**Services of General Interest (SGI) in the
Scottish Sparsely Populated Area (SPA)**

Introduction, Classification by Delivery Mode, and Selection of Exemplar Services

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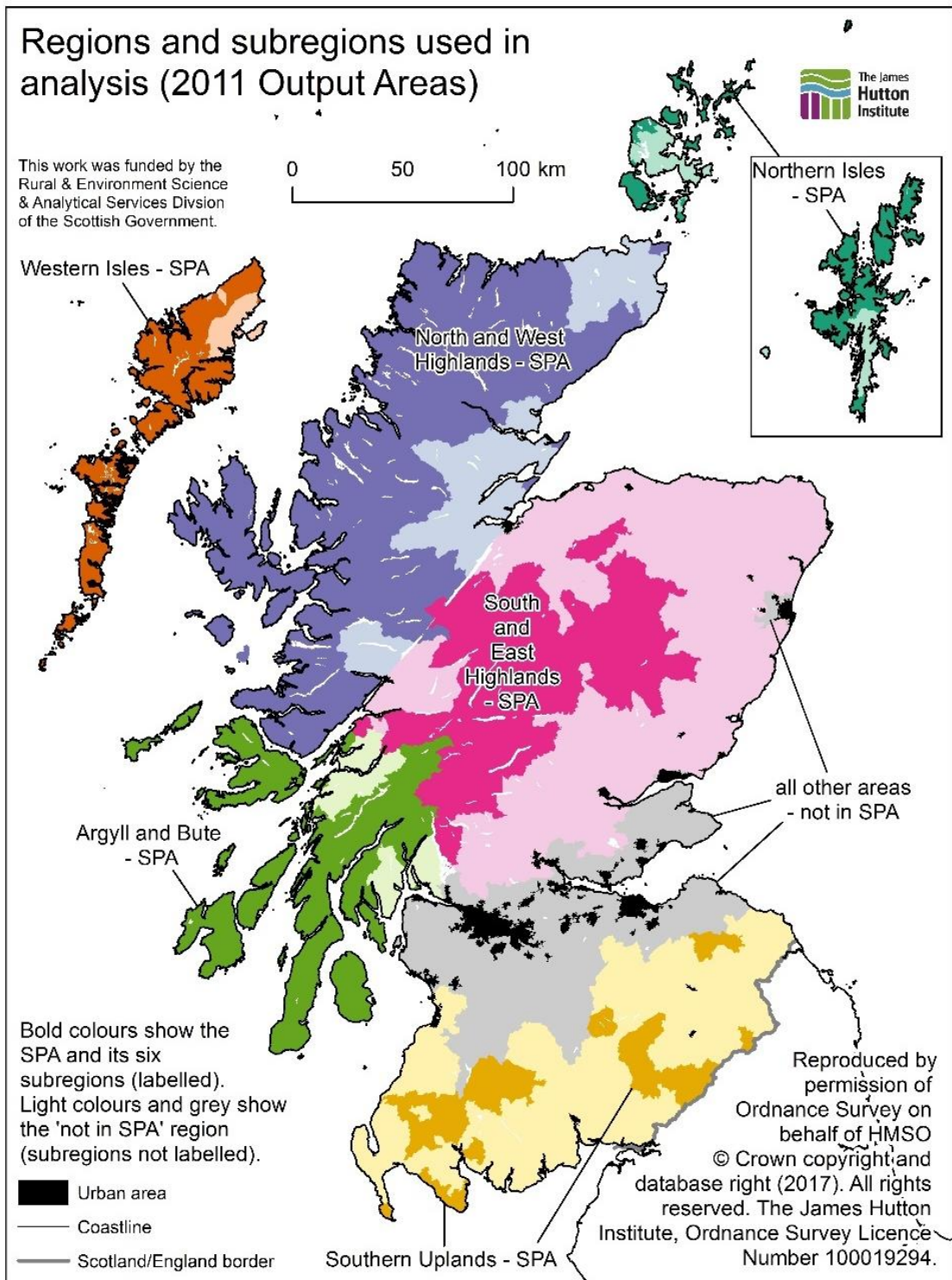
Acknowledgements

1. Introduction

This working paper reports work carried out as part of a project funded by the Scottish Government's Rural and Environment Science and Analytical Services (RESAS) division's 2016-2020 Strategic Research Programme[1]. More precisely this work has been carried out under Research Deliverable 3.4.1. The research question addressed by this project is "How do changes in the population of remote rural areas of Scotland affect the social, economic and ecological resilience of these areas?". It thus explores the land use, economic and environmental implications of demographic change in the sparsely populated areas (SPA) of Scotland. One of several strands of work (Objective 4) focuses on the implications of sparsity, demographic "shrinking" and ageing upon the way in which services are delivered or accessed.

Remoteness and sparsity are, strictly speaking, distinct characteristics, although in the real world they are very often associated in location and process. The term "remote" is often seen as equivalent to "peripheral" – and as the opposite of "accessible". There is a large European literature on "peripherality" and "peripheralization", as a socio-economic process. It is defined by levels of economic and social interaction with "hubs" of economic activity which are outside the territory. Sparsity, on the other hand is a more local, endogenous, characteristic, and relates to the advantages and disadvantages of a thinly scattered population. Whilst the term "remote" is used in the title of the project it is clear from the terms of reference that the chief concern was with the effects of sparsity upon land use, the environment and economic activity, especially if these areas continue to lose population over the coming decades.

So far the project team have produced three working papers, all of which are available for download from the project web page (http://www.hutton.ac.uk/research/projects/demographic-change-remote-areas). The first paper (Copus and Hopkins, 2017) describes how the Sparsely Populated Areas (SPA) of Scotland have been defined in the context of our project. In order to reflect the lived experience of residents and the environment in which economic activities take place we have chosen not to base the SPA boundary simply on population density, but rather, through a GIS analysis to identify those areas from which it is not possible to access the number of residents equivalent to a small town (10,000 persons) within half an hour travel time. This approach also has the additional advantage of creating a less fragmented area (Map 1). The SPA has also been divided into six sub-areas, in order to facilitate the investigation of the situation and development in different geographic environments.

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[1] http://www.gov.scot/Topics/Research/About/EBAR/StrategicResearch/strategicresearch2016-21/srp2016-21
[accessed 31st January 2017]

Map 1: The Sparsely Populated Area (SPA) of Scotland and its sub-regions

Regions and subregions used in analysis (2011 Output Areas)

This work was funded by the Rural & Environment Science & Analytical Services Divsion of the Scottish Government.

0   50   100 km

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Western Isles - SPA

North and West Highlands - SPA

Northern Isles - SPA

South and East Highlands - SPA

all other areas - not in SPA

Argyll and Bute - SPA

Bold colours show the SPA and its six subregions (labelled). Light colours and grey show the 'not in SPA' region (subregions not labelled).

■ Urban area
— Coastline
— Scotland/England border

Southern Uplands - SPA

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The calculation of the SPA is described in Working Paper 1, available for download at the project webpage: http://www.hutton.ac.uk/research/projects/demographic-change-remote-areas.
SPA/not in SPA areas and subregions, and urban areas derived from 2011 Output Area Boundaries: Clipped to the coastline (MHW) © Crown copyright. Data supplied by National Records of Scotland. Areas classified by Scottish Government Urban Rural Classification 2013-2014, based on information in Lookup Files (http://www.gov.scot/Resource/0046/00464793.zip) © Crown copyright. Contains public sector information licensed under the Open Government Licence v3.0. Scotland/England border from Ordnance Survey StrategI® data, coastline from Ordnance Survey Boundary-Line™ data. Colour scheme adapted from information at http://colorbrewer2.org/ © Cynthia Brewer, Mark Harrower and The Pennsylvania State University.

The second and third working papers (Hopkins and Copus, 2018, Copus, 2018) present the demographic narrative of the SPA, beginning in 1991 and looking forward to 2046. The findings make challenging reading. It is well known that areas like the SPA have a long history of out-migration and population decline. This seems to have reversed temporarily in the early years after 2000, but resumed after about 2007/8. The process of "shrinking" has been accompanied by an unbalanced age structure; - relatively small cohorts of children and persons of working age. This legacy of past out-migration has serious implications for the future. If recent migration patterns are assumed to continue the population of the SPA will decline by almost 30% by 2046. Negative trends are expected in all six sub-regions. The scale of the challenge is illustrated by the fact that it is estimated that net migration of approximately +1,000 persons per year would be required to stabilise the SPA population.

One of the questions raised by this rather stark prediction is how services, both public and private can be maintained for the population and businesses of the SPA. Of course, service providers in this part of Scotland have a long history of adapting to the difficulties posed by long distances and a very thinly spread client base. In recent years the challenge has been intensified both by public sector spending constraints, and by the pace of technological change, which has affected both provision arrangements and the expectations of consumers.

This working paper initiates a strand of work focusing upon the issues associated with provision of "Services of General Interest" (SGI) in the Scottish SPA. It has two main elements: The first is an account of an initial consultation of SPA stakeholder, to elicit their views on key concerns relating to services in their area. The second is a comprehensive overview and classification of services, leading to a proposal of a set of "exemplars" which will be investigated in greater depth in order to better understand the special constraints and opportunities facing both providers and users in the SPA.

2. The Views of Stakeholders and Community Leaders

To inform the project's understanding of service provision in sparsely populated areas and its relationship to demographic change, interviews were conducted with community leaders from development trusts in Highland, Shetland, the Western Isles and Argyll and Bute with the aim of capturing the perspectives of those involved in community regeneration initiatives. Interviewees were identified through the Development Trusts Association (DTA) Scotland's directory of members. Additionally, representatives from Highland Council, Comhairle nan Eilean Siar, Orkney Islands Council, Shetland Islands Council, NHS Highland, Highlands and Islands Enterprise (HIE) and Police Scotland were interviewed for their perspectives as stakeholders in the future sustainability and prosperity of Scotland's SPA.

With both groups, interviews explored current and future issues in service provision to Scotland's SPA and their impact on population change, and which services are particularly sensitive to demographic change and would therefore benefit from greater focus in the next phase of the project. Participants were asked to consider services in the broadest sense, including those delivered by public, private and third sectors. Key messages arising from these interviews are discussed below.

Current Issues

When asked about service delivery issues in sparsely populated areas, participants highlighted three current concerns that interact to create an increasingly challenging environment, namely: the dispersed and diverse geography of the area; demographic imbalance; and growing financial constraints.

Geography

The SPA reaches across much of the extensive and heterogeneous landmass of mainland Scotland, encompassing mountains, lochs and remote peninsulas, as well as many of the country's 93 inhabited islands (National Records of Scotland, 2013), which stretch up the west and north coasts and lie up to 200 miles offshore.

This landscape presents practical and financial challenges for providing services. First, the remoteness of some parts of the landscape combined with difficult terrain can mean that certain areas are hard to reach. This has been especially apparent in recent years with respect to mobile and broadband coverage, which have been slow to reach more remote parts of the SPA, partly because they make less viable options than more populated areas, but also because of the logistical challenges involved in laying cables across the Minch and finding technologies that can deliver a signal over remote and mountainous regions to scattered populations.

Second, due to these geographical characteristics, providing services to the SPA can be costly. In illustration of this, stakeholders referred to the relative cost of collecting waste on islands and in small communities in the SPA compared to towns: while bins can be collected from 1000 households in an urban area quickly and cheaply, it takes much longer and requires more fuel for a lorry to collect the same number of bins from a population distributed across miles of single track roads. Orkney Islands Council has approached this issue by operating different refuse collection models in smaller communities from its more populated areas: while Mainland Orkney has a wheelie bin-based system, where waste is collected directly from households, the satellite islands have recycling centres where people bring their recyclables, which offers a more cost effective solution.

Third, stakeholders from local authorities in the SPA mentioned the difficulty of organising services in such a way that they are cohesive enough to be manageable across diverse geographies yet local enough that they respond to needs at a community level. This extends to a demand from communities to see council leadership travelling from their offices, which are usually in centralised locations, into their localities, showing interest in local issues and getting involved. As one stakeholder noted:

> Sometimes there's nothing to be done but get on a plane, get in your car, get on the boat […] That's an important part of not being remote and not sitting in an office in […] miles away from the communities you're serving.

The islands in the SPA have an additional layer of geographical challenges in that they are separated from mainland Scotland and each other by water and therefore have a strong reliance on air and ferry links, which provide lifeline services to the islands. Operating these routes introduces a host of concerns regarding cost, capacity, frequency and reliability, all of which directly affect the viability and sustainability of the island communities as places to live and work.

Demography

A second key area of concern with respect to service provision in the SPA is the demographic profile of these sparse areas. While some local authority areas in the SPA have seen small population increases in recent years – notably Highland and Argyll and Bute – this was attributed to centres of population outwith the SPA itself. Inverness, in particular, has seen a substantial and sustained population increase in recent decades while in more peripheral parts of Highland the population is in decline.

Of particular concern is the trend towards an increasing proportion of older people and a decreasing proportion of people of working age in the SPA, resulting in what is perceived as a potential imbalance between service requirements and the workforce available to provide these services.

The ageing population was seen as the result of a combination of the "baby boomer" generation now reaching older age, increased life expectancy and an incoming population to SPAs of older rather than younger people, often retirees. Meanwhile, there is a trend among young people to leave the local area to study in urban centres, acquiring qualifications and experience that align with more lucrative and attractive city jobs. While some of these individuals have a strong attachment to place and would like to return to their communities, this is negated by local employment opportunities offering attractive career prospects and availability of affordable housing. The cost of living in the SPA along with access to transport, broadband, education, healthcare, leisure facilities and "the basics of modern life" were also mentioned as factors that deter the return of younger generations, resulting in a complex web of factors that has historically been challenging to address. As one island participant observed:

> There's no [bus] service beyond 6.30 in the evening so why would a young person expecting a younger person's lifestyle, why would you stay in one of the islands? You don't even have Facebook or mobile connectivity. These things are a limiting factor to anyone who's thinking about moving to those communities and also for the young people that are born and bred in these communities in terms of their decisions as to where they might go for the next stage of their life because modern lifestyle expects these communications, be that physical, e.g.

going to the gym at 7pm on a Wednesday night, or logging in to social media. These issues are critical for population growth but also for sustaining population.

Some participants cited a finding of a recent Highlands and Islands Enterprise report into young people's attitudes and aspirations, that once the population of young people has fallen below a certain level, an area becomes less attractive for young people to live since their peers have left (HIE, 2015).

This issue, of an increasing population of older people combined with a decreasing population of younger people, was uniformly seen by participants as critical to the viability and sustainability of SPA communities, and there was strong awareness of the need to increase the working population, not just to provide services for older people but also to drive economic success more generally.

Attraction and retention of young workers was a recurring theme in the interviews, with examples given of difficulties recruiting to key roles in healthcare and education and a sense of fragility borne from a reliance on individual skilled staff. One participant from Shetland gave an example of delivering services to the six island airfields. This requires recruiting people to the fire service to serve the airfields during their hours of operation, which can be difficult and exposes a gap in the resilience of the service: without those key staff members, airfields cannot remain open and the air service cannot run.

Financial

The third underpinning factor mentioned by participants in relation to current issues in service provision to the SPA was the financial pressures emerging from recent and forthcoming reductions in public sector funding, with stakeholders voicing concern about being able to sustain current levels of service on a reducing budget. Arguably, this poses particular risks for the SPA, which is more expensive to provide services to per head of population than the more heavily populated areas within the same local authorities. Island authorities in particular have additional yet significant operations such as air and ferry services to manage within decreasing budgets. One island stakeholder commented on the fact that reduced budgets in some ways force a degree of centralisation as local authorities try to reduce costs, yet at the same time they are trying to run a strategy of community empowerment.

Provision of primary and secondary education was highlighted by stakeholders as a key current issue in service provision that is strongly linked to inward and outward migration. Representatives from Highland Council, in particular, talked about the difficulties of maintaining approximately 200 schools across a large geographic area, some of which have few pupils. This can lead to much higher unit costs of education per pupil than in urban areas, with strict, Scottish Government-imposed restrictions on closure.

Future Concerns

Against a backdrop of a challenging geography, the twin issues of demographic imbalance and reductions in budgets were seen by participants as interacting with one another, with limited finances constraining efforts to regenerate communities and drive economic growth. When asked about future issues in service delivery, participants placed these issues very much to the fore, particularly since further cuts to local authority budgets are anticipated over the coming years.

There was a sense of needing to manage expectations – of local residents and businesses as well as the Scottish Government – regarding what is possible with significantly reduced funding. Participants also talked about the issue of "fair" or "equal" access to services across the SPA, where provision of on a par with more populated areas would be very costly. In the words of one stakeholder:

> It would be more convenient […] if everyone lived in [a population centre], but they don't and it's our job to support them, but that cannot be equitable. We need to find solutions and also to understand that they could be more expensive. There also has to be a bottom line standard that everyone is entitled to, particularly with basic universal services - education, health.

Another noted: "We can never get equal access to services but we can aspire to get fair access to services". This is seen as a delicate balance: if local authorities were to provide vastly different service levels in an inequitable way, it would result in challenge from residents and elected members.

Responses

In light of current and future issues in service delivery throughout the SPA, particularly in terms of available funding, stakeholders and community leaders are adopting new models to ensure sustained levels of service. As one stakeholder put it:

> These are problems faced by the whole of Western Europe and other parts of the globe but I think our demographic shift is more extreme so the problems tend to come to us first. We're the pioneers of having to find new models. And in a way that's the solution, to try and see ourselves as having to find new ways of doing things.

Ambitious "new ways of doing things" are being developed under the Community Empowerment (Scotland) Act which sees a new emphasis on communities having more say in – and in some cases taking on – the running of some services, including planning, execution and decision-making. One participant made a strong case for this agenda:

> If we want people to remain living in our most deeply peripheral communities then we're going to have to find innovative ways to disperse jobs from [towns] out into these communities, to put new services into these communities and give communities greater ownership of these services in their communities. We can't shy away from the fact that there may be some initial resistance and a requirement for additional finance to allow that to happen in the first instance.

Orkney is operationalising the Community Empowerment agenda through the appointment of island "link officers" to be a first point of contact locally on island business, with a view to them eventually having a role on community councils, which will make decisions about the local allocation of resources. In the Western isles, one community has taken on responsibility for elements of its community bus service on the premise that they can design a service that is closer to what the community needs and wants. Elsewhere, participatory budgeting is being introduced as a way for communities to generate ideas for projects and vote on how to allocate resources, to encourage involvement in local decision making and engender a culture of community participation.

There has also been movement towards service integration, particularly in the area of health and social care, as a response to delivering services in smarter, more efficient ways. NHS Highland and Highland Council were first to integrate their health and social care services in 2012. This means that NHS Highland reports to Highland Council on issues relating to adult care, and Highland Council reports to NHS Highland on issues relating to children and families, and the service is run with a single budget, single management and single governance. This approach is now being rolled out across NHS Scotland and local authorities.

Finally, participants gave examples of the use of technology to achieve service innovation in the SPA. Highland Council is currently looking at opportunities to use tele-health in housing to monitor residents' health and alert care services where necessary, while Comhairle nan Eilean Siar have set up 'e-Sgoil' (Electronic School) to provide lessons over the broadband network to remote locations across Scotland, enabling greater subject choice for pupils in rural schools.

Generalisability across the SPA

Stakeholders and community leaders strongly emphasised the heterogeneity of Scotland's SPA in terms of geography, culture and economic challenges.

The SPA crosses several local authorities with administrative responsibilities in more populated areas, which itself constitutes a challenge for service provision. In the interviews, stakeholders with responsibilities across the Highlands emphasised the size and diversity of the region, which encompasses the city of Inverness, several towns including Dingwall, Thurso and Aviemore, "accessible rural" regions in the vicinity of these population centres and therefore within driving distance of their services and facilities, and more "remote rural" areas such as north-west Sutherland where populations are smaller and more distributed and provision of services can be more challenging. Similar observations were made regarding Argyll and Bute, which encompasses the towns of Bute, Campbeltown and Oban, less populated mainland areas and the largest number of islands of any local authority area. Island authority representatives made the same observation regarding the main townships for the outlying island groups (Stornoway, Lerwick and Kirkwall) where services tend to be concentrated, accessible areas nearby and more distant settlements, sometimes a long distance by road or sea.

Participants spoke about the difficulty, therefore, of identifying challenges and solutions to service provision that apply equally throughout the region, and highlighted regional heterogeneity as a key challenge of administering their responsibilities evenly and effectively as public servants or community leaders. One participant cited an example of services for people living in poverty in rural parts of Scotland. A young person from a deprived area attending Inverness High School will encounter various forms of support through the school, because the school has strategies for supporting them. A child with the same issues attending secondary school in a less populated part of the country is unlikely to receive the same level of service since the challenges of deprivation are not something the school necessarily has to deal with every day.

Another noted how Highland Council have responded to the challenge of diversity within the region by dividing the Highland local authority into nine geographical areas within which community partnerships have been created in order to unite public agencies at a local level in developing Community Improvement Plans. However, while division into nine areas represents much greater

granularity than is normally afforded by Highland Council, some Highland residents would say that it is not local enough since these areas are still significant geographic masses. Therefore, there is a challenge around organising services in a way that is manageable for Highland Council and yet local enough that people feel a sense of ownership and belonging.

In addition, some participants noted that there is disagreement within communities with respect to the main issues of concern, depending on people's personal circumstances. For example, wealthy retirees who have moved to the SPA might have a strong voice in the community but different priorities from young people the younger generation.

The island local authority areas (Comhairle nan Eilean Siar, Orkney Islands Council and Shetland Islands Council) were felt by stakeholders to have particular sets of issues in common. In 2013 they formed an 'Our Islands – Our Future' campaign, one outcome of which was a commitment from the Scottish Government, through the Islands (Scotland) Bill, to 'island-proof' national policy – in other words, to check the applicability of its decisions to the particular needs and characteristics of the islands and defer responsibilities or make differential adjustments where appropriate (The Scottish Parliament, 2017). Crucially, this enables the island authorities to have their voices heard before policy is implemented and therefore to influence decisions that may have negative implications for island settings. This is not to say that the islands or the island groups face a uniform set of service provision challenges. The Shetland Charitable Trust, for example, has a large fund that can be disbursed to local charities, organisations and projects for the benefit of Shetland communities, which does not exist in Orkney or the Western Isles.

3. Summary Classification of Services of General Interest

Interviews with stakeholders and community leaders about Services of General Interest in the SPA identified a wealth of issues, including challenges and successes. Specific reflections on individual services have been distilled into a categorisation of household services (Table 1) and business services (Table 2) and further elaborated in the Appendix. In the tables below, they are categorised according to the following key facts:

- Delivery mode – how is the service delivered (e.g. through a network infrastructure or at a fixed point in a town)?
- SPA sensitivity – is delivery of the service affected by sparsity, i.e. do SPA users receive an inferior service?
- Threats – are there threats to future delivery of the service in the SPA?
- Opportunities – are there opportunities for future delivery of the service in the SPA?

In addition, the Appendix provides details of the following:

- Who provides the service?
- How is it funded?
- Who is involved (public/private/third sector)?

Table 1. Classification of Household Services of General Interest

Service	Delivery mode	SPA sensitive ?	Threats	Opportunities
Utilities				
Energy supplies	Network	Yes	Limited gas	Renewables
Water and sewerage	Network	Yes	None known	None known
Waste/recycling	Mixed	Yes	Rationalisation	None known
Communications				
Phone (landline)	Network	No	None known	None known
Broadband	Network	Yes	Viability, logistics	Scot Gov R100
Mobile	Network	Yes	Viability, logistics	None known
Postal delivery	To door	No	USO withdrawal	None known
Parcel delivery	To door	Yes	Higher charges	None known
Education				
Nurseries	FP Local	Yes	Rationalisation	None known
Primary schools	FP villages	Yes	Rationalisation, staffing	None known
Secondary schools	FP towns	Yes	Rationalisation, staffing	Digital
Special needs support	FT towns/cities	Yes	Rationalisation, staffing	None known
Vocational education	FP towns/cities	Yes	Out-migration	UHI, digital
Higher education	FP cities	Yes	Out-migration	UHI, digital
Adult/continuing ed	FP towns/cities	Yes	Out-migration	UHI, digital
Health				
Primary care (GP)	FP villages	Yes	Rationalisation, staffing	Digital
Maternity	FP towns/cities	Yes	Rationalisation	Digital
Mental health	FP towns/cities	Yes	Rationalisation, staffing	Digital
Accident & emergency	FP towns/cities	Yes	Rationalisation, staffing	None known
Other in-patient services	FP cities	Yes	Rationalisation, staffing	None known
Opticians	FP towns/cities	Yes	Rationalisation, staffing	None known
Vet	FP towns	Yes	Rationalisation	None known
Pharmacy	FP towns	Yes	Rationalisation	None known
Emergency				
Police	FP villages/towns	Yes	Rationalisation, staffing	None known
Fire (retained)	FP villages	Yes	Rationalisation, staffing	None known
Ambulance	FP towns/cities	Yes	Rationalisation, staffing	None known
Social/welfare services				
Social workers	FP towns	Yes	Rationalisation, staffing	None known
Access to benefits	FP towns	Yes	Rationalisation	Digital
Care homes (elderly)	FP villages/towns	Yes	Staffing	Service integration
Childcare	FP local	Yes	Staffing	Service integration
Transport				
Bus service	Network	Yes	Rationalisation	None known
Dial-a-ride	Flexible	Yes	Viability	Community ownership
Rail	Network	Yes	Rationalisation	None known
Taxi	To door	Yes	Viability, staffing	None known
Ferry	Network	Yes	Rationalisation	None known
Plane	Network	Yes	Rationalisation	None known
Retail				

Bank	FP towns/mobile	Yes	Rationalisation	Digital, mobile
Post Office	FP villages/towns	Yes	Rationalisation	Mobile
Convenience store	FP villages	Yes	Viability	Community ownership
Supermarket	FP towns	Yes	Rationalisation	Digital
Petrol	FP towns	Yes	Rationalisation, cost	None known
White goods, furniture etc.	FP towns/cities	Yes	Access, cost of delivery	Digital
Clothing	FP towns	Yes	Access	Digital
Entertainment, culture and leisure				
Cinema	FP towns/mobile	Yes	Rationalisation	Mobile
Theatre/concert hall	FP cities	Yes	Rationalisation	None known
Restaurants/cafes	FP villages	Yes	Rationalisation	Community ownership
Clubs and societies	FP local	Yes	Population decline	None known
Library	FP towns/mobile	Yes	Rationalisation	Community ownership
Museum	FP cities	Yes	Rationalisation	Community ownership
Sports facilities	FP villages/towns	Yes	Viability	Community ownership
Television	Network	Yes	Digital	Digital
Radio	Network	No	Digital	Digital

Table 2. Classification of Business Services of General Interest

Service	Delivery mode	SPA sensitive?	Threats	Opportunities
Business advice and support				
Start-up advice	FP towns/cities	Yes	Rationalisation	Digital
Business development	FP towns/cities	Yes	Rationalisation	Digital
Training/CPD	FP cities	Yes	Access	Digital
Legal and financial				
Accountancy	FP towns/cities	Yes	Access	Digital
Taxes and customs	FP cities	Yes	Rationalisation	Digital
Legal advice	FP towns/cities	Yes	Access	Digital
Retail				
Office supplies	FP towns	Yes	Access, cost	Digital
Materials	FP towns/cities	Yes	Cost of delivery	Digital
Communications				
Storage	FP towns/cities	Yes	Cost	None known
Marketing	FP towns/cities	Yes	Access	Digital
IT/printing	FP towns/cities	Yes	Access	Digital

*FP = Fixed point

4. Selection of Exemplar Services

Interviews with stakeholders and community leaders were rich and wide-ranging, reflecting the breadth and scale of service provision issues as well as the diversity of Scotland's SPA, and identified a set of "exemplar" services that we offer below for consideration and feedback. These are services that were identified by participants as particularly sensitive to sparsity, that affect households and businesses across the SPA and where examples exist of innovative responses to the challenge of provision.

Transport

The transport infrastructure was identified as fundamental to service provision across the SPA. As one participant noted, "They all [services] have their particular features but issues of distance and transport underpin everything." Some improvements to physical connectivity were noted in recent years. More flights have opened up to different locations in the UK and Europe through Inverness airport, notably Heathrow and Schiphol, enabling people to live in the Highlands while working and retaining an income from elsewhere. Dualling of the A9 between Perth and Inverness was also anticipated to bring economic opportunities to the Highlands.

However, despite its underpinning role in the economy of the SPA, physical connectivity was seen as costly and fragile with wide implications for residents and businesses should there be a break at any point of the infrastructure. Ferry and air services, in particular, appear to be susceptible to adverse events. Examples – albeit isolated – were given of older ferries breaking down, resulting in a reduced or no ferry service for island communities for weeks at a time. With respect to air services, staffing of air fields can be problematic because fit and able people are required to run the fire service, which is becoming a challenge in small communities with ageing populations. Should a fire fighter leave or become unwell, the lifeline service becomes inoperable, exposing a gap in the island's resilience. Arguably, as populations decline and people get older, the risk of these events increases.

More commonly, participants mentioned infrequent ferry and air travel as a constraint on doing business and accessing services. Additionally, the cost of air and ferry travel has a direct impact on the cost of living and of running a business on an island, which can work against efforts to grow the population.

Digital

Broadband was seen by participants as key to future service delivery and innovation across a number of areas and to attraction and retention of the working-age population. Broadband provision was highlighted by participants as an area of recent improvement across Scotland as a whole and in some rural areas In particular, HIE has worked with BT to extend provision of superfast broadband to 84% of homes and businesses in the Highlands and Islands through the installation of fibre cables, including subsea cabling to the Inner and Outer Hebrides. In addition, community initiatives have filled in some gaps where fibre is not available through funding from Community Broadband Scotland. The resulting higher speeds and better coverage were cited as a pull factor in drawing people to the SPA to work in a self-employed capacity and are seen as "levelling the playing field" as technologies emerge that mean it should no longer make a difference for some industries where workers are located, as long as the digital infrastructure is suitable.

However, participants emphasised that rollout of broadband has taken a long time, efforts to get funding in some areas have been slow to come to fruition and areas remain where broadband is unavailable, with the result that community leaders feel "worn down" and that it is an "ongoing nightmare", particularly as services such as banks, post offices and benefits offices close local branches and offer online services as an alternative. Furthermore there is concern that some parts of the SPA will not have superfast broadband by 2021, as per the Scottish Government's ambition, and some scepticism was expressed concerning the feasibility of plans to reach more remote parts where distances and terrain presents challenges to regular solutions. Just as broadband can be a pull factor to attract people to live and work in the SPA, so the lack of digital connectivity can be a deterrent, particularly to the younger, skilled workforce that the area is seeking to recruit and retain. As one participant put it:

> The importance of fibre broadband is an area of particular interest because the modern world economy is online. If you want to be competitive then you need the upload and download speeds. It's not just digital content businesses; it's all businesses. So having that level playing field for businesses in the most peripheral areas is really important.

While rural digital connectivity has been the subject of previous research, there is perhaps an opportunity to explore the inequality gap between those who do and do not have access, which is arguably becoming more acute as some parts of the SPA are part of the digital infrastructure while neighbouring parts are not. Moreover, for many the gap is now a longstanding one, which has consequences in itself. As one participant noted from a personal perspective:

> But my biggest concern is the disadvantage that my children are at. As they get older and as our digital world develops, they're going to become more and more disadvantaged compared to their counterparts […]. The school is great, they teach them how to use a computer, but it won't be as embedded.

Primary and secondary education

Education provision at primary and secondary school level is a longstanding issue for SPA residents that is strongly linked to inward and outward migration, with particular concerns around declining school rolls, cost of provision, distance from pupils' homes, recruitment and retention of staff and breadth of curriculum. Education was also recognised by participants as being a particularly sensitive subject for communities, who often associate an open school with a viable and sustainable future.

Recently, new approaches have started to emerge from parts of the SPA that promise to address some of these longstanding issues. Highland Council maintains a network of around 200 schools across a large geography, some of which have few pupils. This leads to much higher unit costs of education per pupil than in urban areas. Amid cuts to their budget, they are piloting an approach that "clusters" schools around integrated management structures. This means that, rather than employing a head teacher to each school, they are grouping schools by geography and providing one head teacher and one management structure to manage all of the schools, which makes the schools less expensive to run, improves their viability and potentially secures a more robust staffing and curriculum offer for pupils. At the time of the interviews, seven associated school groups had been established in the region, on a community by community basis.

A different response has emerged from the Western Isles, where technology is being used to provide secondary education across a digital network through the e-Sgoil (electronic school) initiative. This aims to "provide a wider and more equitable choice of subjects for pupils across all secondary schools in the Western Isles" and beyond.

The project team proposes that these – and other – new approaches to the provision of education in areas where conventional methods are becoming too costly would make interesting cases to explore in more depth, to shed light on the formulation and effectiveness of stakeholder responses.

Care for the elderly

Participants' concern about care for the elderly grows directly out of the demographic imbalance in SPA communities that has seen a growing elderly population and a smaller working age population, and was felt to be an issue of increasing importance in the future. Indeed, given population projections, there should be a huge expansion in demand for care at the same time that the available workforce for that sector is going to shrink dramatically, and there are examples of communities that are already struggling to provide day care for older people because they can't recruit the required staff.

NHS Highland is addressing the workforce shortage in new ways through its integrated approach to health and social care. Through an arrangement with Highland Home Care, local organisations in Boleskine, Black Isle and Cromarty have taken on responsibility for the delivery of care services in their area on the basis that they are doing it for their own community. However the issues of an ageing population are widespread and increasing throughout the SPA and the implications of new models of delivery have not been fully assessed.

Some of the possibilities for future care provision in SPAs involve providing care at home through digital technologies and therefore link to issues around mobile and broadband connectivity.

Specialist services

Several stakeholders highlighted the non-viability of offering more specialist services in the SPA, for example mental health services, family support, substance abuse and youth crime, because of the costs and logistical difficulties of providing appropriately trained staff and resources across a large and sparsely populated area. This results in residents experiencing a different level of service than residents of urban areas and raises questions of equity and fairness. For example, a child with mental health difficulties in Inverness will have access to a range of health, social care and education options, which might not be available to a child in the SPA.

Stakeholders gave examples of discrete projects that aim to respond to some of these issues. Highland Council is funding a Young Carers project in Skye and Sutherland that aims to address this issue by providing a dedicated support service for young people who have responsibilities looking after families or neighbours. Highland Council is also involved in trialling an electronic mental health assessment with peripheral parts of Norway, Sweden and Finland, which will determine whether someone needs a more specialist assessment, so that the first tier of access is available in these remote regions. And NHS Highland are piloting the use of technology to address the issue of access to specialist health services in the SPA in the form of a "pill cam": instead of patients going into hospital for an endoscopy, they can go to a GP and swallow a pill with a camera inside and send the images to a specialist.

Specialist services, by definition, affect smaller segments of the SPA population than some of the other exemplars listed here. They are, however, of critical importance to the individuals who need them. In light of the examples emerging from the interviews with stakeholders and community leaders, the project team feels that this will be an important area to understand in greater depth and to monitor changes in provision during the next phase of the project.

5. Next Steps

Through the initial round of interviews reported above, stakeholders and community leaders have articulated the relationship between the selected exemplar service areas and sensitivity to sparsity and population change. The links are clear across regions of the SPA, albeit with variations between locales and communities, and have implications for both households and businesses, and therefore the services constitute substantive areas for further exploration. As such, the project team proposes to investigate these five areas in greater detail over the course of the next couple of years.

An initial step (O4.2i) and will be to establish the narrative of recent changes in the geography of provision, across the SPA, of each of the exemplar services, examining the rationale offered for the changes made. This narrative will be set against objective demographic data, in order to assess the relative importance of sparsity and population trends compared with other factors (such as austerity, changing administrative arrangements, or technological change). This will clearly be a task requiring both desk-based work (reviewing policy documents etc) and consultation with both providers and service users.

The next step (O4.2ii) – which will, in practice, be carried out in parallel with the review of recent developments, using the same methods and approaches - will be to collate available information about anticipated future developments in terms of the delivery of the exemplar services. The narratives of recent change and anticipated future developments will be summarised in a working paper/policy brief which will in turn form a framework or starting point for a stakeholder workshop, to be held at a convenient venue within the SPA. The objective of this workshop will be to gather responses and inputs to the working paper, and to try to glean or distil a consensus about key trends, issues and underlying principles in relation to the provision of various kinds of services in the SPA.

The qualitative analysis of O4.2 will be supported by an exploratory geographic information system (GIS) analysis of the relationship between patterns of population change and the evolution of the geography of SGI provision (O4.3). This will entail detailed mapping/representation of service delivery structures for at least two of the exemplar services, and their recent evolution. These maps of delivery structures will be compared/overlaid with maps of recent population change at the data zone level, and projected change in the six SPA sub-regions. This analysis will seek to answer questions such as:
- How have service providers responded to population sparsity and shrinkage, in terms of the geography of provision?
- Can we identify areas which are "under threat" in terms of the likely future development of their service delivery structures?
- Which kinds of delivery mode (fixed point, doorstep, network etc) have been most affected, and which have been more responsive?

- Are there lessons to be learned or basic principles of good practice to be derived from the analysis of past changes in the geography of service provision?

The final objective (O4.4) of this element of RD 3.4.1 is a collation of findings and potential implications for policy. It will also review novel approaches to SGI delivery in sparse and remote contexts (both within the UK and in other parts of Western Europe), considering how these could be used to improve provision of services in specific areas identified by the GIS analysis as "under threat".

6. References

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Appendix. Detailed Classification of Services of General Interest

Table 1. Classification of Household Services

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
Utilities							
Energy supplies	Privatised energy companies	Commercial	Private	Fixed infrastructure network. Delivery to doorstep for oil and coal	No gas supplies beyond much of SPA, also electricity network installation to remote properties at client's expense. Higher levels of fuel poverty in SPA	'Older and colder' housing stock. Limited gas network	Renewable energy as possible opportunity
Water and sewerage	Scottish Water, or individual supplies and septic tanks.	Commercial – but billed in association with Council Tax.	Private (but regulated)	Fixed infrastructure network, or individual household supplies/tanks	Private water supplies may be unreliable and of poor quality. Septic tanks may require expensive maintenance/ emptying	None known	None known
Waste collection/recycling	Council	Council	Public	Doorstep, street or fixed point	Higher cost per head	Continued rationalisation. Dependency on transport infrastructure	None known
Communications							
Phone (landline)	BT provide the infrastructure, service provided through private companies	Commercial	Private (but regulated)	Fixed infrastructure network	Uniform tariffs (but differing between companies)	None known	None known

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
Broadband	BT Openreach provide fibre infrastructure, service provided through private companies	Public/Private/3rd Sector	Public/3rd Sector	Fibre/satellite/radio network	Speed issues where exchange is distant. No coverage in some areas	Commercial viability. Geographical and logistical challenges. Developing inequalities	Scot Gov 'R100' programme
Mobile	Private	Commercial	Private	Network of masts	Poor coverage or 'not spots' in remote areas	Commercial viability. Geographical challenges. Developing inequalities.	None known
Postal delivery	Royal Mail	Commercial	Private, but with USO	Doorstep (daily)	Not currently (USO)	USO withdrawal?	None known
Parcel delivery	Various logistics companies	Commercial	Private, with no USO	Doorstep – but with delays, and partial exclusion of H and I.	Yes – delivery in H and I may be refused or additional charges imposed	Further limitations to delivery in H and I? Extension of additional charges?	None known
Education							
Nurseries	Council/Private	Council + Private fees	Public/Private	Fixed points, usually local to user	Further from residence	Threats of closures/ rationalisation.	None known
Primary schools	Council	Council	Public	Fixed points, usually in villages	Further from residence	Threats of closures/ rationalisation. Availability of workforce	None known
Secondary schools	Council	Council	Public	Fixed points, usually in towns	Further from residence	Threats of closures/ rationalisation. Availability of workforce. Narrower subject range	Digital delivery, e.g. e-Sgoil
Special needs support	Council	Council	Public	Fixed points, usually in towns	Further from residence	Threats of closures/rationalisatio	None known

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
				and cities		n. Availability of staff	
Vocational education	Council/colleges	SFC	Public	Fixed points, usually in towns and cities	Further from residence	Threats of closures/rationalisation. Narrower subject range?	UHI, digital technologies
Higher education	Universities (incl. UHI)	SFC	Public	Fixed points, usually in cities (UHI on more distributed access point model)	Out-migration for study – often perpetuated for first employment	Rationalisation	Dispersed (UHI) model, distance learning, digital technologies
Adult/continuing education	Councils	Councils	Public	Fixed points, usually in towns and cities	Out-migration for study – often perpetuated for first employment	Rationalisation	Dispersed (UHI) model, distance learning, digital technologies
Health							
Primary care (GP)	NHS Health Boards	NHS (general taxation)	Public	Fixed points, usually in villages	Dwindling number of GP surgeries – tendency to centralise in group practices in larger settlements	Continued rationalisation. Availability of workforce	Benefits of telemedicine
Maternity	NHS Health Boards	NHS (general taxation)	Public	Fixed points, usually in towns and cities	Centralisation of maternity services in larger centres at longer distances from SPA	Rationalisation likely to continue	Possible advantages of online consultations (pre and post-natal)
Mental health	NHS Health Boards	NHS (general taxation)	Public	Fixed points, usually in towns and cities	Rationalisation and centralisation in more distant larger centres.	Rationalisation likely to continue. Availability of	Possible advantages of online consultations and talking therapies.

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
					Travel time a disincentive to seek help	workforce	
Accident and emergency	NHS Health Boards	NHS (general taxation)	Public	Fixed points, usually in towns and cities	Rationalisation and centralisation in more distant larger centres. Dangerously long travel times in the SPA	Rationalisation likely to continue. Availability of workforce	None known
Other In-patient services	NHS Health Boards	NHS (general taxation)	Public (+ private – insurance based option)	Fixed points, usually in cities	Rationalisation and centralisation in more distant larger centres	Rationalisation likely to continue. Availability of workforce	None known
Opticians	Private Optician Businesses	NHS (general taxation)	Private sector – but with public subsidies	Fixed points, usually in towns and cities	Rationalisation and centralisation in more distant larger centres	Rationalisation likely to continue. Availability of workforce	None known
Vet.	Private Veterinary Practices	Fees	Private sector	Fixed points, usually in towns	Rationalisation and centralisation in more distant larger centres	Rationalisation likely to continue.	None known
Pharmacy	Private Pharmacy Businesses	Retail sales plus NHS subsidies	Private sector – but with public subsidies	Fixed points, usually in towns	Rationalisation and centralisation in more distant larger centres	Rationalisation likely to continue.	None known
Emergency							
Police	Police Scotland	Scottish Government	Public	Fixed points, usually in villages and towns	Response times are an issue	Rationalisation likely to continue. Availability of workforce	None known
Fire	Scottish Fire and Rescue Service	Scottish Government	Public	Fixed points, usually in	Response times are an issue	Rationalisation likely to continue.	None known

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
				villages, with retained firefighters		Availability of workforce	
Ambulance	Scottish Ambulance Service	Scottish Government	Public	Fixed points, usually in towns and cities	Response times are an issue	Rationalisation likely to continue. Availability of workforce	None known
Social/welfare services							
Social workers	Council	Council	Pu/Pr/3rd sector	Fixed points, usually in towns	Initial contact often requires attendance at an office. After that home visits may be available	Many small care homes struggling due to low funding from Councils. Availability of work force	None known
Access to welfare benefits	DWP	DWP	Public	Fixed points, usually in towns	Cost of public transport, or lack of transport a barrier for many would-be claimants	Further rationalisation	Routine transactions can be carried out online.
Care homes (elderly)	Private companies, charitable organisations	Council + Fees	Public/Private	Fixed points, usually in villages and towns	Going into care involves a move away from familiar surroundings, perhaps into an urban environment	Availability of workforce	Integration of health and social care
Childcare	Council/Private	Council + Fees	Public/Private	Fixed points, usually local to user	Further from residence/workplace	Increasing demand from working parents. Availability of workforce	Integration of health and social care
Transport							
Bus service	Private companies	Commercial – but	Private	Fixed routes –	Sparse service	Further rationalisation	None known

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
		many rural routes subsidised by Councils		but very sparse and low frequency within the SPA.			
Dial-a-ride	Council, Community organisations, Coops etc.	Council or 3rd sector	Pu/3rd Sector	Flexible – door to door, with various constraints	Barely viable	Rationalisation	Community ownership
Rail	Private companies	Commercial but subsidised by Scot Gov	Private/Public	Fixed routes	Limited geographical coverage	Rationalisation	None known
Taxi	Private companies	Commercial	Private	Door to door	Long distances makes it expensive	Viability. Availability of workforce	None known
Ferry	Council/Private	Scot Gov/Council/Private	Public/Private	Fixed routes	High cost per head of population	Rationalisation. Cost. Limited fleet	None known
Plane	Council/Private	Council/Private	Public/Private	Fixed routes	High cost per head of population	Rationalisation. Cost. Availability of workforce	None known
Retail							
Bank	Private	Commercial	Private	Fixed points, usually in towns. Also mobile	Access to fixed points requires travel	Further rationalisation	Online banking.
Post Office	Post Office Ltd	Commercial	Private	Fixed points, usually in villages and towns	Decreasing availability of fixed points throughout SPA	Further rationalisation	Mobile delivery
Convenience store	Private or community owned	Commercial or community coop	Pr/3rd Sector	Fixed points, usually in villages	Barely viable	Closure due to non-viability	Community ownership
Supermarket	Retail chains or local companies	Commercial	Private	Fixed points, usually in towns	Not accessible to those who do not have	Further rationalisation	Online shopping

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
					a car		
Petrol	Fuel retailers – mostly national chains	Commercial	Private	Fixed points, usually in towns	Sparse availability, high prices (but SG have a subsidy scheme)	Further rationalisation. Cost	None known
White goods, furniture etc.	Retail chains or local companies	Commercial	Private	Fixed points, usually in towns and cities	Not accessible to those who do not have a car	Further rationalisation. Cost of delivery	Online shopping.
Clothing	Retail chains	Commercial	Private	Fixed points, usually in towns	Not accessible to those who do not have a car	Cost of access	Online shopping
Entertainment, culture and leisure							
Cinema	Private chains or (rarely) community organisations	Mostly commercial	Pr/3rd sector	Fixed points, usually in towns. Also mobile, e.g. 'Screen Machine'	Fixed points not accessible to those who do not have a car (no public transport in evenings)	Further rationalisation	Mobile delivery
Theatre/concert hall	Private chains community organisations or council	Commercial, community or council subsidised	Pu/Pr/3rd sector	Fixed points, usually in cities	Not accessible to those who do not have a car (no public transport in evenings)	Further rationalisation	None known
Restaurants/cafes	Private or community organisations	Commercial, community	Pr/3rd sector	Fixed points, usually in villages	Not accessible to those who do not have a car (no public transport in evenings)	Further rationalisation	Community ownership
Clubs and societies	Community organisations	Community	3rd Sector	Fixed points, usually local to user	Lack of critical mass in membership	Population ageing and decline	None known
Library	Council	Public	Public	Fixed points, usually in towns.	High cost per head	Further rationalisation	Community ownership

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
				Mobile delivery in some areas of SPA			
Museum	Scot Gov, Council, community organisations	Public/community	Public/3rd sector	Fixed points, usually in cities	Access requires travel	Further rationalisation	Community ownership
Sports facilities	Council, private companies, community organisations	Public/commercial/community	Public/private/3rd sector	Fixed points, usually in villages and towns	Access requires travel	Closure due to non-viability	Community ownership
Television	BBC/Private companies	Public/commercial	Public/private	Terrestrial/satellite/digital	Limited digital access	Movement to Internet/broadband	Movement to Internet/broadband
Radio		Public/commercial/community	Public/private/3rd sector	Radio network	No	Movement to Internet/broadband	Movement to Internet/broadband

Table 2. Classification of Business Services

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
Business advice and support							
Start-up advice	Business Gateway	Council	Public	Fixed points, usually in towns and cities but local delivery of workshops and online advice/support	Travel to fixed points	Rationalisation	Online delivery
Business development	Highlands and Islands Enterprise	Scot Gov	Public	Fixed points, usually in towns and cities but local delivery of workshops and online advice/support	Travel to fixed points	Rationalisation	Online delivery
Training/CPD	Various	Public/private	Public/private	Delivery points usually in cities	Distance to delivery points	Access dependent on transport infrastructure	Online delivery, e.g. webinars
Legal and financial services							
Accountancy	Private companies	Commercial	Private	Fixed points, usually in towns and cities but online advice/support	Distance to offices	Access dependent on transport infrastructure	Online delivery
Taxes and customs	HMRC	Public	Public	Fixed points in cities but online and phone advice/support.	Distance to offices	Rationalisation	Online delivery
Legal	Private companies	Commercial	Private	Fixed points, usually in towns and cities but	Distance to offices	Access dependent on transport infrastructure	Online delivery

Service	Provider	Funding	Pu/Pr/3rd Sector	Delivery mode	SPA sensitive?	Threats	Opportunities
				online and phone advice/support			
Retail							
Office supplies	Private companies	Commercial	Private	Fixed points, usually in towns	Sparse availability, high prices	Access, cost	Online shopping
Materials	Various	Commercial	Private	Fixed points, usually in towns and cities	Delivery cost. Long supply chains	Cost of delivery	Online shopping
Communications							
Storage	Private companies	Commercial	Private	Fixed points, usually in towns and cities	Higher delivery costs	Fluctuations in cost of fuel	None known
Marketing	Private companies	Commercial	Private	Fixed points, in towns and cities but online and phone advice/support	Distance to offices	Access dependent on transport infrastructure	Online delivery
IT/printing	Private companies	Commercial	Private	Fixed points, in towns and cities but online and phone advice/support	Distance to offices	Access dependent on transport infrastructure	Online delivery