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HI TRANS
THE HIGHLANDS AND ISLANDS TRANSPORT PARTNERSHIP

Report to Partnership Meeting 15 September 2017

RESEARCH AND STRATEGY DELIVERY

Value of Transport

Purpose of Report

To introduce the Executive Summary of the desk based study commissioned by HITRANS into *The Value of Transport*. The report seeks to identify the wider socio-economic value of the transport network and services at both a local and inter-regional level.

Background

Further to the report taken to the HITRANS Partnership meeting in February 2017, this report introduces the HITRANS commissioned study into the value of transport undertaken by locally based transport economist James Laird (Peak Economics).

With finite government finances choices have to be made regarding prioritisation of expenditure between different sectors of government: education, health, transport and social services. Within each sector, such as transport, with limited finance it is also necessary to prioritise transport revenue and capital investment.

The challenge is further complicated by the manner that transport services (particularly local ones) facilitate the delivery of health and educational services – thereby making the delivery of those services more cost efficient. The efficiency cost saving will be felt by the agency/government department delivering the health or educational service but the revenue or capital support for the delivery of the transport service often stems from a different government department/agency.

Within the HITRANS area local authorities incur revenue expenditure on the provision of public transport services: bus, ferry and air. Capital expenditure is also needed to support these services along with maintaining and improving the road network.

Within the Highlands and Islands region there is also the need to maintain inter-regional connectivity. Some of the responsibility for this lies with Transport Scotland (the trunk road network and the rail network), whilst local authorities have responsibility for other elements of this intra-regional infrastructure and service provision.

A similar story plays out at a national level regarding the connectivity of the Highlands and Islands to Aberdeen, the Central Belt, North of England, the South of England and continental Europe. This review seeks to better understand the evidence base in support of investment in transport at two different geographical levels: inter-regional/long distance and intra-regional/local while also understanding the rural and urban dynamic.

Key Themes

Economic Growth

- The broad evidence base indicates that a doubling of transport stock would grow the economy by 8.5%.
- Good evidence of strong positive economic effects associated with regional airports that provide services suitable for business - 10% increase in air traffic (passengers) is associated with a 1% increase in service sector employment.
- Importance of long distance rail network for knowledge centred service sector and tourism
- Good connectivity at a local level (roads and public transport) is also needed as this increases economic mass and productivity – agglomeration impacts. The evidence base indicates that a doubling of economic mass would grow the economy between 4% and 11%.
- Reductions in ferry fares boost island economies, particularly through tourism. Where reduced fares are passed on to businesses that export off the islands (i.e. haulage rates reduce) exporting businesses also benefit.
- Impact of reductions in local bus service provision disproportionately affect low income, young, part-time and female workers segments of the workforce.
- Significant benefits of transport investment to primary sectors such as food and drink and tourism with displacement less likely than in areas where service sectors dominate economy.

Delivery of Health Services

- Transport infrastructure and services are valuable to the delivery of health services in two ways – assisting directly in reducing the costs of running the health service and can contribute indirectly by making the population healthier and reducing the society's health needs.
- It is estimated that the health service in Scotland spends a minimum of £94 million annually on purchasing transport services. However there is a general lack of evidence on how good (poor) transport provision influences its health care delivery costs. This is unfortunate given the current budgetary policy needs of local government. This lack of evidence also applies to remote communities in the Highlands and Islands where the trade-off between transport availability and the manner that health care is delivered is very visible. Improving this evidence base would be helpful to further discussions on interactions between the delivery of health care services and transport services and how to maximise the efficiency of both.
- Available evidence for community transport show for every £1 spent on community transport it saves the public sector £2 with the majority accruing to the health service.
- In most instances the local authorities seem to bear the cost of providing the transport service, whilst the NHS and households are beneficiaries. This dynamic is most apparent in the Highlands and Islands where many of the services are supported by the public sector.
- There is a lack of evidence on the actual reduction in costs to the NHS from the primary health care role that transport offers.

Delivery of Education Services

- Transport undoubtedly contributes to the delivery of educational services but there is a lack of evidence on how the decisions such as the centralisation of schools affects transport costs to households and to local government.

Social Cohesion

- Transport performs an insurance option, that is households value having transport services available for that 'unexpected' trip. Additionally households can also be altruistic and value having transport services available if they are useful to other people – e.g. senior citizens. There is evidence that households are willing to be up to £130 a year for access to bus services even if they do not use them, and up to £249 a year for access to train services.
- Public transport can help ensure the viability of town centres – with research indicating that bus represents a third of non-grocery retail and entertainment trips to city centres.
- Populations around train stations have been found to grow as a consequence of improved rail services, populations around regional airports grow faster than at municipalities without airports, and fixed links can have a strong influence on islands populations

Economic Appraisal & STAG

- The manner that transport investment can displace economic activity from one location to another and can assist in a structural shift in an economy means that it is important that the distributional implications of transport policy on different demographic groups is clearly identified.
- This distributional analysis is also needed if one considers the manner that public sector policy on health and education delivery can shift the cost and benefit burden between different actors (e.g. government, health board and households). It should also be considered if transport policy positively or adversely affects certain demographics – bus services are an often cited example. It is often the case that the distributional analysis is neglected in transport appraisals, with the core focus tending to centre on the calculation of the headline economic indicators. The above discussions demonstrate the error of this, as transport policy often has strong distributive implications.

Further Research

As part of the brief, Peak Economics were asked to identify areas that would benefit from further primary research. These include:

- The role of air services in delivering health care cost savings in either the Western Isles or Argyll and Bute;
- The role of air and ferry services in delivering cost savings in the delivery of education services in Orkney; and
- The relationship between school contracted bus services and commercial bus services in a remote rural region, and what role these commercial bus services perform in supporting the local economy.

HITRANS will consider the merit in undertaking further research in partnership with other stakeholders.

Next Steps

This report provides an invaluable evidence base to support the investment and prioritisation of transport infrastructure and services made by HITRANS and partners at a local, regional and national level. It also demonstrates how transport services (particularly local ones) facilitate the

delivery of health and educational services – thereby making the delivery of those services more cost efficient.
This highlights a need for improved cross-sectoral collaboration in the procurement of transport but also in the decision making processes of sectors such as health and education where changes in service provision can often have a significant impact on or be impacted by the transport network they depend on.

Recommendation
Members are invited to;

1. Note the report and provide comment on its findings.
2. Agree that HITRANS Officers share a copy of report with Community Planning Partners and Transport Scotland to support the evidence place in their development of the National Transport Strategy.

RISK REGISTER

RTS Delivery

Impact - Positive

Comment – This work will help provide an evidence base to support the business cases for investing in local and strategic transport projects identified in the Delivery Plan

Policy

Impact - Positive

Comment – This work helps support the core objectives of the Regional Transport Strategy

Financial

Impact – Positive

Budget line and value – An allocation of £5,000 has been made in the HITRANS Business Plan 2017/2018.

Equality

Impact – Positive

Comment – The study helps provide evidence in support of the retention and development of transport services for the most vulnerable areas and elements of the population within the HITRANS region

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Report by: Neil MacRae
Designation: Partnership Manager
Date: 15th September 2017

Appendix 1: The Values of Transport: Executive Summary, James Laird, Sept 2017

Executive Summary

James Laird
Peak Economics
September 2017

1 Executive Summary

1.1.1.1 Transport infrastructure and services feed through into many different aspects of society creating value through economic growth, delivery of health services, delivery of education services and by making society more cohesive. Taking each of these in turn.

1.2 Economic growth

1.2.1.1 From an economy perspective transport investment creates productivity gains. These stem from the business and freight user benefits and the agglomeration benefits from increasing the size of clusters. The broad evidence base indicates that a doubling of transport stock would grow the economy by 8.5%. However, behind these net benefits there are significant local variations as changes in transport services affect the status quo, leading to displacement of economic activity from one location to another. These effects are hard to study, but where evidence exists it suggests that the displacement effects may dominate the productivity effects at a local level. Obviously displacement effects may be either positive or negative – depending on where the activity is being displaced from and to. These displacement effects are often accompanied with a sectoral shift in employment: for example with a growth in the share of manufacturing (often related to roads based investment) or to a growth in business services (often associated with rail and air based investment). This makes it hard to draw definitive economic findings for a region like the Highlands and Islands though some policy messages stand out as outlined below.

1.2.1.2 Long distance business connectivity by air, road and rail is important. There is good evidence of strong positive economic effects associated with regional airports that provide services suitable for business. An often quoted finding is that a 10% increase in air traffic (passengers) is associated with a 1% increase in service sector employment. The long distance rail network typically caters for knowledge centred service sector businesses. It is these sectors that typically experience growth in the vicinity of train stations following rail improvements. For a rural economy like the Highlands and Islands long distance links are also important for tourism. Improved connectivity, whilst increasing tourism, can also change the nature of the tourist sector – for example increases in day trips may occur to an extent as a result of a reduction in overnight stays in a locality.

1.2.1.3 Good connectivity at a local level (roads and public transport) is also needed as this increases economic mass and productivity – agglomeration impacts. All forms of transport and good land use planning can contribute to this. The broad evidence base indicates that a doubling of economic mass would grow the economy between 4% and 11%. This impact is broadly speaking a balance to returns of increasing the size of a community – which is largest for small communities as often found in rural regions – and the types of industry within the region. Typically the industries with the highest returns to increases in economic mass are those found in the large urban areas, with industries found in rural areas exhibiting much lower returns. Within the UK the economic appraisal guidance on agglomeration effects only addresses the variation by industry, and not the size of the community. When the size of the communities is also taken in to account the effects of increasing economic mass in rural regions has been shown to be positive. Evidence from New Zealand for example indicates that a doubling of economic mass in rural regions can increase productivity by 4%.

1.2.1.4 Transport services at a local level can have important impacts on employment. Putting to one side the discussion on displacement for the moment, the evidence suggests that a 10% increase in public transport accessibility can increase local employment outcomes by 0.5%, though in rural areas this may drop to a tenth (to about 0.04%). It is important to recognise that different transport modes serve different segments of the labour market. Buses in particular seem to serve low income, young, part-time and female workers. Therefore any reductions in bus service provision will disproportionately affect those segments of the workforce.

1.2.1.5 There is a lack of evidence on the economic impact of investment in low volume rural lifeline roads – aside from the evidence on fixed links. As such roads are an important component of the Highlands and Islands this is an evidence gap that may be worth addressing. There is also a lack of evidence on the impact of ferry services on island economies, aside from that of ferry fares. Reductions in ferry fares boost island economies, particularly through tourism. Where reduced fares are passed on to businesses that export off the islands (i.e. haulage rates reduce) exporting businesses also benefit. The evidence on fixed links is mixed. The background economic conditions appear to have a strong bearing on the success of fixed links in stimulating economic growth – a point also referred to later in this summary.

1.2.1.6 Traditional industries within the Highlands and Islands region, the primary sector and in food and drink manufacturing, are all reliant on the transport network – particularly the road network. For these sectors transport investment is primarily about cost reduction. These cost reductions are delivered through improved productivity of the haulage sector. Food and drink manufacturing will also gain productivity benefits from clustering.

1.2.1.7 There is also a need to see the changes induced by transport investment in the context of ongoing changes in our economy – primarily a shift towards a higher skilled, higher wage, service sector economy. Transport can help facilitate this ongoing change. These sectoral changes can also be associated with changes in land use. Service sector based employment tends to cluster to urban areas. Thus a shift towards a more service based economy will naturally reinforce the strength of the urban parts of the region, potentially displacing economic activity from the more rural areas. Transport investment will be part of this story.

1.2.1.8 Transport investment can also insulate against economic shocks. The evidence, however, is that such investment cannot insulate ad infinitum. Furthermore the effectiveness of transport policy as a tool to create economic growth is severely restricted by underlying economic weaknesses (e.g. a lack of skilled workers) or institutional failings. It is therefore important that a local economy has all the right ingredients to encourage growth following a transport investment – particularly access to an appropriately skilled workforce.

1.3 Delivery of Health Services

1.3.1.1 Transport infrastructure and services are valuable to the delivery of health services in two ways. They assist directly in reducing the costs of running the health service - i.e. in reducing the cost of delivering health care for a given level of health needs in society. They can also contribute indirectly by making the population healthier (or unhealthier!) – i.e. reducing society's health needs. With respect to the direct costs of running the health service it is estimated that the health service in Scotland spends a minimum of

£94 million annually on purchasing transport services. However there is a general lack of evidence on how good (poor) transport provision influences its health care delivery costs. This is unfortunate given the current budgetary policy needs of local government. This lack of evidence also applies to remote communities in the Highlands and Islands where the trade off between transport availability and the manner that health care is delivered is very visible. Improving this evidence base would be helpful to further discussions on interactions between the delivery of health care services and transport services and how to maximise the efficiency of both.

1.3.1.2 The only exception to this evidence gap is associated with community transport. Case studies in community transport show for every £1 spent on community transport it saves the public sector £2 with the majority accruing to the health service – though some caution needs to be attached to these findings given the low number of studies reviewed. These benefits derive from for example reducing the need for taxis to transport patients, reducing missed appointments, and supporting independence (thereby delaying the need for domiciliary care).

1.3.1.3 Another feature of the interaction between transport availability and health delivery costs is that the incidence of cost and benefit across government, NHS and households is not equal. In most instances the local authorities seem to bear the cost of providing the transport service, whilst the NHS and households are beneficiaries. The local authorities and the NHS can also shift the costs to households either financial costs (e.g. fares) or social costs (provision of lower quality service). Possibly the very visible nature of these interactions in the Highlands and Islands, particularly the islands, would make the region a good case study to explore whether these institutional barriers can be broken down.

1.3.1.4 The manner that transport and health services are provided by different bodies has led some commentators to suggest that significant institutional challenges to the efficient delivery of both sets of services exist.

1.3.1.5 Transport can also add value by indirectly delivering health benefits. Increasing physical activity, reducing pollutants and affecting road safety. There is an established evidence base that gives social welfare values for reducing car and lorry kilometres/miles. The social value of new transport infrastructure (e.g. cycle paths) in this primary health care role is often shown to exceed its social costs. The social benefits include the human costs (increase in well being), economic costs (reduction in lost output) and material costs (e.g. to the NHS). Whilst the impacts on pollutants and road safety are reasonably well understood a key issue needing to be addressed the ability of transport investments to shift behaviour from a sedentary to active lifestyle. It is only when we observe this transition that we get the health benefits.

1.3.1.6 The actual reduction in costs to the NHS from the primary health care role that transport offers do not seem to have been explored to date, and where they have been reported in the media are actually social values not financial values. This is an evidence gap.

1.4 Delivery of Education Services

1.4.1.1 Undoubtedly transport contributes to the delivery of educational services, with several examples being cited anecdotally in conversations with stakeholders. However it has been hard to find any evidence to quantify the relationship, beyond an estimate of the increase in car trips resulting from reductions in school transport. Of the topics reviewed in this paper this is the one for which least appears to be known. For example

there is a kack of evidence on how the centralisation of schools affects transport costs to households and to local government. This represents a significant evidence gap..

1.5 Social Cohesion

1.5.1.1 Transport availability also contributes to the social fabric of society. It does this in several ways. It can perform an insurance option, that is households value having transport services available for that 'unexpected' trip. Additionally households can also be altruistic and value having transport services available if they are useful to other people – e.g. senior citizens. There is evidence that households are willing to be up to £130 a year for access to bus services even if they do not use them, and up to £249 a year for access to train services.

1.5.1.2 Public transport can help ensure the viability of town centres – for example research indicates that bus represents a third of non-grocery retail and entertainment trips to city centres. It can also help alleviate deprivation (which of course is related to the discussion on the economy). Whilst there is some evidence on these topics the evidence base remains limited and conclusions are therefore tentative.

1.5.1.3 Bringing all this discussion together transport also affects the size of the local population. Populations around train stations have been found to grow as a consequence of improved rail services, populations around regional airports grow faster than at municipalities without airports, and fixed links can have a strong influence on islands populations. Of course underlying economic and social conditions affect the influence transport has on population – where these background conditions are weak, transport investment may have limited or no impact. The role of background economic conditions in particular appears to influence the impact of the fixed links studies reviewed.

1.6 Economic Appraisal and STAG

1.6.1.1 When we value transport it is important to be clear what the unit of valuation is. The cost benefit analysis reported in the Transport Economic Efficiency (TEE) of a STAG, whilst measured in £s, is best thought of as a measure of social well being. It is not a financial measure – as can sometimes be reported in the media and by politicians. The social welfare value of transport investment is calculated through an analysis of the direct impacts of a transport intervention (travel time savings, vehicle operating costs, accidents, etc.) with some add-ons, where relevant, for changes in the wider economy. Such an analysis captures the added value of bringing more resources into economic use. For example the added value of increasing employment is net of the loss of leisure time. Whilst this framework is well developed, one area which is not well understood are the welfare costs of out-migration from remote locations – for example in search of work or better education opportunities.

1.6.1.2 This contrasts to economic impact studies where only monetary or financial flows such as cost reductions or increased wages or profits are captured. Here the value of transport reflects financial measures only – akin to the bottom line on a balance sheet. If these are reported in an appraisal the fall under the Economic Activity Location Impact (EALI) component in STAG. The manner that transport investment can displace economic activity from one location to another and can assist in a structural shift in an economy means that it is important that the distributional implications of transport policy on different demographic groups is clearly identified.

1.6.1.3 This distributional analysis is also needed if one considers the manner that public sector policy on health and education delivery can shift the cost and benefit burden between different actors (e.g. government, health board and households). It should also be considered if transport policy positively or adversely affects certain demographics – bus services are an often cited example. It is often the case that the distributional analysis is neglected in transport appraisals, with the core focus tending to centre on the calculation of the headline economic indicators. The above discussions demonstrate the error of this, as transport policy often has strong distributive implications.

1.7 Avenues for further research

1.7.1.1 Clearly many of the topics discussed in this paper are at the knowledge frontier. Consequently there are many knowledge/evidence gaps and creating plenty of opportunities for further research. Unfortunately, little of this research is easy to undertake in a robust manner. A lot of the research referred to in this paper is based on an analysis of secondary datasets collected over many years with repeated observations on the same unit: individual, household or firm. The low population densities in the Highlands and Islands makes undertaking these sorts of studies difficult as the sample sizes will be small – should one even be able to access appropriate data.

1.7.1.2 Bearing this in mind a pertinent, tractable and timely line of research might therefore be to restrict further research to how the availability of transport services can have cross-sectoral impacts within the public sector. A number of potential topics within this field stand out:

- the role of air services in delivering health care cost savings in either the Western Isles or Argyll and Bute;
- the role of air and ferry services in delivering cost savings in the delivery of education services in Orkney; and
- an evaluation of the impact of the Shetland Health Board to use ferry transfers to Aberdeen instead of air services.

1.7.1.3 The latter study would also have an economy angle and could also explore some of the challenges faced when trying to deliver cross-sectoral benefits within a fragmented institutional arrangement (fragmented in that the health board, the local authority, the ferry and air operators are all separate bodies). Potential confounding factors at play are competition on Shetland air routes between Flybe and Loganair from September 2017 and the extension of road equivalent tariffs (RET) ferry fares to Shetland routes from early 2018.

1.7.1.4 Another potential avenue of research might be an investigation between the relationship between school contracted bus services and commercial bus services in a remote rural region, and what role these commercial bus services perform in supporting the local economy. This in itself could be timely given some of the bus regulation reforms being considered (albeit at this moment in time these reforms are specific to England).