircraft used, the higher the fare would need to be in order to reach break-even levels. It is a standard rule that economies of scale exist in the aviation industry so that smaller aircraft have higher costs per available seat kilometre than larger aircraft.

However, using larger aircraft would require higher levels of passenger demand - for example, a 98-seater RJ100 would need a demand of over 100,000 passengers to achieve a break-even one-way fare (excluding APD) of £77 at 65% load factor. Although larger aircraft have lower seat mile costs than smaller aircraft types, there must of course be sufficient levels of demand to justify the use of larger aircraft types.

However, the demand for a London service itself from the Plymouth catchment may not be sufficient to operate large 70+ seater aircraft even though the breakeven one-way fare would be relatively lower (at for example 69,000 annual passengers the break-even point would be at an average one-way fare of £77 per passenger, excluding APD, on an ATR72 type aircraft). In comparison, in 2010, Plymouth Airport's annual traffic to/from London Gatwick was around 60,000 passengers, and a large number of these passengers were then connecting onto flights from Gatwick. However, with long-haul gateway airports such as Gatwick and Heathrow increasingly inaccessible due to runway constraints, it could be a major challenge for a new service to either Stansted or London City to generate a similar level of volume of traffic seen on previous Gatwick services.

At the same time, while London demand can be satisfied using smaller 19-seater aircraft, the average one-way fare would be high; the cheapest aircraft option being the Jetstream 31 could result break-even one-way fare of £132 (excluding APD) assuming a 75% load factor. The addition of APD at today's
rates would mean that passengers would need to pay additional APD taxes of £13 each way, making the one-way fare £145 per passenger.

This compares to the Viable Survey of likely air fare bands for a Plymouth to London service, where the weighted average one-way fare is £63. (Note it is unclear whether this £63 fare includes or excludes APD, though passengers rarely distinguish between separate charging elements which make up a fare and normally respond to the total inclusive ticket price).

From the Viable Survey, a question was asked on the likely air fare band acceptable for flights to London City, nearer to the centre of London. The airport garners a slightly higher weighted average one-way fare of £67 compared to £63 for all London airports. These fares are significantly below the break-even fares for an airline, even at high load factors on the largest aircraft type.

**Figure 13- Highest attractive air fare band for one-way travel to London/London City**

![Graph showing fare bands](source)

A similar analysis of break-even fares flying between Plymouth to London City on a twice daily basis is shown below (once again not including APD).
LCY’s charging structure ultimately penalises smaller aircraft in terms of cost per seat due to a fixed charge per landing, regardless of aircraft size or mass, though conversely can offer cost benefits compared to STN for larger aircraft. However, as discussed, demand may be insufficient to justify the use of larger 50-70 seater aircraft at an acceptable load factor for the twice daily flights.

Furthermore, a check of one-way peak train fares between Plymouth and London (on 9th January 2014) showed fares as cheap as £30 for advanced booking (up to £72 for first class) and £46 for next day booking in standard class (and £149 in first class).

This price competition is the sort of challenge that any new airline would need to face, operating services to a non-hub/long-haul gateway airport in London. It will be a major challenge to find a balance between the local levels of extant demand with the need to have a daily return service at an attractive fare, particularly in an environment where APD taxes and fuel are likely to increase, in addition to ensuring the airline operation is sustainable and economically viable in the long run.

**Manchester Service**

A similar break-even fare analysis has been done for Manchester and Glasgow, two of the potential domestic cities that could be served from Plymouth.
Table 13 - Route Break-Even Analysis Plymouth-Manchester

<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>Seats</th>
<th>55%</th>
<th>65%</th>
<th>75%</th>
<th>85%</th>
<th>Load Factor 55%</th>
<th>65%</th>
<th>75%</th>
<th>85%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beech 1900D</td>
<td>19</td>
<td>139</td>
<td>118</td>
<td>102</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DH6-300</td>
<td>19</td>
<td>293</td>
<td>248</td>
<td>215</td>
<td>190</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do228</td>
<td>19</td>
<td>208</td>
<td>176</td>
<td>153</td>
<td>135</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Let410</td>
<td>19</td>
<td>171</td>
<td>145</td>
<td>125</td>
<td>111</td>
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<td>Jetstream31</td>
<td>19</td>
<td>144</td>
<td>122</td>
<td>106</td>
<td>93</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jetstream41</td>
<td>29</td>
<td>114</td>
<td>97</td>
<td>84</td>
<td>74</td>
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<td></td>
</tr>
<tr>
<td>Dornier 328</td>
<td>31</td>
<td>102</td>
<td>86</td>
<td>75</td>
<td>66</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Saab 340</td>
<td>34</td>
<td>114</td>
<td>97</td>
<td>84</td>
<td>74</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Q200</td>
<td>39</td>
<td>120</td>
<td>102</td>
<td>88</td>
<td>78</td>
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</tr>
<tr>
<td>ATR42500</td>
<td>44</td>
<td>106</td>
<td>90</td>
<td>78</td>
<td>69</td>
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</tr>
<tr>
<td>Q300</td>
<td>50</td>
<td>93</td>
<td>78</td>
<td>68</td>
<td>60</td>
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<td></td>
<td></td>
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<tr>
<td>F50</td>
<td>50</td>
<td>95</td>
<td>81</td>
<td>70</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saab 2000</td>
<td>50</td>
<td>96</td>
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Source: Routepro, Aviation Economics analysis
Note. Fares shown do not including Air Passenger Duty (APD) which would add £13 per one-way flight in economy class.

A daily flight to Manchester would require a demand of between 8,000 to 12,000 annual passengers to break-even for 19-seater aircraft operations. However, break-even fares would range from between £102-£248 each way, for passenger load factors ranging between 65% and 75%.

Flybe operates a 17 times a week service to Manchester using 78-seater Dash-8 (Q400) aircraft from Exeter Airport. Based on our proprietary Airline Fare Database, the average one-way fare for Flybe’s Exeter to Manchester flight was £75 in 2013. As a comparison, this is within the range of a Q400 aircraft’s 65% break-even fare analysed in the table above after including APD charges of £73.

Based on the break-even fare table shown above, in order for a 19-seater operation to be economically sustainable from Plymouth, the fare would on average have to be around double that is available today for a similar Flybe Q400 operation out of Exeter.

In the Viable Survey, a question was asked on how much premium respondents are willing to pay for a domestic service. The result summarised in the graph below showed, based on weighted average, the respondents are willing to pay a premium of £27 one-way.
The willingness of the respondents to pay a fare premium above other competing services from other airports (Exeter in this case) would not be sufficient to address the fare differential gap with a Flybe operation out of Exeter Airport.

Furthermore, it is likely that the competition dynamic will see Flybe react by reducing its fares from Exeter as has historically been the case in the competitive landscape between Newquay, Plymouth and Exeter Airport – for example Flybe initiated a price war when it introduced flights from Newquay to Gatwick which financially damaged Air Southwest's operations.

From the passenger point of view, an offer by Flybe of lower fares would attract leisure passengers while higher frequency offerings would attract more business passengers, even taking account the travel needed to Exeter Airport.

**Glasgow Service**

For a daily operation to Glasgow airport, the break-even one-way fare for a 19-seater operation operating at 65%-75% load factors ranges from £147 - £377.
Based on Innovata schedules, Flybe operates a combination of 6 weekly direct flights from Exeter Airport to Glasgow International Airport and also offers this service via Manchester. Based on our Airline Fare Database, the average one-way fare for Flybe’s Exeter to Glasgow was £75 in 2013. As a comparison, this is lower than the Q400 aircraft 65% break-even fare analysed in the table above.

### Aeronautical Revenues from Scheduled Airline Operations

Notwithstanding the problematic financial viability of airline operations from Plymouth (because of a combination of low demand and the high cost of operations of 19 seater aircraft which in turn requires high average fares to break-even), we then analyse the revenue that the airport itself is expected to generate from a scheduled 19-seater aircraft operation.

Applying the number of passengers that would be expected based on a network of routes from Plymouth that would include London (Stansted) 14 flights a week, and daily flights to Manchester and Glasgow, each operating at a 65% load factor, and using the same charging structure that was in place before Plymouth closed, we estimate that this level of demand would generate around £450,000 in scheduled airline annual income for the airport.

There is no disclosure in the Viable report about the expected level of passengers for a 19-seater scheduled airline option in their airport financial plan. In the 19-seater option, Viable expects airport revenue to total £1.85 million in Year 1.

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**Table 14- Route Break-Even Analysis Plymouth- Stansted**

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Source: RoutePro, Aviation Economics analysis

Note. Fares shown do not including Air Passenger Duty (APD) which would add £13 per one-way flight in economy class.
Viable projects annual income from scheduled commercial air transport of £644,000. Excluding scheduled income from fuel sales and de-icing, the scheduled air transport income for Year 1 is £528,000. This includes an Airport Development Fund (ADF) of £170,000 per annum collected from each passenger departing from the airport. The ADF would of course add towards the overall fare that was analysed in the earlier section of this report which would further increase the level of fares.

Another major source of revenue in the business plan is the revenue from Flag Officer Sea Training (FOST) at £600,000 per annum. The projected estimate for this revenue is higher compared to historical revenue highlighted in the Berkeley Report of £250,000 per year. There is no confirmation on the likely re-establishment of FOST activity at the re-opened Plymouth Airport, and if this was not to resume, this would represent a significant loss of revenue.

To illustrate this, we show below the airport’s gross profit based on Viable’s airport financial plan with the following sensitivities:

- Without FOST revenue
- A 15%-30% lower scheduled revenue (to reflect level of uncertainty on the viability of the scheduled airline operator)
Figure 16- Viable Airport Gross Profit (19-seater option scenario)

It shows that Viable’s airport viability is highly dependent on securing FOST activities to be based at the airport.

AE has met with Sutton Harbour Holdings (SHH), which has a long-term lease on the Plymouth Airport site and was the former owner of the now defunct local airline Air Southwest. AE has also met with Viable, an entity representing a group of local businesses intending to take over the airport and start up a new airline operation there.

SHH stated that it had proved impossible to operate a commercial airline from PLH because of competition from other Southwest airports, the imposition of APD, high unit operating costs and weak underlying traffic demand. SHH could not envisage a sustainable commercial airline operation at the airport, a view supported by an independent study from York Aviation commissioned by SHH. SHH indicated that they would be able to provide route profitability data relating to their operation at PLH to support their contention that any airline operation based there would be unviable, and that the airport site should be converted to alternative use.

The Viable plan, with the extended runway, sees ultimately a fleet of 7 aircraft operating from PLH with 3 daily return flights to Paris Charles De Gaulle (CDG) and 3 daily return flights to London City (LCY) by 2026. With other additional flights, the Viable plan gives a total of 27 daily departures across 20 destinations. Based on this schedule, 1.5 million seats would be available annually and assuming a 65% load factor (representative of a regional UK airport on average), this would translate to around 1 million annual passengers by 2026.
This looks high when compared to our forecast of around 131,000 annual passengers by 2022 and the initial findings by York Aviation\(^6\) which forecasts demand to be between 69,000–150,000 annual passengers by 2023. Aside from the list of aircraft options and provisional schedules, there is not much detail supplied by Viable as regards to how the airline itself is going to develop the market and how it would execute the airline business plan, in such a way that it would become sustainable and profitable, compared to previous regional airlines that have operated before at Plymouth (PLH) and withdrawn. Key to their plans is also purchasing the airport site lease from SHH at a price appropriate to a designated airport operation (whereas SHH’s valuation of the site reflected its use as residential or commercial property).

**Summary**

Based on Viable’s airport business plan (19-seater aircraft option), the viability of the airport mainly depends on serving scheduled airlines and FOST activities. Our analysis has shown that developing a scheduled 19-seater aircraft operation would be commercially challenging. This is because:-

- The level of demand is relatively low.
- The operational restrictions at the airport, limiting the size of aircraft to a 19 seater, leads to high operating costs and as a consequence the requirement to achieve high fares to cover these costs. Using a larger aircraft might hamper an airline’s ability to operate daily frequencies given the low level of demand.

We agree with the statement in the York Aviation Initial Findings Note\(^6\) which says “Furthermore, we highlight that where our economic benefits are derived from scheduled air services (rather than FOST or other general and business aviation activities) these must be caveated by the assumption that a suitable air carrier can be attracted to operate these services. We understand that there are proposals for a dedicated carrier for the South West region (similar to Brymon and Air Southwest) that would be interested in a re-opened airport. There may be some other opportunities, depending on the runway length, but overall the list of carriers that may operate at Plymouth is likely to be limited as the demand levels for any route are likely to be low.”

\(^6\) Plymouth City Airport Initial Passenger Projections and Economic Impact Projections, 29/11/ 2013
Confidential
One option that might be required, given the probability that an airline providing a London service and services to Manchester and Glasgow will struggle to achieve an acceptable level of return, is that an airline is subsidised to operate a service via a Public Service Obligation (PSO), Air Discount Scheme (ADS) or some other arrangement. This would be an additional cost that would need to be borne either by the airport or Plymouth City Council. Further investigation would be required into the likelihood of securing PSO status, particularly on a London route, due to the recent award of PSO status to Newquay (London services).

The level of aeronautical income derived from these services may not cover the operational costs of the airport, particularly if there is no income from FOST. Once again therefore consideration needs to be given as to whether Viable will be able to manage the airport from a financial perspective based on this analysis and whether Plymouth City Council may need to provide additional funding.

Additionally, Aviation Economics would make the following general observations:

- There are a limited number of airline operators in the UK; in the recession some operators have failed, others consolidated;
- The length of runway limits the number of aircraft types that can operate from PLH and it should be noted that many of these types are now out of production;
- The closure of services provided by Air Southwest (as discussed in Section 2) and the total withdrawal from the airport will deter potential investors and financiers;
- Alternative services being provided, particularly by Low Cost Carriers (LCCs), at other South West airports make pricing a factor and airline passengers are prepared to travel significant distances to take advantage of lower fares. As well as lower fares, schedules and/or frequencies will probably be more attractive at Exeter and Bristol;
- Airport charges at regional airports have been under downward pressure as a result of the economic downturn and regional airports are on the whole struggling to make acceptable economic returns;
- The RAF has been consolidating, rather than expanding, operations and extensive use of PLH by the military might be unlikely in the current climate, especially with continued pressures on military budgets;
- Furthermore, it is likely that any attempt to re-establish a FOST base would attract competition from Newquay Airport.
8. Options and conclusions

1. Re-open Plymouth as a fully commercial airport

Continuing with existing infrastructure, the 1,160 metre runway, and a Rescue and Fire Fighting Services (RFFS) Category 5, operations would be limited to 50-seat turboprop aircraft.

Even if traffic levels were to go back to pre-closure levels, which AE considers unlikely in the short to medium term, the traffic volumes will be inadequate for a commercial airline/airport operation, unless an innovative Business Plan is produced. According to SHH, annual losses are still likely to be in the order of £1m annually.

Moreover, with the very low probability that a Gatwick service would be resumed, the key London operation would have to be to unproven airports – Stansted, London City or Southend.

A runway extension to 1,800 metres would permit small jet operations such as an easyJet A319. However, infrastructure investment predicated on an increase in narrowbody operations would be highly risky: it is very unlikely that LCCs would boost traffic volumes significantly at PLH and competition from other Southwest airports would mean that aeronautical yields would be low and LCCs would be able to shift quickly to alternative airports when offered better deals.

2. Re-open Plymouth with a reduced level of RFFS (Category 3)

This would permit scheduled operations but limited to aircraft with 19 seats. Reduced staff costs for both RFFS and for Air Traffic Control (ATC) would lower cost of keeping the airport open, and combined with some military use, could make this option possible, but AE remains concerned that a scheduled 19-seat aircraft operator would not be successful given the high level of cost per seat, competition from competing airports (which are able to offer good levels of frequency and competitive fares, especially from LCCs), and from surface transport to London.

3. Become an unlicensed airfield

This would permit charter flights of up to 9 seats, business aviation, air taxi, aero club, private flights, flight training and military use. The Berkley Hanover report estimated total annual revenues could be around £677,000 p.a. from these operators, with the major contributor being the military. Whilst this option is a lower cost option than the two options discussed above, it would not provide the level of scheduled services that some stakeholders would like to see. Berkley Hanover estimated that the cost of this option would be £425,000 p.a. and therefore it could provide a small surplus.
4. Mothball the airport

Suspending the airport but maintaining the site, while waiting for a favourable change in market conditions, is an option, given that the UK is finally emerging from recession and consumer and business confidence seems to be improving. While mothballed the airport would obviously be generating no income, and Berkley Hanover estimate that the annual cost of keeping the airport in “a reasonable state of repair and available to be re-opened at a later date” to be between £150-250,000 per annum.

One consideration that should be given under this option is whether flights that were once handled by the airport (such as by the military and private operators) would return to Plymouth having found alternative locations in the interim.

A further consideration is the financial health of the major local company, SHH, and the ability to re-invest in returning the airport to operation.

5. New airport

AE’s traffic analysis of latent demand at Plymouth does not support this option. The capital costs of building a new airport (acquisition of land, building of new runway and terminal infrastructure etc.) are very high. Even if funding was found to support the building of a new airport (from central government or the EU) AE does not believe that the level of demand exists from commercial airline operations that would make such an airport economically viable. Perhaps the only circumstances that this option could be considered was if for any reason that Exeter Airport was to close, a circumstance that is highly unlikely as a new operator, Rigby Group Plc, has taken over the running of the airport.
Disclaimer

Information for this report has been obtained from a number of public sources, specialist journals, industry reports, and interviews with industry specialists. Aviation Economics is not responsible for the accuracy of any information provided or obtained from third parties.

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Appendix D

Sutton Harbour Holdings Meeting Minutes
Minutes

Project title: Plymouth Airport Study
Job number: 229666-00

Meeting name and number: Stakeholder Meeting with Sutton Harbour Holdings (SHH) 1/13
File reference:

Location: Tin Quay House, North Quay, Sutton Harbour
Time and date: 2.30pm 30 May 2013

Purpose of meeting: Stakeholder Engagement

Present:
- Jason Schofield (SHH)
- Natasha G (SHH)
- Will Edmonds (Montague Evans)
- Richard Grant (PCC)
- Wayne Dyer (Arup)
- Alex Lake (Fjori Limited)
- Paul Barnard (PCC)
- Andrew Jenkins (Arup)
- Keith McMullan (Aviation Economics - AE)

Apologies:

Circulation: Those present

1.1 Introductions
Introductions were made with roles and responsibilities explained.

1.2 Purpose of Meeting/Background to the Airport Study
PB and RG (PCC) explained that PCC had commissioned Arup to carry out the Plymouth Airport Study.

PB and RG emphasised that the Arup study would be independent and evidence based to support the Plymouth Plan. Engagement with stakeholders is an important part of the study process in order to make the study as comprehensive and inclusive as possible.

PB and RG outlined that the purpose of this initial meeting was to discuss the background to the study, provide an overview of the methodology and the programme for carrying out the work.

PB emphasised that this meeting, and the stakeholder consultation process, was SHH’s opportunity to feed into the study and share information and evidence they felt should be taken into account.

Arup and PCC confirmed that the study will involve consultation with other stakeholders. Arup will provide a list of all stakeholders and the

Prepared by: Andrew Jenkins
Date of circulation: 6th June 2013
Date of next meeting: 6th June 2013

Arup | FS.5
engagement plan to SHH for information.

1.3 Programme

PCC confirmed that the Arup study will feed into the Plymouth Plan. The programme for submission of the Plan to the Secretary of State is mid 2014.

1.4 Methodology

Arup confirmed that the main focus of the study would be to establish whether there is a sound economic case for introducing air services to Plymouth, what the costs and benefits would be at the existing airport site, a new site, or through alternative access to other regional airports.

In summary there a number of key elements to the study:

- Policy review for planning and aviation and the current status of plans for regional city airports in the UK;
- Whether there is demand and an economic case for an airport in Plymouth (based on local city and regional demand for air services);
- The technical and infrastructure constraints and options feasibility of reinstating passenger air services at Plymouth airport (the existing site);
- Consideration of alternative sites for Plymouth Airport; and
- Whether air traffic demand can be met more cost effectively by the use of Exeter Airport with enhanced connections to Plymouth.

JT (SHH) asked whether the study would include a review of the environmental consequences of growth in operations at the current airport site as boundary constraints may limit the viability of the airport. Arup confirmed that the study would involve a high level review of environmental impacts.

1.5 Information Gathering

Arup and AE outlined that the study would benefit from SHH’s past involvement as airport and airline operators. SHH indicated that where possible they would be happy to share data and information that might benefit the study.

AL (Fjori) indicated that there was a recent and comprehensive Fjori report that SHH may consider making available to Arup.

The following was requested:

- Historic traffic data by airline and route for the last 5 years of operation (SHH would review the data they had and requested that PCC review any data they held. Alex Lake suggested that the CAA data is the best available source and Arup/AE agreed);
Minutes

Project title: Plymouth Airport Study
Job number: 229666-00
Date of Meeting: 30 May 2013

**Action**

- Any passenger survey data/catchment area data *(SHH will check available data)*;
- Airport accounts for the last 5 years of operation *(SHH stated that Grant Thornton had inspected the airport accounts and that PCC should have access to data. PB /RG will follow up)*;
- Airport charges (landing fees and any other charges); and
- Access to the site for Arup staff to assess the current condition of the airport site and the need for any infrastructure upgrade. *(SHH confirmed that where possible they would provide the data requested and that a site visit should be arranged through JT at SHH)*.

Arup asked SHH what infrastructure improvements they had considered as a priority in the past. SHH suggested Arup review the 2008 Plymouth City Airport masterplan which was informed by the York Aviation study and detailed proposals for runway length and aircraft stands.

Arup/AE will send SHH a written list of data/information/access requests.

**1.6 Next Steps/Future Meetings**

Once the Arup list of data and information requirements has been issued it was agreed that further discussions may be required to clarify any issues.

Arup raised the prospect of preparing a statement of common ground between PCC and SHH as the study progressed. This idea was met with general acceptance.
Minutes

Project title
Plymouth Airport Study

Job number
229666

Meeting name and number
SHH Fjori Report Update Meeting

File reference

Location
Plymouth Civic Centre

Time and date
09:00  21 May 2014

Purpose of meeting
Update on the Fjori report

Present
Paul Barnard (PCC) Richard Grant (PCC) Andrew Jenkins (Arup), Nick Doyle (Arup) Jon Turner (SHH)

Apologies

Circulation
Those present

Action

1. **Introductions**
   Introductions were made with roles and responsibilities explained. At the outset SHH stated their position that they do not believe the airport to be viable given their experience and what they considered to be a comprehensive aviation study by Fjori.

2. **Background to the Airport Study**

3. RG (PCC) restated the objectives and scope of the Arup study, reaffirming that the Arup study was an independent and evidence based report to support the preparation of the Plymouth Plan. The main focus of the study being to establish whether there is a sound economic case for introducing air services to Plymouth.

4. **Arup’s Update**

5. AJJ gave an update on scope and progress and what information was being considered. AJJ noted that the Arup study included meetings and discussions with stakeholders including SHH, Viable and the Plymouth Chamber of Commerce.

   The study included a policy review for national and local policies on aviation, a demand and operations study undertaken on behalf of Arup by Aviation Economics and an Infrastructure Review considering the current state of the airport and what work would be needed to bring up to operational and CAA standards for a range of operational options. The Arup study will appraise a range of operational options against a

Prepared by
Nick Doyle

Date of circulation

Date of next meeting


set of criteria including demand, costs, revenue, attractiveness to an operator and wider economic benefits to the city. The appraisal process will score each of the options.

6. Arup and PCC were not able to give any indication of the findings of the study as the appraisal is still being finalized.

7. **Fjori Aviation Study**

8. Alex Lake of Fjori gave an overview of the Fjori’s independent Aviation Study. He outlined the physical limitations of the airport, the short runway length in conjunction with historic low demand levels. The previous steps SHH undertook to increase passenger throughput (new flight routes) were also cited as of note. The potential for introducing passenger jets was commented on and specifically the safety risks. Trends in the aviation market and particularly consolidation of airports was cited along with the ability of Plymouth Airport to attract and retain suitable airlines.

9. **Acoustics assessment**

10. A summary was given of the acoustics assessment making reference to a possible phased introduction of new aircraft and intensification of airport usage. Under the operation of the airfield with jet aircraft it was considered that noise impact could be double that of previous operations.

11. **Arup Questions**

12. AJJ raised questions about the Fjori report and in particular the evidence SHH had with regard to past revenue contributions from Flag Officer Sea Training (FOST), and the level of research that had been undertaken with regard to the GA revenues at Plymouth Airport from a range of uses including an air school, business charter flights and air taxi services amongst possible other GA uses.

13. SHH confirmed that they had had discussions with the MoD and FOST in 2007 which indicated that they would not contribute a significant revenue to Plymouth Airport. SHH also noted that FOST seems to be well established at Newquay. SHH noted that the acoustic impact of military aviation would likely be an issue for the residents close to Plymouth Airport.

14. SHH noted that the past GA revenues at Plymouth Airport had been minimal. AJJ asked them if they could substantiate this statement and SHH agreed to provide further information on past GA revenues.

15. Fjori and SHH encouraged Arup to review the CAA’s strategic general review of GA noting that the CAA consider Plymouth to be “congested”.

16. SHH also noted the planning conditions imposed under the original
airport planning application and through a subsequent Section 73 application to vary conditions (page 45 of Fjori’s report) and the potential limitations of the Air Navigation Order act as an factor that should be taken into account in the appraisal process.

17. **Finalisation of Arup Study**

18. Arup will include reference to Fjori report and comments raised by SHH in the final study report.

19. Arup will also take account of SHH comments and evidence on GA use and potential MoD use for Plymouth Airport.
Appendix E

Viable Plymouth Limited Meeting Minutes
Minutes

Project title: Plymouth Airport Study

Meeting name and number: Plymouth Airport – Consultation Meeting

Location: HQ Business Centre, 237 Union Street, Stonehouse, Plymouth, PL1 3HQ

Time and date: 9.00am 24 June 2013

Purpose of meeting: For Plymouth City Council and consultants Arup to meet with Viable and brief them on the Plymouth Airport study and understand their thoughts/proposals for the airport.

Present:
- Richard Crocker (Viable)
- Daniel Gaston (Viable)
- Paul Barnard (PCC)
- Keith McMullan (Aviation Economics)
- Richard Grant (PCC)
- Wayne Dyer (Arup)

Apologies:
- Andrew Jenkins (Arup)

Circulation:
- Those present

Meeting agenda tabled by Arup and PCC and attached to these meeting notes

1. At the start of the meeting Paul Barnard confirmed the extent to which documents we provide would be maintained confidential.

2. Viable explained their proposal to the meeting which centred on the Ministry or Defence being the prime user of the airport in the future through Flag Officer Sea Training (FOST). The airport would receive income from the MoD and from aircraft refuelling. There would also be commercial flights to destinations such as Stansted and Amsterdam Schiphol. Private aircraft would also be able to use the airport. The commercial air traffic would focus on serving passengers who are more concerned with time savings than with cost – the ‘high end’ market. Viable would plan for a phased introduction of services and operations. FOST will be the main income earner in the early days & other income & routes would develop over time.

3. Viable do not consider that Sutton Harbour Holdings have fully considered this mixed operator use of the airport.

4. Viable tabled their masterplan which showed an extended runway.

Prepared by: Jacky Shore
Date of circulation: 2nd August 2013
Date of next meeting: To be confirmed
5. The level and number of discussions Viable has had with local businesses and Plymouth City Council was not confirmed. However, PB of PCC made clear to Viable that as part of the Plymouth Airport study Viable will need to assume that Arup need to be appraised of all plans, information and evidence, in order that Viable’s proposals are fully and objectively considered. In response Viable offered to present the details of their plans to Arup and PCC.

6. Viable noted that, despite their willingness to do so, they have not had any discussions with Sutton Harbour Holdings about the value of the airport site and land acquisition.

7. Viable also noted that they felt the previous Barclay Hanover report had not fully engaged with the local business community as to the future opportunities for the airport. Viable felt that the Barclay Hanover report therefore lacked some legitimacy.

8. Viable noted that the scope of the Barclay Hanover report was limited to considering the economic value of the airport with the very limited connections it had at the time. If the scope had been for a connected city, its results would have been different. Viable also noted that the Barclay Hanover report correctly identified the airport could be profitable under certain scenarios.

9. Richard Crocker agreed to issue a list of contacts that Viable feels should be included in the consultation process. Post meeting note: RC has issued this and the list of contacts is attached to this email.

10. Viable also noted that they were happy to share the results of their recent online survey of local people as to the potential options for the future of the airport.
Minutes

Project title: Plymouth Airport
Job number: 229666-00

Meeting name and number: Plymouth Airport Consultation Meeting 2 with Viable

Location: Creykes Court, The Millfields, Plymouth
Time and date: 9.30 27 August 2013

Purpose of meeting: For Viable to present their business plan for the future operation of Plymouth Airport and to input into Plymouth City Council’s Airport Study

Present: Andrew Jenkins (Arup) Wayne Dyer (Arup)
Paul Barnard (PCC) Richard Grant (PCC)
Richard Crocker (Viable) Dan Gaston (Viable)
Shaun Bridge (Viable)

Apologies:

Circulation: Those present

Action:

1. Viable presented their business plan for the future operation of Plymouth Airport as representation to the Plymouth Plan (presentation attached to these minutes). Viable presented documentation to Plymouth City Council (PCC) and Arup for examination. Viable asked PCC and Arup to consider their presentation and documentation as confidential and this was agreed.

Viable outlined four stages to the development of a commercial operation at Plymouth Airport which would not require any financial support from the council.

The four stages are outlined as follows:

- **Stage 1:** Re-open the airport as a general aviation (GA) airfield with no requirement for Civil Aviation Authority (CAA) licencing. This was understood to be broadly a Year 1 objective. This stage does not make operational profit.

- **Stage 2:** CAA Category 2 licenced airport operation for Flag Officer Sea Training (FOST). This would allow Plymouth Airport operations to break even financially. This was understood to be broadly a Year 2 objective. Viable submitted that FOST want a 10-15 year agreement for an airport site and that they would pay an annual fee of some £600,000 to the airport for their operations. This fee value has yet to be confirmed by Viable who are in
discussion with the Ministry of Defence.

• Stage 3: CAA Category 3 licenced airport with scheduled 19 seater aircraft operation. This was understood to be broadly a Year 3 objective.

• Stage 4: Runway extension to accommodate scheduled aircraft serving London Stansted and European hub airports such as Paris Charles de Gaulle or Amsterdam Schiphol.

Viable stated that they require £4 million for airport operations start up (Stage 1) which includes the buy-out of Sutton Harbour Holdings.

Viable also stated that they had calculated a Year 5 profit of £800,000 which took account of airport operations without the need for a runway extension (up to Stage 3).

Viable noted that they believed their proposition met with the ‘5’ tests as set down by Tudor Evans

Viable noted that they would anticipate receiving income from other airport landside related earnings such as airport related storage, restaurant and events. Viable emphasised that they had not included land sales and subsequent development in their business plan calculations.

Viable stated that any reliance on Exeter Airport to meet the demands of Plymouth and district would be risky given that nobody is sure of the future of Exeter Airport over the next 20-30 years.

Viable accepted that there would be significant costs associated with the development of an Environmental Impact Assessment for the extension of the runway at Plymouth.

The runway extension has been costed at £15m on the assumption that levels are brought up with the use of imported fill generated from the Plymouth construction market.

Viable stated that they had early stage passenger demand and revenue calculations for an extended runway operation. They had also undertaken early stage cost analysis of the runway extension options. However, no economic appraisal of the wider economic benefits to Plymouth and the broader sub region has been undertaken.

Viable has undertaken an online survey which showed that there was demand for an Amsterdam Schiphol (European hub airport) connection. Viable has presented this information to PCC and Arup in the supporting documentation to the meeting and presentation.

WD (Arup) suggested that Viable could strengthen their case by making the wider economic impact case for the airport alongside the commercial case already emerging in the business plan. It was suggested that Viable consider procuring an economic appraisal of the proposals. All impacts, whatever their nature, would be taken into account, including not only "economic" factors like income and employment, but also social, health
and environmental factors, and any other important identifiable effects. Compliance with the HM Treasury Green Book method and approach to economic evaluation would mean that the costs and benefits of the proposals would be presented in a format familiar to the public sector partners interested in the economic benefits of the project. Arup agreed to provide Viable and PCC with an example Green Book brief that they could use as a model.

PB of PCC stated that Viable should develop their evidence base and calculations as the Arup Plymouth Airport Study would be evaluating and documenting facts, and that it was the evidence that would be closely examined should the future of the Plymouth Airport site be considered at a future public inquiry.

PB stated that demand for access to international hub airport services needs to be clearly evidenced and a clear argument as to why the hub connections would benefit the Plymouth economy. A meeting with Julian Beer (Vice Chancellor Plymouth University) to be arranged by PB to explore the University views on developing international hub connections to support the knowledge based industries /Priority Sectors.
Appendix F

Plymouth Chamber of Commerce & Industry Meeting Minutes
Minutes

Project title: Plymouth Airport

Meeting name and number: Plymouth Airport Consultation Meeting with Plymouth Chamber of Commerce.

Location: Chamber of Commerce, Plymouth

Time and date: 3 October 2013

Purpose of meeting: Stakeholder liaison

Present: Richard Grant (Plymouth City Council), Andrew Jenkins (Arup), Wayne Dyer (Arup), Richard Stevens (Chair of Plymouth Chamber of Commerce Transport Committee), Guy Walker (Chair of Plymouth Chamber of Commerce)

Action

1. Richard Grant introduced the Plymouth Airport Study and that Arup has been commissioned to undertake an evidence based appraisal of airport demand, infrastructure requirements and broader economic benefits, and how the study fed into the Plymouth Plan.

2. RG explained that Arup and PCC had met with Sutton Harbour Holdings and Viable to understand the information and evidence they had regarding the airport site and operations.

3. GW and RS stated that they were glad that an evidence based study was being undertaken as there has historically been a lack of hard evidence regarding the past and future use of the airport. They confirmed that the Plymouth CoC was supportive of an airport proposal for the city but that this had to be backed up by a convincing business case.

4. GW and RS on behalf of the Chamber of Commerce offered to provide a list of names across the Plymouth business community so that Arup/PCC can approach them and gain their views on the airport and airline connectivity to Plymouth.

5. GW and RS suggested that there was a limited number of businesses that would find the air link from Plymouth essential, rather than convenient. Business has, to a degree, learned to live without the airport.

6. The poor quality of the rail link from Plymouth to London was raised as an...
issue, although it was noted that flying from Plymouth to London gives only a marginal time saving and is dependent on which airport in London is used.

7. GW and RS noted that there may be demand in north-south airport links through Plymouth.

8. GW and RS suggested that there was interest in the proposal to use small aircraft at Plymouth with a premium quality service for business users, saving time on journeys.

9. GW and RS noted that it is probably not realistic to extend the runway at Plymouth. They questioned why anybody would want to spend millions of pounds on infrastructure improvements when larger aircraft can now use Exeter Airport which is only a 45 minute drive from Plymouth. The best option for Plymouth may be to differentiate the service offering from Exeter and Bristol, and use Plymouth as a low volume/high value airport.

10. GW and RS questioned whether if the airport site was lost to Plymouth, was there ever a realistic possibility of another airport ever opening in the city. They suggested that business was generally happy to see the current airport mothballed to safeguard in case future operations could be started up when the economy picks up. However, there needs to be an understanding of the timescale when a future use of the airport would start up and there is an understanding that the airport cannot be mothballed indefinitely.

11. GW and RS asked whether there was a middle way which permits some development of the airport site that doesn’t prejudice future airport operations. Would this be a possibility that safeguards the airport site.

12. GW and RS stated that there was a need to understand the costs of running an airport operation at Plymouth, in addition to understanding the demand forecasts. They offered to put Arup in touch with Capital Air Charters who are a small airline operation based at Exeter.

13. GW and RS considered that a rapid coach/mini-coach connection between Plymouth and Exeter could be commercially viable but that other alternatives could be considered such as speaking to National Express about diverting their express coach services into Exeter Airport. The issue of road congestion between Plymouth to Exeter or Bristol was raised.

14. It was noted that Exeter Airport historically catered for the tourism/leisure market whereas Plymouth Airport tended to cater for the business community.

15. GW noted that any proposal for future air operations at Plymouth should take into account the issue of all weather resilience and that there needs to be the right equipment to mitigate issues such as fog.
16. GW and RS asked whether public support for airport operations at Plymouth was being considered. RG confirmed that the study would look beyond the benefits of a purely commercial service.

17. WD confirmed that Arup would need to determine which scenarios are realistic in terms of operations and which ones were not. There would need to be a sifting process to identify a long list of airport operational scenarios, moving to a short list of viable scenarios for further detailed assessment.

18. GW and RS confirmed that they will facilitate discussions with the Plymouth business community including an appropriate range of businesses, large through to small, locally based, regionally, nationally and internationally. Arup will draft a list of questions that can be sent to the identified businesses for their input into the process.

19. GW and RS stated that any reference to Plymouth CoC in the Arup report would need to be reviewed by the broader CoC for approval.
Appendix G

Plymouth Chamber of Commerce & Industry Survey Responses
The future of Plymouth Airport and transport connections to the city and region survey results

Responses

Theatre Royal
Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. NO Please state which geographic areas have been impeded?
- Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? NO
- Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. YES If so which regional airports? EXETER
- Would re-established air connections to London be of benefit to your business? OCCASIONALLY
- Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations MANCHESTER
- Would air connections to Europe be of benefit to your business? NO If yes which locations
- Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? NO
- How often would a business like yours use air services at Plymouth if they met your needs? MONTHLY – as we did before the airport closed
- How often does your business currently use other airports, Exeter, Bristol or London? MONTHLY

Wolferstans
- Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? No
- Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
- Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? No
- Would re-established air connections to London be of benefit to your business? No
- Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations No
- Would air connections to Europe be of benefit to your business? If yes which locations No
- Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? No
- How often would a business like yours use air services at Plymouth if they met your needs? Very rarely possibly a couple of times a year, but really the train is perfectly adequate. An “express” rail link is where I would like to see energy being spent. More costs effective, easier to carry out work whilst on board and far more convenient than air travel.
- How often does your business currently use other airports, Exeter, Bristol or London? Very rarely.
Plessey Semi-Conductors
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? Yes, we have to make a lot more train journeys to London (more expensive than flying), also the loss of an early flight to London, sometimes means that it can take a whole day to get to a European destination
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? Yes, Bristol & Exeter
• Would re-established air connections to London be of benefit to your business? Yes
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations Ireland/NW/NE/London
• Would air connections to Europe be of benefit to your business? If yes which locations Germany/France/Holland
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? Most Definitely
• How often would a business like yours use air services at Plymouth if they met your needs? Three to four days per week
• How often does your business currently use other airports, Exeter, Bristol or London? At least 10 days per week

Vickery Holman
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? NO
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? NO
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? NO
• Would re-established air connections to London be of benefit to your business? NO
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations NO
• Would air connections to Europe be of benefit to your business? If yes which locations NO
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? NO
• How often would a business like yours use air services at Plymouth if they met your needs? NO MORE THAN TWO OR THREE TIMES A YEAR
• How often does your business currently use other airports, Exeter, Bristol or London? RARELY

Spinnaker
Spinnaker is a Global leader manufacturing in Saltash employing 120 staff. We manufacture and supply specialist overseas companies with security products. As a company relying on export we therefore need a reliable airport for our business continuity. Sadly Plymouth airport is not the right one for our purposes due to the large number of flights
cancelled and delayed due to fog because of its location. We tried hard to support Plymouth, but its location at the base of the Dartmoor and the weather conditions resulting make it entirely unsuitable as a reliable transport option for any business. My colleagues and I collectively fly on approximately 800 flights every year for business purposes but we are all agreed that these could never be from Plymouth airport in its current location.

Our recommendation would be not to reopen the airport but to extend Exeter instead. This would be the logical solution from our perspective.

Valeport
- Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? - No
- Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? - No
- Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? - Not really
- Would re-established air connections to London be of benefit to your business? - Occasionally
- Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations - Aberdeen
- Would air connections to Europe be of benefit to your business? If yes which locations – Yes, Paris, Rotterdam.
- Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? – In part, yes
- How often would a business like yours use air services at Plymouth if they met your needs? – 10 + times per year
- How often does your business currently use other airports, Exeter, Bristol or London? – 50 + times per year

AMS Plymouth
- Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? Not really, but makes transport more difficult
- Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
- Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? Plymouth airport has been poor in terms of connections for a while, so it has not changed our behaviour. We use Exeter or Bristol primarily, although Newquay sometimes
- Would re-established air connections to London be of benefit to your business? Yes
- Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations Yes London, Manchester primarily
- Would air connections to Europe be of benefit to your business? If yes which locations Yes - Key hub locations - see below
- Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? Yes
- How often would a business like yours use air services at Plymouth if they met your needs? It would vary, but at least weekly on average, sometimes more
• How often does your business currently use other airports, Exeter, Bristol or London? Probably weekly

Mashfords
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? It has changed the way we could do business currently
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No, not feasible as we are a boat yard and restricted by seafront location
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? Using more train travel and Hire cars to commute to London and Scotland for connections.
• Would re-established air connections to London be of benefit to your business? Yes, it would cut down commuter time.
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations Glasgow, Edinburgh, Portsmouth and London
• Would air connections to Europe be of benefit to your business? If yes which locations Gibraltar
• Would air connections, through a major hub airport (such as Schiphol or París), to global destinations be of benefit to your business? Not currently
• How often would a business like yours use air services at Plymouth if they met your needs? 6 - 8 times a year
• How often does your business currently use other airports, Exeter, Bristol or London? 6-8 times a year

Fortescue Garden Trust
The Garden House is a garden open to the public, so the air link probably has only an indirect impact on our business. However, if other businesses are to thrive, an air link London is desirable, and healthy businesses provide employment, income increased standard of living and the wherewithal to enjoy leisure pursuits. We would therefore support the re-opening of the airport.

For personal flyers, an air link to London offered flexibility in travel arrangements and was very convenient. For example, it is now necessary to drive some 50 miles to the east of Exeter to get a flight to the Channel Islands.

Pipex
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? Small inconvenience as we do have people travelling to Glasgow and the link from Plymouth was preferred to travelling to Bristol.
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? Yes, typically drive to Bristol and fly.
• Would re-established air connections to London be of benefit to your business? Small benefit
Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations yes, Glasgow

Would air connections to Europe be of benefit to your business? If yes which locations Amsterdam

Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? small benefit

How often would a business like yours use air services at Plymouth if they met your needs? 5 - 10 times a week

How often does your business currently use other airports, Exeter, Bristol or London? 20-25 times a week

Plymouth University

Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? No

Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No

Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? No

Would re-established air connections to London be of benefit to your business? Yes

Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? Yes If yes which locations BRISTOL/ABERDEEN

Would air connections to Europe be of benefit to your business? If yes which locations AMSTERDAM/PARIS/COPENHAGEN

Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? YES

How often would a business like yours use air services at Plymouth if they met your needs? MONTHLY

Lynher Surveys

Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. YES Please state which geographic areas have been impeded? Access to other business centres in the UK has been impeded, and business lost as a result.

Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? YES

Has the loss of Plymouth Airport changed your air travel behaviours. YES Are you travelling by train or car to other regional airports more frequently. YES If so which regional airports?

EXETER/NEWQUAY/BRISTOL

Would re-established air connections to London be of benefit to your business? YES

Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? YES If yes which locations BRISTOL/ABERDEEN

Would air connections to Europe be of benefit to your business? If yes which locations AMSTERDAM/PARIS/COPENHAGEN

Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? YES

How often would a business like yours use air services at Plymouth if they met your needs? MONTHLY
• How often does your business currently use other airports, Exeter, Bristol or London?

MONTHLY

Careers South West Ltd
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? No
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports?
Yes- some staff travelling to national meetings now need to travel either the day before get up very early and travel to Exeter by car to get a flight to Manchester or even Bristol to Newcastle.
• Would re-established air connections to London be of benefit to your business?
We believe there should be direct flights from the SW to London. The rail line is poor and unpredictable. We note it is closed again for 3 weeks in January / Feb and travellers will have to get a bus connection at Exeter; journey times to London will be over 5 hours each way from Plymouth during that period which includes Mon- Friday. Bad weather frequently causes delays.
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations Yes to a small extent – Sheffield area (Leeds/ Bradford airport), Birmingham, Newcastle and Manchester
• Would air connections to Europe be of benefit to your business? If yes which locations No
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? No
• How often would a business like yours use air services at Plymouth if they met your needs?
If they totally met our needs up to 20 times per year
• How often does your business currently use other airports, Exeter, Bristol or London?
Approx 10 times per year.

Hoare Lee
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? Yes –
  1. Company Board meetings are no longer held in Plymouth due to difficulty to do return journeys by road/rail in same day (London, Manchester, Leeds, Cambridge)
  2. We lost a London client to SW when they could no longer travel from Gatwick or City Airport in same day. Work now undertaken by our London office and skill set transferred over.
  3. Often used air travel for same day monthly trips to London, Manchester, Leeds. Train requires 2 day trip
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No but we have lost business which we previously brought into the region (inc International).
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports?
  Now mainly use train or car, except Manchester when I use Flybe from Exeter.
• Would re-established air connections to London be of benefit to your business?
  Yes major benefit. The sooner its returned the better so we can try and regain lost business back in Plymouth and restore annual Board meetings.
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations

- Would air connections to Europe be of benefit to your business? If yes which locations
  No less so for business, but easier connection to major capital cities would open
  opportunities.
  Yes for leisure opportunities – as above.
- Would air connections, through a major hub airport (such as Schiphol or Paris), to global
  destinations be of benefit to your business? Yes
- How often would a business like yours use air services at Plymouth if they met your needs?
  When Air South West were in operation we had at least two or three return flights a week
  for whole office (36 staff)
- How often does your business currently use other airports, Exeter, Bristol or London?
  Exeter – occasionally for flights to Edinburgh and Manchester

Name of company withheld as requested
Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded?
The loss of the airport hasn’t changed the way we do business, although it has meant that our staff
have used alternative transport, including train, car and flying out of alternative airports.

Has the loss of Plymouth Airport made your business consider relocating away from Plymouth?
No

Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or
car to other regional airports more frequently. If so which regional airports?
Yes, staff are using Bristol airport and travelling by train to London.

Would re-established air connections to London be of benefit to your business? Yes, it would be
very useful to us.

Would re-established air connections to the rest of the UK and Ireland be of benefit to your
business? If yes which locations The London link is most useful to us.

Would air connections to Europe be of benefit to your business? If yes which locations Links to
major capital cities within Europe would be useful.

Would air connections, through a major hub airport (such as Schiphol or Paris), to global
destinations be of benefit to your business? Yes – our staff regularly travel to the US and UAE.

How often would a business like yours use air services at Plymouth if they met your needs?
Regularly.

How often does your business currently use other airports, Exeter, Bristol or London? All of these
airports are used by staff.

Marine Academy Plymouth
- Has the loss of Plymouth Airport changed the way you do business with other regions of the
  UK and overseas. Please state which geographic areas have been impeded? No
- Has the loss of Plymouth Airport made your business consider relocating away from
  Plymouth? No
- Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by
  train or car to other regional airports more frequently. If so which regional airports? No
- Would re-established air connections to London be of benefit to your business? No
Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations No
Would air connections to Europe be of benefit to your business? If yes which locations No
Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? No
How often would a business like yours use air services at Plymouth if they met your needs? Once maybe twice per year to travel to London
How often does your business currently use other airports, Exeter, Bristol or London? Zero

Nuffield Health
Whilst the closure has not affected our business too much, we need to point out that the majority of staff here used to use Plymouth as a hub to get to other UK airports for their holidays. We would also look to bring business from Jersey/Guernsey to the hospital if we could fly patients for some type of surgery into Plymouth (we were investigating this when the airport closed).

Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? No
Would re-established air connections to London be of benefit to your business? If yes which locations Leeds, London, Glasgow
Would air connections to Europe be of benefit to your business? If yes which locations No
Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? No
How often would a business like yours use air services at Plymouth if they met your needs? Once a month
How often does your business currently use other airports, Exeter, Bristol or London? Rarely

Future Inns
Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? Yes it has we had a lot of guests that came from Newcastle and London that now do not use the hotel at all they use Skype to conduct business.
Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No
Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports?
We now have to use Exeter airport – I travel to Manchester for Business this puts an extra hour on my journey each way.
Would re-established air connections to London be of benefit to your business? Yes a huge benefit
Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations Yes – Newcastle, Cardiff, Bristol and Manchester
Would air connections to Europe be of benefit to your business? If yes which locations Yes Poland
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business?
  Yes this would encourage leisure guests to our hotel
• How often would a business like yours use air services at Plymouth if they met your needs?
  Every week
• How often does your business currently use other airports, Exeter, Bristol or London?
  Every week

**Midas Group**

• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? **No**
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? **No**
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? **No**
• Would re-established air connections to London be of benefit to your business? **Yes**
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations **London**
• Would air connections to Europe be of benefit to your business? If yes which locations **No**
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? **No**
• How often would a business like yours use air services at Plymouth if they met your needs? **Monthly**
• How often does your business currently use other airports, Exeter, Bristol or London? **Very seldom**

**Plymouth Community Healthcare**

As a large community provider of healthcare services, we are committed to the City and as such, have limited requirements to travel outside of the UK. However, we do have many events, clinical reviews and meetings that require travel to other parts of the UK, where access to air travel would be a useful alternative to rail or travel by car. Having used the airport for travel to London on a number of occasions, the link was convenient, relatively cost effective and limited the time away from base.

As a business, we have used services at Exeter airport in the absence of a local presence.

**Centrica Langage Limited**

• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. Please state which geographic areas have been impeded? **Yes, I used to fly into Leeds, London City (used to transfer to Switzerland), London Gatwick (used to transfer to Switzerland) from Plymouth airport.**
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? **No, we’re a static business and so have no choice.**
• Has the loss of Plymouth Airport changed your air travel behaviours. Are you travelling by train or car to other regional airports more frequently. If so which regional airports? **I now drive much more and sometimes use the train to reach the locations that I need to travel to (London, Leeds & various other locations within the UK). I now have to travel to Gatwick airport to transfer to Switzerland, which I need to travel to several times per year.**
• Would re-established air connections to London be of benefit to your business? Absolutely yes.
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? If yes which locations Yes, Leeds would be the most beneficial to me.
• Would air connections to Europe be of benefit to your business? If yes which locations Yes, any transfer airport to Switzerland would be very advantageous to my business.
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? Schiphol would be great as it has transfers to Switzerland.
• How often would a business like yours use air services at Plymouth if they met your needs? We would use Plymouth airport as we used to, several times per month.
• How often does your business currently use other airports, Exeter, Bristol or London? Now that Plymouth airport is no longer available, we do not use Exeter or Bristol airports as it is not economic to do so and do not offer the same flight connections as Plymouth used to. The only airport we use now is Gatwick, for it’s transfers to Switzerland.

Sutton Harbour Holdings PLC
• Has the loss of Plymouth Airport changed the way you do business with other regions of the UK and overseas. No Please state which geographic areas have been impeded? Not applicable
• Has the loss of Plymouth Airport made your business consider relocating away from Plymouth? No. There are airports close by at Exeter, Newquay and Bristol which can be used with far better connections and facilities.
• Has the loss of Plymouth Airport changed your air travel behaviours. No Are you travelling by train or car to other regional airports more frequently. Not applicable If so which regional airports? Not applicable
• Would re-established air connections to London be of benefit to your business? Not directly. Our business would benefit from a higher volume of visitors choosing Plymouth as a destination. An international airport that can accommodate these jets would be beneficial. Therefore, a new site for a Plymouth airport would be required. A more sensible approach would be to work with Exeter Airport to rebrand itself as Devon’s International Airport and install direct, rapid transportation links between Exeter Airport and Plymouth which currently do not exist.
• Would re-established air connections to the rest of the UK and Ireland be of benefit to your business? Please see response above If yes which locations Please see response above
• Would air connections to Europe be of benefit to your business? Please see response above If yes which locations Please see response above.
• Would air connections, through a major hub airport (such as Schiphol or Paris), to global destinations be of benefit to your business? Please see response above
• How often would a business like yours use air services at Plymouth if they met your needs? No direct requirement.
• How often does your business currently use other airports, Exeter, Bristol or London? We don’t.
Appendix H

Civil Aviation Authority Consultation
Dear Mr Doyle

Plymouth City Airport Study – Request for information from the Civil Aviation Authority (CAA)

Thank you for your letter of 6 August 2014 regarding Plymouth City Airport. I have responded to your questions in turn.

1. The term 'congested area' is defined in the Air Navigation Order 2009, specifically in Article 255. The CAA does not routinely record whether aerodromes are located in congested areas as part of the licensing process as it is not part of the licensing criteria. Plymouth City Council would need to assess the environment around the aerodrome to see if it meets the criteria in the definition.

2. The requirements for an Aerodrome Licence are detailed in Article 211 of the Air Navigation Order 2009 and the types of flights required to use licensed aerodromes are detailed in Article 208. In general, fixed wing public transport flights are required to use licensed aerodromes in the UK but private flights are not. As you have noted Rule 6 of the Rules of the Air Regulations 2007 provides certain exemptions from the low flying prohibitions and some of these exemptions apply to licensed aerodromes. With this in mind the owner of the land at the former Plymouth City Airport could in theory operate it as an unlicensed aerodrome, depending upon the types of flights they wish to accommodate. Any local authority planning restrictions are outside the remit of the CAA.

3. It is common for licensed aerodromes to have in place 'variations' to the licensing criteria where the full regulatory standards cannot be met, normally due to geographical limitations. These variations are agreed by the CAA subject to the airport submitting a satisfactory safety assessment for operation. In the case of a new licence any non-compliances with CAP168 criteria would be considered at the time of application. Variations applied to a previous licence would not automatically be reapplied.

4. The 10% policy is no longer applied by the CAA for new licence applications. A new application would need to meet the declared distance and associated obstacle...
limitation criteria detailed in CAP168. From 1 January 2015 it may be that an aerodrome would require certification in accordance with Commission Regulation (EU) No 139/2014. The criteria for aerodromes that would fall into this requirement are detailed in Regulation (EC) No 1108/2009 of the European Parliament and of the Council.

Yours sincerely

Mark Stevens
External Response Manager
6 August 2014

Dear Sir / Madam

Plymouth City Airport Study – Request for information from the Civil Aviation Authority

Arup has been commissioned by Plymouth City Council to prepare an Options Assessment to inform the Plymouth Local Plan, having specific regards to the long term future of Plymouth City Airport.

In order to prepare a robust assessment of the future of Plymouth Airport, we are writing to request information from the Civil Aviation Authority (CAA) concerning the matters as listed below.

1. Please can you confirm that the former Plymouth City Airport is located in a ‘congested area’ as defined by the Civil Aviation Air Navigation Order (ANO) 2009.

2. The Rules of the Air Regulations (RoAR) 2007, Section 3 Low Flying Rule, Low flying prohibitions, 5. Para (3) (c) states:

   “The 1,000 feet rule – Except with the written permission of the CAA, an aircraft flying over a congested area if a city or settlement shall not fly below a height of 1,000ft.”

Section 3 Low Flying Rule, Exemption to the low flying prohibition, 6 (a) states:

   “any aircraft shall be exempt from the low flying prohibitions in so far as it is flying in accordance with normal aviation for the purposes of taking off from, landing at or practicing approaches to landing at a Government or licensed aerodrome.”

Under provision of the RoAR 2007, can you please confirm whether Plymouth City Airport would require to be CAA licensed to undertake aviation activities (meeting the requirements of CAP168), or whether Plymouth City Airport could operate as an Unlicensed Airfield.
3. The former Plymouth City Airport operated under dispensations and specifically a licence variation for the Runway End Safety Areas (RESA). Can you please confirm that these dispensations / licence variations were revoked by the CAA following the closure of Plymouth City Airport in 2011. Please can you advise also on the likelihood of re-application of these dispensations / variations should an application for a new operation licence for Plymouth City Airport come forward to the CAA.

4. The CAA has previously granted licences for airports with a Code2 runway and allowed a 10% enhancement on the declared distance of the runway to permit a Take-Off Distance Available (TODA) of up to 1,319m without the airport having to meet Code3 runway standards as set out in CAP168 licencing of Aerodromes. On this basis can you please confirm that Plymouth City Airport could be licenced to Code 2C runway standards with a TODA of no greater than 1,319m.

Your assistance with the above matters would be appreciated. Should you have any queries regarding this request then please do not hesitate to contact me.

Yours sincerely

Nick Doyle
Planner | Consulting West
Appendix I

Glossary of Terms
## Glossary of Terms

### Accelerate – Stop Distance Available (ASDA)
- The distance from the point on the surface of the aerodrome at which the aeroplane can commence its take-off run to the nearest point in the direction of take-off at which the aeroplane cannot roll over the surface of the aerodrome and be brought to rest in an emergency without the risk of accident.

### Aerodrome/Airport
- A defined area on land (including buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure or surface movement of aircraft.

### Aeroplane
- A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

### Aircraft
- Any machine that can derive support in the atmosphere from the reactions of air other than by the reactions of air against the earth’s surface.

### Apron
- A defined area on a land aerodrome provided for the stationing of aircraft for the embarkation and disembarkation of passengers, the loading and unloading of cargo, fuelling, and for parking.

### Cleared and Graded Area (CGA)
- That part of the Runway Strip cleared of all obstacles except for minor specified items and graded, intended to reduce the risk of damage to an aircraft running off the runway.

### Clearway
- An area at the end of the take-off run available and under the control of the aerodrome licence holder, selected or prepared as a suitable area over which an aircraft may make a portion of its initial climb to a specified height.

### Critical Area
- An area of defined dimensions extending about the ground antennae of a precision instrument approach equipment within which the presence of vehicles or aircraft will cause unacceptable disturbance of the guidance signals.

### Declared Distances
- The distances declared by the aerodrome authority for the purpose of application of the requirement of the Air Navigation (General) Regulations in respect of aeroplanes flying for the purpose of public transport.

### Frangibility
- The ability of an object to retain its structural integrity and stiffness up to a specified maximum load but when subject to a load greater
than specified or struck by an aircraft will break, distort or yield in such a manner as to present minimum hazard to an aircraft.

**Instrument Runway**

A runway intended for the operation of aircraft using non-visual aids providing at least directional guidance in azimuth adequate for a straight-in approach.

**Landing Area**

That part of a movement area intended for the landing and take-off of aircraft.

**Landing Distance Available (LDA)**

The distance from the point on the surface of the aerodrome above which the aeroplane can commence its landing, having regard to the obstructions in its approach path, to the nearest point in the direction of landing at which the surface of the aerodrome is incapable of bearing the weight of the aeroplane under normal operating conditions or at which there is an obstacle capable of affecting the safety of the aeroplane.

**Manoeuvring Area**

That part of an aerodrome provided for the take-off and landing of aircraft and for the movement of aircraft on the surface, excluding the apron and any part of the aerodrome provided for the maintenance of aircraft.

**Movement Area**

That part of an aerodrome intended for the surface movement of aircraft including the manoeuvring area, aprons and any part of the aerodrome provided for the maintenance of aircraft.

**Non-Instrument Runway**

A runway intended for the operation of aircraft using visual approach procedures.

**Non-precision approach runway**

An instrument runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach.

**Obstacle**

All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight, or that stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.

**Obstacle Free Zone**

A volume of airspace extending upwards and outwards from an inner portion of the Runway Strip to specified upper limits which is kept clear of all obstructions except for minor specified items required for air navigation purposes, of low mass and francibly mounted.
PLH  
The Code assigned to the former Plymouth City Airport code was PLH

Precision Instrument Approach Runway  
An instrument runway intended for the operation of aircraft using precision instrument approach aids that meet the Facility Performance requirements defined in ICAO Annex 10 appropriate to the Category of Operations.

Runway  
A defined rectangular area, on a land aerodrome prepared for the landing and take-off run of aircraft along its length.

Runway End Safety Area (RESA)  
An area symmetrical about the extended runway centreline and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway.

Runway Strip  
An area of specified dimensions enclosing a runway intended to reduce the risk of damage to an aircraft running off the runway and to protect aircraft flying over it when taking-off or landing.

Runway Threshold  
The beginning of that portion of the runway usable for landing.

Stopway  
A defined rectangular area beyond the end of the TORA, suitably prepared and designated as an area in which an aeroplane can be safely brought to a stop in the event of an abandoned take-off.

Take-off Distance Available (TODA)  
Either the distance from the point on the surface of the aerodrome at which the aeroplane can commence its take-off run to the nearest obstacle in the direction of take-off projecting above the surface of the aerodrome and capable of affecting the safety of the aeroplane, or one and one half times the take-off run available, whichever is the less.

Take-off Run Available (TORA)  
The distance from the point on the surface of the aerodrome at which the aeroplane can commence its take-off run to the nearest point in the direction of take-off at which the surface of the aerodrome is incapable of bearing the weight of the aeroplane under normal operating conditions.

Taxiway  
A defined path on a land aerodrome established for the taxying of aircraft and intended to provide a link between one part of the aerodrome and another, including:

a) Aircraft stand taxilane: A portion of an apron designated as a taxi route intended to provide access to aircraft stands
b) Apron taxiway: A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

c) Rapid exit taxiway: A taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times.

**Taxiway Strip**

An area of specified dimension enclosing a taxiway and intended to protect aircraft operating on the taxiway and to reduce the risk of damage to an aircraft running off the taxiway.
Appendix J

Supplementary Paper
Plymouth City Airport Options: Infrastructure Cost Estimates
This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 229666
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1 Introduction

This supplementary paper identifies estimated infrastructure cost for theoretical options for re-establishing air services at the former Plymouth City Airport. This supplementary paper should be read in conjunction with the Plymouth Airport Infrastructure Review\textsuperscript{1} and the Plymouth City Airport Study\textsuperscript{2}.

It should be noted that:

- Option 4 in this paper corresponds with Option 4 in the Plymouth City Airport Study;
- Option 4a in this paper corresponds with Option 5 in the Plymouth City Airport Study; and
- Option 5 in this paper corresponds with Option 7 in Plymouth City Airport Study.

2 Option 4 – Licensed Aerodrome (scheduled operations with 19 seat aircraft)

Option 4 is based on the same principles and assumptions as Option 1 (as described in the Infrastructure Review for Plymouth Airport), with displaced runway thresholds to maximise TODA to 1,167m, 90m RESAs at both ends and a small expansion of the runway paved area. Option 4 is a licensed aerodrome that facilitates scheduled passenger operations by small aircraft up to 19 seats with an RFFS category of 3. We have not been provided with specific design aircraft and therefore are not able to conduct runway length calculations. It is assumed that aircraft using the runway will operate with appropriate payloads and ranges for the runway length, and will comply with runway pavement strength limitations.

Option 4 assumes that the existing passenger terminal will be refurbished to accommodate the scheduled traffic, including equipment such as passenger and baggage screening and baggage reclaim roller systems, however with a lower passenger demand than Option 1. The existing terminal accommodated a greater demand than is anticipated for Option 4, so the existing footprint should provide sufficient space for both passenger processing and airport offices. The refurbishment of office space in Option 1 has therefore been excluded from Option 4.

RFFS category 3 only requires one crash tender. As the existing tender previously served the airport operating at RFFS category 5, it is assumed that the existing tender can be modernised to meet the current performance standards required.

PCA historically experienced low visibility on a frequent basis; therefore it is assumed that a commercial operator would require precision approach aids to minimise the level of disruption to regular operations. The provision and scope of navigational aids is a commercial decision largely based on an acceptable level of disruption to the airline operators, however

\textsuperscript{1} Review of Plymouth City Airport: Infrastructure Review, Arup, 2014
\textsuperscript{2} Plymouth Airport Study, Options Assessment, Arup 2014
in lieu of engagement with potential air operators it is assumed that the existing ILS would be recalibrated and provided in the predominant direction of operations.

There may be an opportunity to provide precision approach without any physical infrastructure or capital cost to the airport: EASA and the UK CAA are currently trialling precision approaches using emerging GPS technologies which could be an option for PCA (subject to CAA approval, aircraft navigational equipment and airline acceptance). However without CAA and airline operator engagement it is not possible to advise on the feasibility of replacing ILS with GPS approaches.

### Category Assumption

<table>
<thead>
<tr>
<th>Category</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal</td>
<td>Refurbishment of existing terminal, excluding office space</td>
</tr>
<tr>
<td>RFFS</td>
<td>Cat 3 – One crash tender, three staff</td>
</tr>
<tr>
<td>Runway instrumentation</td>
<td>ILS Cat I (in one direction), PAPI, VDF, DME</td>
</tr>
</tbody>
</table>

### 3 Option 5 – Unlicensed Aerodrome (Charter, Business Aviation and General Aviation)

Option 5 is based on the same principles and assumptions as Option 1, with displaced runway thresholds to maximise TODA to 1,167m, 90m RESAs at both ends and a small expansion of the runway paved area. It is intended to be an unlicensed aerodrome that facilitates charter, business aviation and general aviation flights by small aircraft up to 9 seats, with an RFFS category of 2. We have not been provided with specific design aircraft and therefore are not able to conduct runway length calculations. It is assumed that aircraft using the runway will operate with appropriate payloads and ranges for the runway length, and will comply with runway pavement strength limitations.

Option 5 assumes that no capex will be spent by the airport operators on maintaining the terminal building as each operator would have specific requirements and relatively low demand. It is expected that Charter/business aviation/GA companies would lease land and/or buildings and would therefore have a few options for providing infrastructure at the airport at their own expense:

- Lease, refurbish and fit out a portion of the terminal building
- Lease, refurbish and fit out an ancillary or off-site building e.g. the old maintenance hangar
- Build and fit out a new building

RFFS category 2 only requires one crash tender. As the existing tender previously served the airport operating at RFFS category 5, it is assumed that the existing tender can be modernised to meet the current performance standards required. Operationally, RFFS category 2 will cost less than category 3 as it requires one less member of personnel. As an unlicensed aerodrome there is an opportunity to operate without providing RFFS facilities; however this would require further investigation and discussion with the aerodrome users.

It is assumed that without scheduled operations there is less likely to be a strong financial case for providing precision approaches. Option 5 capex has an allowance for the recalibration of the VDF, DME and PAPI equipment as basic navigational aids only, with no
ILS provision. As discussed in Option 4 there may be opportunity to provide GPS based precision approaches without capital investment, but this would require further investigation.

<table>
<thead>
<tr>
<th>Category</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal</td>
<td>No capex allowance, operating companies to fund if required</td>
</tr>
<tr>
<td>RFFS</td>
<td>Cat 2 – One crash tender, two staff</td>
</tr>
<tr>
<td>Runway instrumentation</td>
<td>PAPI, VDF, DME</td>
</tr>
</tbody>
</table>

4  **Option 4a – Licensed Aerodrome (Charter, Business Aviation and General Aviation)**

Option 4a is a hybrid option based on Option 4 and Option 5, with a licensed aerodrome to facilitate charter, business aviation and general aviation flights by small aircraft up to 9 seats, with an RFFS category of 2. We have not been provided with specific design aircraft and therefore are not able to conduct runway length calculations. It is assumed that aircraft using the runway will operate with appropriate payloads and ranges for the runway length, and will comply with runway pavement strength limitations.

As a hybrid option, 4a assumes that the existing terminal will be refurbished, however equipment such as passenger screening and baggage will not be provided as they are unlikely to be required for this scale of operations. Furthermore, there should be sufficient space in the terminal footprint to provide offices if required, therefore the office area refurbishment has not been included.

RFFS category 2 only requires one crash tender. As the existing tender previously served the airport operating at RFFS category 5, it is assumed that the existing tender can be modernised to meet the current performance standards required. Operationally, RFFS category 2 will cost less than category 3 as it requires one less member of personnel.

For Option 4a, it is difficult to predict if there is likely to be a business case or requirement for precision approach. To this end, two scenarios have been created: the “Preferred” scenario with ILS precision approach in order to minimise operational disruption in low visibility conditions, and the “Cutback” scenario with the reinstatement of the VDF/DME/PAPI only, which could limit operational days.

<table>
<thead>
<tr>
<th>Category</th>
<th>Assumption “Preferred”</th>
<th>Assumption “Cutback”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal</td>
<td>Refurbishment of envelope, interiors, services etc., excluding equipment and office space.</td>
<td></td>
</tr>
<tr>
<td>RFFS</td>
<td>Cat 2 – One crash tender, two staff</td>
<td></td>
</tr>
<tr>
<td>Runway instrumentation</td>
<td>ILS Cat I (in one direction), PAPI, VDF, DME</td>
<td>PAPI, VDF, DME</td>
</tr>
</tbody>
</table>
5 Capex

In this section the capital investment levels required to deliver development options 4, 4a and 5 outlined above are presented, and compared against the previous Option 1. Capital cost estimates are presented in real terms based on 2013 construction prices.

It should be noted that no design work has been undertaken for the concepts presented; therefore capital investment is based on block and master plan concepts. As a result there is a high level of cost uncertainty in the capex and these should be considered as order of magnitude estimates only.

5.1 Assumptions

In order to establish the capital investment estimates a number of assumptions have been made in relation to infrastructure, facilities and general conditions at the airport:

- Utilities can be simply re-commissioned with no requirement to refurbish, upgrade or replace.
- A conservative allowance has been made for refurbishment works to the existing terminal building (options 4 and 4a) and covers the provision of new services, interiors and a minor allowance for some works to the external building envelope.
- Runway resurfacing works will be undertaken prior to aircraft operation, some drainage groove cutting will be required and it is assumed that the runway surface will be planed before overlay applied to maintain existing runway elevations.
- Extent of work required to the ILS system is not fully understood at this time, a provisional sum of £250k has been allowed to cover re-commissioning of this (including re-calibration) for options 4 and 4a “Preferred”.
- Allowance for refurbishment of RFFS Station primarily intended to replace furniture, fittings and equipment.
- The airport will need to comply with the latest EU standards for hold baggage screening. It is assumed that a stand-alone small-bore standard 3 HBS device will be appropriate to meet comply with the requirements. (Option 4 only).
- Based on future passenger demand there will be no requirement to expand the passenger terminal facilities at the airport.
- We understand that the airport operator has a number of replacement aeronautical ground lighting fittings in storage so we have only made a small allowance for replacement of broken fittings. No allowance has been made for significant replacement of the systems themselves.

5.2 Exclusions

As a result of limited information and based on the preliminary nature of the master plan and concepts there are a number of exclusions in the capex that should be understood.

The list below provides for reference an outline of exclusions for each of the options:

- Cost associated with aerodrome licensing and other operating permits.
- Reinstating or installing navigational aids (radar/ DVOR) – as far as we are aware Plymouth airport does not have this equipment.
- New ILS system – it is assumed that the existing system can be reinstated but this will need validation by a navigational aids specialist.
- New airside vehicles (other than rescue and crash tender) many of the airside vehicles, such as tow tractors, fuel bowsers, baggage trucks etc. are assumed to be provided by airlines and other third parties.
- Site wide security (CCTV, fencing & gates).
- Site access roads (not considered necessary as this is an existing airport).
- Aircraft stand equipment such as stand entry guidance systems, fixed electrical ground power or hydrant refuelling all of which are not considered necessary for this airport.
- Works to the control tower.
- No allowance has been made for refurbishment of the fuel farm, it is assumed that this is not necessary or will be undertaken by a third party concessionaire.
- No allowance made for refurbishment or redevelopment of aircraft maintenance hangars this is assumed to be a third party or tenant cost.
- Works associated with redevelopment/ expansion of car parks.
- Works associated with adjusting runway lighting if required.
- Aerodrome insurance.

5.3 Quantities

Quantities and size of required works have been established on the following basis:
- Measurement of existing areas, pavements, terminal, ancillary facilities and other facilities and areas;
- Assessment of additional pavement areas/ other facilities required for expansion as identified in the options above;
- Assumptions, based on visual assessment, of areas to be refurbished/ upgraded or replaced.

5.4 Unit Rates

Unit rates are based on our experience of similar UK projects, benchmarks and reference to other airport costs models for buildings, pavements and other facilities. Unit rates are then adjusted to take account of specific local conditions in the South and South West of England. It has been assumed that rates in Plymouth are around 97% of UK average rates and 95% of Greater London Rates.
5.5 Capex

The chart below shows the total estimated capex for each of the options. Compared to the Option 1, the previous Do-Minimum:

- Option 4 is around £1.2m cheaper at £8.7m with the cost savings being found by not refurbishing the airport offices and by reducing the RFFS category (ancillary facilities).

- Option 4a “Preferred” is around £2m cheaper with cost savings found by not refurbishing the airport offices or fitting out the terminal with equipment and by reducing the RFFS category (ancillary facilities).

- Option 4a “Cutback” is around £2.1m cheaper. It is the same as 4a “Preferred”, but without the reinstatement of the ILS.

- Option 5 is around £4.5m cheaper, with no allowance for terminal expenditure, no reinstatement of the ILS and a reduction of RFFS category (ancillary facilities).

The table below shows a summary of the estimated capital cost for each option by infrastructure element.

<table>
<thead>
<tr>
<th>Element</th>
<th>Option 1</th>
<th>Option 4</th>
<th>Option 4a &quot;Preferred&quot;</th>
<th>Option 4a &quot;Cutback&quot;</th>
<th>Option 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabling Works</td>
<td>280,000</td>
<td>280,000</td>
<td>280,000</td>
<td>280,000</td>
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</tr>
<tr>
<td>Terminal Expenditure</td>
<td>2,813,400</td>
<td>2,250,600</td>
<td>1,707,600</td>
<td>1,707,600</td>
<td>-</td>
</tr>
<tr>
<td>Airside Infrastructure</td>
<td>2,839,675</td>
<td>2,839,675</td>
<td>2,839,675</td>
<td>2,764,675</td>
<td>2,764,675</td>
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<tr>
<td>Ancillary Facilities</td>
<td>420,000</td>
<td>120,000</td>
<td>120,000</td>
<td>120,000</td>
<td>120,000</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>600,000</td>
<td>600,000</td>
<td>600,000</td>
<td>600,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Contractors Preliminaries</td>
<td>869,134</td>
<td>761,284</td>
<td>693,409</td>
<td>684,034</td>
<td>470,584</td>
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<tr>
<td>Professional fees</td>
<td>301,038</td>
<td>554,728</td>
<td>547,228</td>
<td>376,468</td>
<td>376,468</td>
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<tr>
<td>Risk / Contingency</td>
<td>1,390,615</td>
<td>1,218,055</td>
<td>1,109,455</td>
<td>1,094,455</td>
<td>752,935</td>
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<tr>
<td><strong>Total (£m)</strong></td>
<td><strong>9.91</strong></td>
<td><strong>8.68</strong></td>
<td><strong>7.90</strong></td>
<td><strong>7.80</strong></td>
<td><strong>5.36</strong></td>
</tr>
</tbody>
</table>
5.6 Risks and Opportunities

Outlined below are a number of risks and opportunities associated with the capital expenditure.

- Arup has assumed that the runway will need to be resurfaced as part of the re-commissioning – a detailed survey of the runway may present opportunities to either reduce or defer this capex.

- Further detailed investigation of the terminal buildings may reveal that services and structures require little upgrade/ refurnishing works resulting in possible opportunities to make capital cost savings.

- Arup has only allowed a notional £250k for re-commissioning of the ILS and DME systems. If these need to be replaced it could cost between £400-600k.

- The condition of runway lighting system is currently unknown, there may be additional costs associated with re-commissioning works.

- There may be a need for refurbishment of the tower equipment and this could be a cost that needs to be carried by the airport operator.

- The earthworks components of options 1 and 2 represent considerable cost uncertainty and risk. Detailed site investigation studies may conclude significantly more earthworks or site preparation is required resulting in substantially higher costs.