

## NORTH EAST SCOTLAND TRANSPORT PARTNERSHIP – 12 April 2023

### 5.1 Aberdeen Rapid Transit

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#### 1. Purpose of Report

- 1.1 The purpose of this report is to present the findings of the Aberdeen Rapid Transit Detailed Options Appraisal and recommendations for the next stages of this project.

#### 2. Background

- 2.1 Bus patronage in the north east has been declining rapidly in recent years with around a 30% drop in bus patronage between 2016 and 2022. Bus as a form of transport is seen by many people as slow and unreliable, and a less attractive option compared to travel by car. While bus use is falling, total travel is not, total mode share of bus is also falling. This trend is in stark contrast to the national, regional, and local policy position of reducing car travel, encouraging mode shift, reducing inequalities, and achieving carbon net-zero.
- 2.2 Aberdeen Rapid Transit is a key part of the strategy to reverse this decline in bus patronage and achieve mode shift to more sustainable forms of travel by providing high quality, fast, frequent, and reliable public transport services that connect residents of both Aberdeen City and Aberdeenshire to key regional education, employment, healthcare, retail, and leisure destinations. ART will also support broader aspirations for the region in terms of economic revitalisation and a city that is attractive, accessible and well-connected.
- 2.3 Aberdeen Rapid Transit was first identified in the 2021 approved Nestrans Regional Transport Strategy (RTS) as an ambition to develop a high quality, high frequency mass transit network across the city on key corridors and linking key destinations, anchored by Park & Ride facilities on each corridor. In addition to being a flagship project of the RTS, ART now also has national recognition in Transport Scotland's Strategic Transport Projects Review 2 (STPR2) and in the revised National Planning Framework 4 (NPF4).
- 2.4 Following development of the [ART Vision](#), the North East Bus Alliance<sup>1</sup> was successful in its bid to the Scottish Government's Bus Partnership Fund (BPF) to explore the options for delivering ART. The BPF is also funding a series of multi-modal corridor studies considering options for improving transport connections and infrastructure on the key arterial corridors into Aberdeen, and are developing in large part the bus priority measures that will be required to facilitate the success of ART. The successful bid to the BPF was founded on strong partnership working between the Bus Alliance partners and a shared vision to improve public transport provision by substantially reducing public transport journey times and unreliability on these key corridors into the city.
- 2.5 This report presents the findings of the ART Detailed Options Appraisal, funded through the BPF award. This work has been carried out by consultants Stantec and is an important early stage of the work to identify how the ART vision can be delivered. More detailed work will be required as the project progresses but it has been important at this early stage to consider the

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<sup>1</sup> The North East Bus Alliance is a partnership between Nestrans, Aberdeen City Council, Aberdeenshire Council, First Aberdeen, Stagecoach Bluebird, and Bains Coaches.

options available for delivery of ART within the current legislative environment, prior to more detailed consideration of routing, vehicles, fares and facilities.

- 2.6 This detailed options appraisal report was preceded by a report setting out the Case for Change and a Preliminary Options Appraisal which identified and carried out an initial sift of a wide range of options for delivery of ART. The Case for Change and the results of this preliminary appraisal were reported to the Nestrans Board in April 2022.

### **3. The Vision for Aberdeen Rapid Transit**

3.1 The vision for ART is a Bus Rapid Transit (BRT) system which should deliver:

- **High Segregation** - through the infrastructure provided – dedicated road space and priority at signals
- **Fast Services** - through the dedicated infrastructure provided, including improved / rationalised stops and an appropriate seamless ticketing method to reduce dwell time at bus stops
- **Frequent Services** - ‘turn up and go’ service levels utilising the infrastructure
- **High Capacity** - through the frequency and type of vehicles that operate on the network.

3.2 Other key features envisaged as part of the ART vision include:

- Unique branding to set it apart as a standalone unique product;
- Multi-door ‘tram-like’ vehicles and off-bus ticketing that remove the need for driver interaction and significantly reduce dwell times at stops / halts;
- High quality platform style stops providing the opportunity to distinguish it as a unique product and provide the infrastructure to facilitate much faster boarding and alighting times as well as enhanced accessibility and attractiveness;
- Two new cross-city routes anchored by park and ride facilities at or towards each end, providing an attractive option for trips currently made by car, especially from areas with fewer public transport choices;
- Integration with the existing bus network and other modes of transport, particularly active travel infrastructure.

3.3 These key factors, most of which can be seen on the successful Glider BRT system operating in Belfast, have been used to help frame the options for ART. Further information on the Glider and the benefits achieved for Belfast, including a 70% increase in patronage in the first year, can be found [here](#).

#### ***ART Transport Planning Objectives (TPOs)***

3.4 The following objectives for ART have been developed, agreed with Transport Scotland, and used to assess the options for ART:

- **TPO1:** Achieve average ART bus speeds on the urban sections of the ART corridors (i.e. within the Aberdeen City boundary) of at least 25kph (16mph) by 2030<sup>2</sup>.

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<sup>2</sup> The current average daytime bus speed has been calculated to be approximately 17kph (11mph).

- **TPO2:** By 2030, achieve a public transport service for which the timetables (with journey times reduced as per TPO1) are consistent across the day and the week, and where 95% of the services operate to within 5% of the timetabled journey time.
- **TPO3:** Improve the perception of quality of bus travel on ART corridors by 2030.

- 3.5 These objectives sit within the wider context of the objectives of the North East Bus Alliance which seeks to reverse the trend of declining bus patronage across the north east, the wider RTS objectives to achieve a substantial mode shift from car use to more sustainable modes and national targets for net zero carbon emissions and a 20% reduction in car kilometres by 2030.
- 3.6 Delivery of ART is a key part of strategy towards achieving these wider regional and national objectives as well as ensuring the vitality of the city region and image of the north east as an attractive place to live, work and invest.

#### **4. Development and appraisal of ART options**

- 4.1 The technical report detailing the full list of options, the methodology and findings of the Detailed Options Appraisal work can be found on the ART website and an Executive Summary is provide in Appendix A of this report.
- 4.2 The approach has been to consider and appraise alternative viable delivery and operational options, seeking to determine the best performing options in relation to the transport planning objectives, wider appraisal criteria and deliverability considerations.
- 4.3 It has been essential in this early stage to focus on the delivery mechanism for ART, as this then fundamentally determines the other key factors of how the ART system can be defined, and the roles and responsibilities of the different parties.
- 4.4 Bus services in Aberdeen are mainly delivered on a commercial de-regulated basis, predominantly by First and Stagecoach, within the operating environment of the 1985 Transport Act. The Transport (Scotland) Act 2019 introduced new provisions for Bus Service Improvement Partnerships (BSIP), new local franchising provisions and new / extended powers for local transport authorities to operate bus services to meet social needs. The development of options has focussed on the opportunities that these provide for the delivery of ART.
- 4.5 Further work will be required going forward to determine in more detail the operational details of ART, including specific routeing, vehicles, fares, and facilities, and will be informed by the preferred delivery mechanism.

##### **Options for ART**

- 4.6 Options build up from a do minimum (i.e. leave it to commercial operators to respond to the opportunities provided by new bus priority infrastructure), to seeking agreements with bus operators on a corridor by corridor basis for level and quality of service, to franchise options where the local authority specifies the bus network, with bus operators tendering to operate services. The full list of options appraised can be found on page 5 of the Executive Summary in Appendix A.
- 4.7 The findings of the Detailed Options Appraisal have subsequently identified two options which we are recommending are worthy of further development and consideration.
- **Option 3A** - This option looks at improvement to existing services on the ART corridors to provide the ART network and in addition considering wider stop spacing (with the significant journey time benefits this brings), and benefits from new ART 'platforms' as well as ART branded vehicles, significantly improving the quality of travel by public transport and differentiating ART from the existing bus network. The option also identifies the need to integrate the underlying bus network with ART, to avoid duplication of service on ART

corridors and to create a coherent and robust city-wide public transport network. This option has the potential to achieve benefits in terms of journey time reductions, modal shift, improved perceptions of public transport quality, increased park and ride use, equality, accessibility and overall public transport benefits. The report concludes that this option could be delivered through a BSIP agreement with local bus operators.

- **Option 5** includes the introduction of new bespoke cross-city ART services and the integration of the wider bus network into the ART network. This option has the potential to achieve significant benefits in terms of public transport journey time reductions, modal shift, improved perceptions of public transport quality, increased Park and Ride use, equality, accessibility and overall public transport benefits. It has the potential to provide Aberdeen with a world-class public transport option but comes with potentially significant additional costs and risk to the public sector. The report concludes that this option would most effectively be delivered through a franchise arrangement.

4.8 The key features of both a BSIP and a Franchise agreement are set out below:

### ***Bus Service Improvement Partnership (BSIP)***

4.9 a partnership agreement between the local authority or multiple local authorities and bus operators which can include agreement on:

- Route service standards relating to the frequency or timing of local bus services;
- Standards relating to the vehicles used to provide services;
- Maximum fares that may be charged for particular journeys;
- Ticketing and the manner in which entitlement to travel may be evidenced;
- The pricing of multi-operator travel cards;
- The provision of information to the public about local services; and
- The dates on which the timing of local service may be changed.

### ***Franchising***

4.10 A framework under which a Local Transport Authority (LTA) determines what local bus services are to be provided in an area, the standards to which the services are to be operated and specifies any additional facilities to be provided. The LTA or LTAs then grants exclusive rights to operate the services under franchise agreements that specify frequencies, fares and standards of services. An LTA or group of LTAs may make a franchising framework covering the whole or any part of their area.

4.11 The choice of delivery model for ART will depend to a large extent on discussions around commercial viability and the risks associated with this. Implementing ART through a franchising arrangement, which would provide the local authorities with control over how the ART vision is delivered, and could provide Aberdeen with a 'world-class' public transport service would come with significant set up costs, timescales and risks to the Councils. Pursuing ART through a Bus Service Improvement Partnership (BSIP) arrangement could deliver much of the ART vision but is critically dependent on the goodwill and co-operation of the bus operators.

4.12 The differences between the two approaches and strengths, weaknesses, opportunities and threats of each are explored further in the table in Appendix B.

### **Appraisal Outcomes**

4.13 The outcomes of the appraisal are summarised in the Executive Summary in Appendix A with some key findings including:

- ART can deliver significant benefits for Aberdeen in terms of a higher quality step change improvement in public transport provision that has the potential to significantly

increase public transport use and achieve mode shift away from car and achieve wider benefits for the economy, environment and social inclusion.

- There is support for ART amongst local people with 59% of people surveyed during the market research exercise indicating that they thought ART would be good for Aberdeen (and a further 22% that it would 'maybe be good').
- Just delivering the bus priority infrastructure (without new stops, stopping patterns and vehicles), would not deliver the sought after bus speeds and therefore impact the likely success of the scheme.
- New bespoke cross-city services facilitate a significant reduction in public transport travel time and significantly improve accessibility to key destinations by public transport. Two cross-city routes have been demonstrated to bring greater overall benefit than four individual routes terminating in the city centre.
- Reducing the amount of time a bus spends at a bus stop (dwell time) is an essential part of speeding up bus journeys and therefore making the service more attractive.
- The delivery of bespoke ART services will have a significant impact on the underlying bus network which will need to be fully explored, ensuring that there is no overall loss of accessibility as a result.
- To deliver the significant public transport travel time benefits of ART there will be a resulting impact for general traffic due to the reallocation of road space. However this sits within the context of the Scottish Government's wider commitment to reduce vehicle kilometres by 20% as well as broader aspirations for safer, healthier streets and improved accessibility for all, with ART providing the alternative sustainable transport solution needed to achieve this substantial reduction in traffic and wider benefits as a result.
- Adopting supporting traffic restraint measures, such as increased parking management and control, alongside the ART scheme is likely to provide additional benefit and help ensure success and an overall positive benefit to cost ratio for the scheme.
- Ongoing dialogue with businesses and the freight community, access and mobility groups and the general public is required to positively influence understanding of the scheme benefits and to understand their views on how ART can meet local needs as the scheme continues to be developed.
- There are two main delivery mechanisms available with BSIPs and franchise each presenting different levels of cost and risk. These require more detailed consideration to fully understand the implications of each.

## **5. Stakeholder engagement**

- 5.1 The partners of the North East Bus Alliance, which includes Nestrans, Aberdeen City Council, Aberdeenshire Council, First Aberdeen, and Stagecoach Bluebird have been involved and engaged with the ART project from the start. The bid to the Bus Partnership Fund was on behalf of the Bus Alliance as a whole with all partners involved in regular meetings of the Bus Partnership Fund Working Group which meets on a monthly basis. All partners of the Alliance have been involved and consulted as part of the ongoing appraisal work and have been consulted on the content and recommendations of this report.
- 5.2 As reported previously to the Board there is also a complementary workstream focussing on communication and engagement of the ART vision to businesses, stakeholders and the wider public across the north east. This has seen the development of the ART brand as well as the

hosting of a number of engagement events and development of materials to support and inform this technical work. Continuation of this marketing and engagement activity will be critical to the success of the project as it develops.

## **6. Summary and next steps**

- 5.1 It is apparent on the evidence available that the BSIP approach is deliverable, enables progress in the short term, subject to reaching appropriate agreements with bus operators on service specifications. There is already a requirement, through the Bus Partnership Fund award, to develop a BSIP and work is underway on this through the North East Bus Alliance. Progression of option 3A will require more involved discussion with bus operators to explore what elements of the ART Vision could be achieved through this delivery mechanism.
- 5.2 A franchise approach provides additional delivery benefits, but comes with associated timescale risks, deliverability risks and revenue funding risks. Further work is required to fully explore the likely costs of a franchise, particularly the implications for and the costs associated with the impacts on the wider bus network.
- 5.3 The technical work has however demonstrated that whichever delivery mechanism is adopted, ART has the potential to deliver significantly improved public transport journey times and mode shift away from car by making public transport a more attractive and reliable option. This in turn will bring significant benefits in terms of the attractiveness of Aberdeen and the wider region, it's economic vitality, environment and accessibility.
- 5.4 For the Outline Business Case it is recommended that both options are carried through. This will provide more detailed assessment based on the five cases "strategic, economic, commercial, financial and management".
- 5.5 This Detailed Options Appraisal report represents a key first step in the process to develop ART. The project remains at an early stage but progression to Outline Business Case will allow more detailed consideration of:
- Financial implications and risk;
  - The desired routing of the ART network and interchange points;
  - Impacts on the wider bus network and analysis of how the network may need to change in response to ART;
  - Vehicle and depot requirements;
  - Ticketing mechanisms; and
  - Branding;
  - How the benefits in terms of patronage growth that other BRT schemes have delivered can be realised in Aberdeen;
  - The benefits to the regional economy of the improved perceptions of connectivity that ART would bring;
  - What measures may be available to mitigate potential problems of traffic rerouting; and
  - How ART's role in helping to reverse the circle of decline of bus use on the routes that it will serve can permeate to other parts of the region's public transport network.
- 5.6 The Scottish Government's Bus Partnership Fund remains a significant opportunity to develop the case for ART further and to fund the infrastructure requirements of the ART project and deliver within the timescales set out in the ART Vision.

## **7. Recommendations**

- 5.7 It is recommended that the Board:

1. Note the contents of the ART Detailed Options Appraisal and agree that this be submitted to Transport Scotland as part of the BPF Gateway Review process, subject to agreement by Aberdeen City and Aberdeenshire Councils
2. Agree to work with the partners of the North East Bus Alliance to continue to develop a BSIP agreement that could support the delivery of option 3a and explore with bus operators what could be achieved through this mechanism.
3. In parallel to 2 above, further explore the costs and risks associated with both a BSIP and a franchise approach in order to fully understand the likely financial implications (both in terms of set up and ongoing revenue costs) and report this back to future meetings of the Nestrans Board and the two Councils for their consideration;
4. Agree to progress the study to Outline Business Case on the above basis and to request funding from Transport Scotland, through the Bus Partnership Fund, for the following next key stages as part of that process:
  - a) Further consideration to establish the desired routeing and interchange points for the ART corridors and services in order to inform the Outline Business Case.
  - b) Progression to Outline Business Case of Options 3a and 5, based on an agreed desired network.
  - c) Further testing in ASAM 19 'without policy scenario' of options 3a and 5 under the preferred network and services.
  - d) Further investigation and quantification of the wider economic and social benefits that ART may bring to the region.
  - e) More detailed financial analysis of operating costs and revenues to firm up on the level of commercial viability and risk associated with both a BSIP and franchising approach.
  - f) Recruitment of a BSIP / franchise manager in order to ensure the resources and expertise are available to progress these options within the timescales set out in the Vision document and BPF bid.
  - g) Continued funding for engagement, marketing and communications workstreams as an integral part of delivering ART.
5. Refer this report to the two Councils for their consideration.

Kirsty Chalmers  
Transport Executive

16<sup>th</sup> March 2023

- Table B1 below provides a summary of the key features used in the appraisal of each of the two options as well as comparison of the relative strengths, weaknesses, opportunities, and threats of each. As discussed in the main body of the report, what can be achieved through each approach will be determined through more detailed discussions with bus operators and further assessment of likely costs and risks. For the purposes of appraisal however, a number of assumptions were made as to what features could likely be delivered under each option.

Table B1

	Option 3a	Option 5
<b>Key features</b>	Current bus services operating along ART corridor services amended to provide the ART network, operated by existing commercial operators with increased frequency and integration of other services to connect and feed into the ART network, avoid duplication and provide an enhanced service.	New bespoke cross city services integrated with the wider bus network to connect and feed into the ART network and avoid duplication.
	Platform style bus halts	Platform style bus halts
	Increased stop spacing to 800m for ART services, to improve journey times but recognising that careful consideration will need to be given to the impacts on accessibility.	Increased stop spacing to 800m for ART services, to improve journey times but recognising that careful consideration will need to be given to the impacts on accessibility.
	Conventional zero emission vehicles provided by bus operators through their existing or planned upgrades to their fleet, branded as ART	Tram style, multi-door, zero emission vehicles branded for ART.
<b>Delivery mechanism</b>	<ul style="list-style-type: none"> <li>Could be delivered through a BSIP partnership agreement with local bus operators.</li> <li>Decisions on how the wider bus network evolves to accommodate ART services would be made by bus operators.</li> </ul>	<ul style="list-style-type: none"> <li>Delivery of this option would rely on operators agreeing to service rationalisation and therefore this option is likely to require a franchising approach.</li> <li>A BSIP does not empower a Local Transport Authority (LTA) to directly determine the places serviced by a bus service so in order to deliver with certainty the cross-city ART network on corridors and routes determined by the LTA, a franchise would likely be required.</li> </ul>
<b>Strengths</b>	<ul style="list-style-type: none"> <li>Will achieve increased bus speeds and improved journey time consistency due to bus priority infrastructure and reduced stopping pattern however these will be less than the desired</li> </ul>	<ul style="list-style-type: none"> <li>Will achieve increased bus speeds and improved journey time consistency due to bus priority infrastructure and reduced stopping pattern as well as additional journey time</li> </ul>

	<b>Option 3a</b>	<b>Option 5</b>
	<p>25kph stated in the TPO as this option does not include benefits of multi-door vehicles.</p> <ul style="list-style-type: none"> <li>• Timescales to develop a BSIP estimated at around 9-12 months from informal discussions to the commencement of a scheme and so could be in place relatively soon once the legislation is enacted.</li> <li>• The risk of a legal challenge is low as success requires effective partnership working, building on a history of successful partnership working through the Bus Alliance.</li> <li>• Will enhance the perceived quality of public transport through provision of higher quality platforms and branding which would help to differentiate it from other services.</li> </ul>	<p>benefits that could be achieved through multi-door vehicles. Would deliver a clear step change in provision.</p> <ul style="list-style-type: none"> <li>• The combination of reduced stopping patterns and short bus stop dwell times associated with the use of tram-style vehicles enables bus speeds of over 20kph on all corridors and over 25kph on two of the four corridors and improved journey time consistency.</li> <li>• Providing new cross-city services facilitates a significant reduction in public transport travel time for these cross-city movements and significantly improves accessibility by public transport across the region (e.g., an additional 27,000 people should be able to access ARI within one hour by public transport).</li> <li>• Would further increase perception of quality through high specification of vehicles with additional on-board facilities.</li> <li>• Initial modelling work indicates that this option could increase public transport trips by around 11-14% which is an additional 9-10,000 trips per day.</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• This option has the potential to deliver many of the attributes of ART but does not include the tram-style vehicles and there are other limitations of a BSIP such as it cannot specify single fare prices.</li> <li>• It is less certain that this option could provide the enhanced accessibility of a full cross-city service as decisions on routing would be with the bus operators.</li> <li>• Additional benefits to journey speeds achieved through multi-door vehicles would not be realised unless this feature was adopted by bus operators as part of their own fleet upgrades.</li> <li>• Much of the control over service provision and the network as a whole, remains with the commercial bus operators.</li> <li>• A BSIP does not empower a LTA to determine the places serviced by a bus service so this would need to be agreed in discussions with the bus operators.</li> </ul>	<ul style="list-style-type: none"> <li>• The timescales for delivering a franchise can be lengthy with an estimated timescale of up to seven years for delivery.</li> <li>• The LTA or LTAs must bear the operating costs and revenue risk for all bus services covered by the franchise agreement.</li> <li>• Operator risk is also high as operators would likely see significant impacts on their businesses if they were not successful in the franchise award.</li> </ul>

	<b>Option 3a</b>	<b>Option 5</b>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>Discussions on the development of a BSIP agreement are already under way through the Bus Alliance as a requirement of the Bus Partnership Fund award.</li> </ul>	<ul style="list-style-type: none"> <li>A franchise provides significant opportunity for the LTA or LTAs to take full control of bus service provision and initial appraisal has demonstrated that, with the inclusion of supporting traffic restraint measures, this option has the potential to deliver an overall positive benefit to cost ratio.</li> <li>Given the lengthy timescales for implementation, this could at this point still be explored further in parallel to the development of a BSIP agreement.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>Key decisions relating to their commercial businesses remain largely in the control of the bus operators.</li> <li>Success is critically dependent on the support of bus operators and an alignment of objectives by all parties.</li> <li>The longevity of the scheme is not guaranteed as a BSIP agreement will likely need to be reviewed and re-signed approximately every 5-10 years.</li> <li>Caution would need to be applied to ensure all arrangements are compliant with collusion and anti-competitive legislation.</li> <li>Perceived to be a medium risk approach in terms of costs and potential for legal challenge.</li> </ul>	<ul style="list-style-type: none"> <li>To date no franchising or quality contract scheme has been implemented. Although changes in legislation in England are seeing franchising proposals beginning to emerge.</li> <li>Franchising introduces new, and ongoing costs and financial risk for the local authority, including operating costs.</li> <li>The threat of a legal challenge is much higher.</li> <li>The management and administrative effort required to establish a franchise are significant.</li> <li>Potential to impact on relationships and current good partnership working with local bus operators making implementation of a BSIP more challenging.</li> <li>Perceived to be a higher risk approach.</li> </ul>
<b>Financial implications</b>	<ul style="list-style-type: none"> <li>Infrastructure costs in the region of £200 million (including bus priority and junction upgrades delivered through the corridor studies, bus stop infrastructure, park and ride upgrades and construction of a new park and ride at Portlethen). It is anticipated that these costs will fall within the scope of the Bus Partnership Fund.</li> <li>Additional vehicles in order to provide enhanced operations on ART corridors estimated to be around £7.5 million.</li> <li>Establishment of a BSIP - estimated to be in the order of £50,000 split between administration / set up with an ongoing revenue spend of around £20-30,000.</li> </ul>	<ul style="list-style-type: none"> <li>Infrastructure costs in the region of £215 million (including bus priority and junction upgrades delivered through the corridor studies, bus stop infrastructure, park and ride upgrades and construction of a new park and ride at Portlethen). It is anticipated that these costs will fall within the scope of the Bus Partnership Fund.</li> <li>32 Tram style vehicles to operate cross-city routes estimated at approximately £22.5million.</li> <li>Franchising involves two streams of management and administration costs: <ul style="list-style-type: none"> <li>During set up to prepare and assess the proposed framework, obtain an auditors report and conduct consultation;</li> </ul> </li> </ul>

	<b>Option 3a</b>	<b>Option 5</b>
		<ul style="list-style-type: none"><li>- On an ongoing basis to undertake service planning, tendering and monitoring and management</li><li>• The set up costs will depend on the extent of legal challenges. Initial estimates are set up costs in the order of £200-300,000 with ongoing revenue spending of circa £30,000 to £100,000 per year.</li></ul>