

Is Accessibility Planning Delivering Transport Change?

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1. Introduction

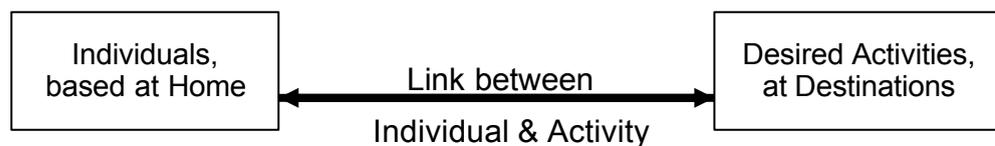
The origins of accessibility planning lie in the need to systematically consider people's travel needs and opportunities, and take action to tackle barriers to travel. Delivering accessibility goals requires not just a new appraisal toolkit, but also new delivery methods working with people and businesses.

The needs of people to work, shop, learn and access public services, cut across sectors and define the foundations for delivery of accessibility planning. Accessibility planning seeks to overcome the legislative, funding and administrative barriers to cross-sector delivery. This paper reviews the development of accessibility planning in Scotland.

2. *What is accessibility?*

At its simplest level, accessibility is the ease of reaching opportunities or the ease of being reached (Jones 1981). Accessibility is an attribute of people and goods rather than transport modes or service provision, and describes integrated systems from a user viewpoint. There are three primary components that make up accessibility, as shown in Figure 1.

Figure 1: Primary Components of Accessibility



Groups of individuals have a range of activity needs, that can be met through facilities provided at various destinations, with transport and communications providing the links between 'demand' and 'supply'. Accessibility can be examined primarily from two viewpoints: that of the individual (origin), and that of the service provider (destination). DHC (2000) characterises the understanding of accessibility in terms of three questions: "who"/"where", "what" and "how":

- Who or where is being considered – Accessibility is an attribute of people or places.
- What are the opportunities being reached - The land uses, activity supply points or resources (including people) that allow people or places to satisfy their needs.

- How: the factors that separate the people and places from the supply points
 - These can be distance, time, cost, information and other factors which act as deterrents or barriers to access.

It is important to be clear about the focus of attention, specifically whether accessibility is being considered from the viewpoint of people or places. When considering people, accessibility is about “the ease with which any individual or group of people can reach an opportunity or defined set of opportunities”; this is often referred to as origin accessibility. When considering places, accessibility is “the ease with which a given destination can be reached from an origin or set of origins”. This is usually referred to as destination accessibility, catchment accessibility or facility accessibility.

All definitions of accessibility include some reference to “who/where”, “what” and “how” components, but considerable confusion has resulted from differences in treatment about what is implicit and what is explicit. Organisations specialising in providing services, such as employment agencies, health services, supermarkets, etc. tend to use very simple proxies (such as distance) for “how”, and concentrate on the facilities available and the population characteristics within the catchment.

In contrast, transport planning has concentrated in greater depth on the “how”, looking in great detail at movement patterns between homes and destinations, with very little consideration of the “who” and the “what” (DHC 2000). People and opportunities have been considered within the planning of improved transport only to the extent that the characteristics of the people (e.g. physical disability or car ownership) or of the places (e.g. pedestrianised area) affect mobility and the demand for travel.

It is also important to note that the “how” component is broader than transport systems, and includes connections that do not involve travel. Telecommunications and technology are increasing the range of “virtual mobility” options available to connect people and opportunities (Kenyon et al 2002).

2. *The need for accessibility planning*

It has not proved to be possible to resolve transport policy debates solely within the domain of transport. Specifically, it is difficult to say whether more or less travel is preferable since economic, social and environmental goals can appear to conflict (Scottish Executive 2007). The need for accessibility planning therefore affects all modes of transport, sectors of business and groups of people to ensure that transport and wider service provision meets people’s needs. The concept of accessibility is almost universally supported, so accessibility planning, at least conceptually, provides a bridge between diverse policy aims towards practical delivery. It helps to make the connections

As a result, accessibility planning policies in Scotland are being delivered through new administrative, planning and funding mechanisms which have progressively extended to more policy areas since the early 1990s including:

- Land use planning policy delivery through SPG17.
- Transport policy delivery to recognise accessibility for particular places, and accessibility for particular people facing accessibility difficulties.
- Transport investment decisions under Scottish Transport Appraisal Guidance to identify the distribution of economic impacts and the social inclusion needs of all groups of people affected by transport investment.
- Closing the opportunity gap policies and social inclusion funding delivered through regeneration outcome agreements and community planning.

Underpinning the ability to progress accessibility planning is a strong evidence base using relevant qualitative and quantitative data.

3. The Built Environment and Accessibility

National planning policy guidance (Scottish Executive SPG17) emphasises the need for plans and proposals to demonstrate their accessibility impacts. In practice, most planning decisions have been reliant on qualitative analysis of accessibility factors, such as whether a development is located in a town centre or out of town. Town centres are often more accessible places but this very aggregate treatment of accessibility has meant that plans have not been as clearly focused at accessibility improvements for particular places or people as they could be.

Perhaps the most significant progress with accessibility planning for new developments has been the increasingly common requirements for business travel plans in new developments (Scottish Executive 2002). These plans are not just site specific in the way they tackle transport problems but they commonly include measures related to specific people, or groups of people. Measures to improve accessibility include:

- Public transport interventions to ensure that network coverage is appropriate for site specific needs.
- Investment in walking and cycling networks to improve local access opportunities.
- Personalised journey plans to help overcome information barriers to access.
- Ticketing solutions to help overcome cost barriers to access e.g. interest free loans for ticket purchase.
- Parking management options to help prioritise spaces for people who need them most.

However progress has been limited by the lack of a consistent approach to accessibility policy nationally, regionally, locally and at site specific level. For example many large hospital developments have benefited from site specific travel plans, but the land use planning process has not been able to ensure that the chosen locations for these new hospitals were able to contribute to improving access to healthcare and employment for patients and staff respectively.

In order to tackle these problems it has become clear that:

- There needs to be clarity on accountability for access to services - For example improved access to health has neither been seen as the core function of a Health Department or a Transport Department but it is now a core function of the Regional Transport Partnerships through the monitoring of progress on their access to health plans.
- Consistency is needed in measuring techniques – Describing development locations as “accessible” in planning applications is insufficient to meet the increasingly stringent requirements of SPG17. Best practice for transport assessments requires accessibility to be considered for all mobility groups including non car users.
- Planning policies need to be backed up with practical policy instruments to deliver change. Requirements of planning agreements can be hard to enforce so new funding mechanisms are being increasingly developed to build accessibility into the new developments e.g. car park charges to fund public transport.
- Quantitative analysis of accessibility (such as the travel time and cost with different options) is just as important as quantitative assessments of travel demand such as road capacity to the site.

Increasingly land use plans should be able to require developers to demonstrate consistency with specific quantified local, regional and national accessibility planning objectives to ensure that the policy principles translate into practical planning decisions. However land use changes slowly and statutory processes take time to adapt. An accessible built environment will therefore be a longer term deliver objective for accessibility planning.

4. Transport Policy

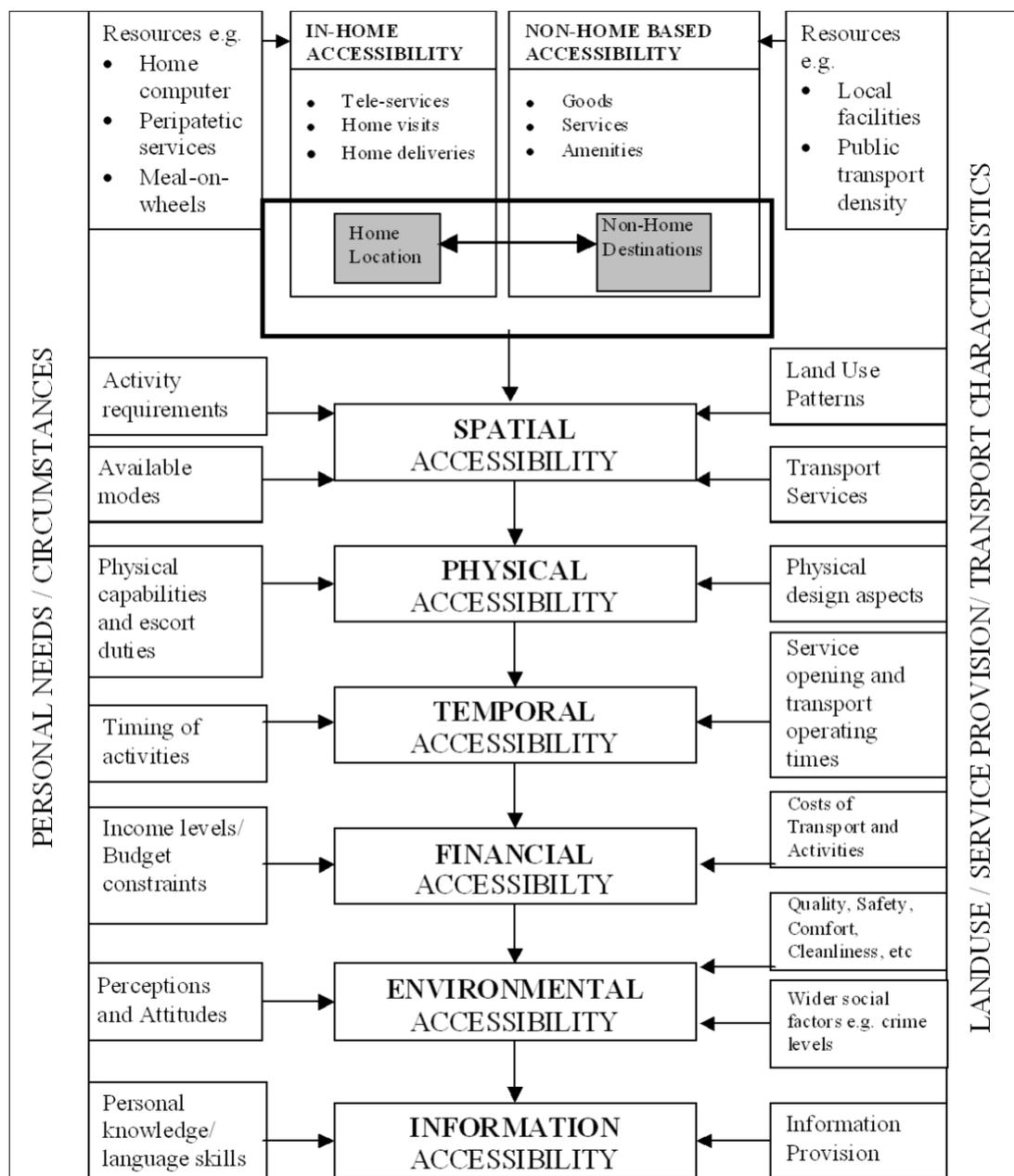
Although growing car ownership has substantially improved accessibility for many people, the effects of increasing congestion and changing provision and pricing for public transport have meant that for many people accessibility has been declining. Over the last decade accessibility aims have become increasingly central to policy recognising that:

- Investment should seek to improve connectivity so that network coverage is consistent with the economic and social needs of Scotland.
- Particular action is needed to improve accessibility for the least mobile people and rural dwellers.
- Accessibility through electronic networks needs to complement physical accessibility on the transport networks.
- Transport is a derived demand, and the economic and social needs that drive the demand need to be factored into transport decisions “making the connections through accessibility planning” (SEU 2003).

Although the policy goals have changed the delivery mechanisms are taking longer to follow. Professional and organisational cultures relate to modes, sectors and statutory roles, whilst accessibility goals relate to people and places. Whilst the dimensions of accessibility shown in Figure 2 are increasingly

defined as policy goals, the organisational and funding mechanisms are not yet structured around their delivery.

Figure 2 – Parameters of Accessibility



To embed accessibility planning more firmly within delivery greater clarity is needed on how plans to tackle each accessibility problems will be: identified systematically, managed accountably, funded from transport and non transport budgets, and monitored regularly. The policy frameworks at national, regional and local level are still developing to provide such clarity.

5. Appraisal and Audit

Improving accessibility as a national objective for appraisal was introduced in 1998 within the “new approach to appraisal”. Accessibility is such a broad concept that its application within appraisal can at first appear complex. Definitions are therefore of vital importance and the dimensions of accessibility are explained in Scottish Transport Appraisal Guidance (2003):

- Expressed accessibility (i.e. travel demand) is covered under the economy criterion in appraisal.
- Comparative accessibility looks at the distribution of accessibility impacts. The impacts on different groups in society can be compared by gender, geographical location, income, mobility characteristics etc. and are considered within social inclusion appraisals.
- Community accessibility describes the extent to which the social needs of communities are being served by the transport systems. Different communities have different needs, and community accessibility includes the “option value” of transport i.e. the value a community places on accessibility even though it does not express this through use. Community accessibility is reported under two categories. Local accessibility by walking and cycling and transport network coverage. Gaps in access to work, shops, health and other facilities are therefore identified. This complements the appraisal of consistency between transport and non transport policies which is reported under the integration criterion.
- Because accessibility describes transport from the viewpoint of users, members of the public often describe the changes they would like to achieve in terms of accessibility. Consistency of project proposals with these “stated accessibility” issues are covered in the implementability section of appraisal.

Accessibility appraisals are therefore inputs to the economy, social inclusion, integration and implementability parts of the STAG process. Since STAG was published, there has been no systematic review of the extent to which each of the different STAG criteria affect ultimate funding decisions. However a review in 2000 of the factors affecting the transport expenditure priorities of government, showed that it was factors such as accessibility and integration that had the greatest impacts on political priorities.

National guidance for Local and Regional Transport Strategies identify the need to undertake STAG appraisals of alternative policies and plans. There is therefore an explicit requirement for accessibility audits. However the level of detail in these accessibility audits has only been sufficient to allow detailed assessments of the above dimensions of accessibility in some areas and further work is needed to make these appraisals: easier, clearer and more consistent across the country.

6. Closing the Opportunity Gap

Since 2004 the Scottish Executive has developed and funded a major programme of activity to ensure that more people can play an active role in

society. Many targets have been set to “close the opportunity gap” based on action within the most deprived parts of the country. These target areas are identified for both urban and rural areas based on the Scottish Index of Multiple Deprivation (SIMD).

Transport is often omitted from action on regeneration, employability, health equity, and other social inclusion policies. The SIMD 2006 has therefore been revised to ensure that transport opportunities are more accurately represented in the delivery of this programme. SIMD contains 37 different indicators in seven domains which cover specific aspects of deprivation: income, employment, health, education, housing, crime and access to services. The transport networks are represented within the access to services domain using walk, drive and public transport travel times to selected services.

In the 2006 SIMD indicators, the selected services are: GP, Petrol Station, Post Office, shopping facilities, and schools. The travel times were calculated using very large databases to link:

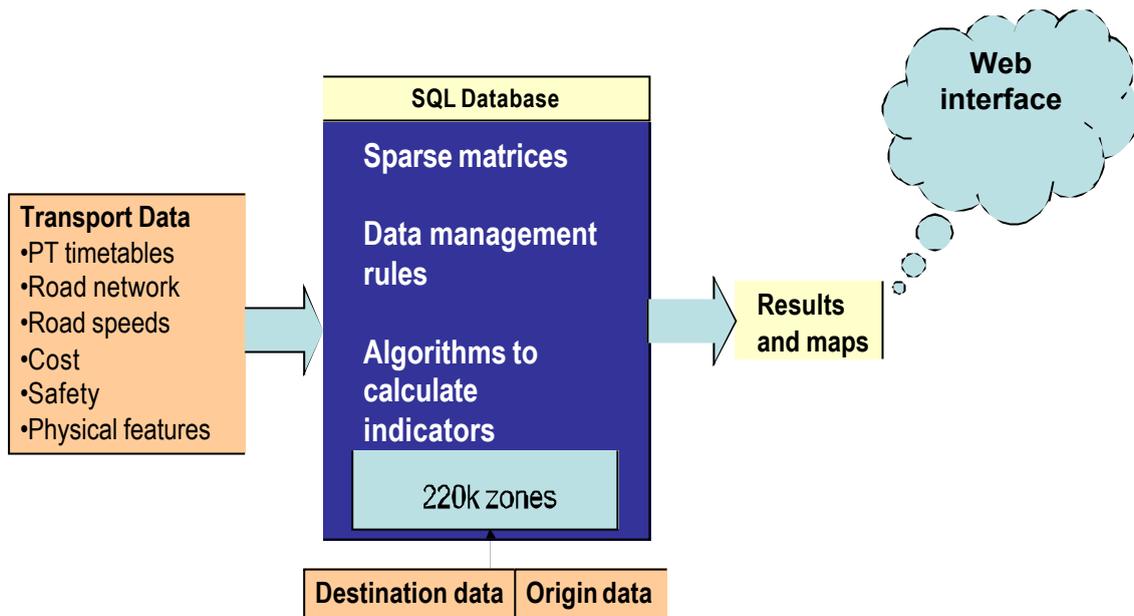
- Electronic road and footpath data from Ordnance Survey
- Electronic public transport timetables.
- Activity data sets with information on the location and type of GPs, post offices, shops, schools, etc.
- Residence databases with the characteristics of the population by age, income, employment, etc.

There are also test areas of the country where speed data has been used for each link on the road network to allow actual travel times by time of day to be represented. This is particularly important in congested areas. The national datasets on speeds on each road links are created by mining mobile phone, GPS and other available survey data.

Figure 3¹ shows the database and modeling structure for this work. A web interface is available allowing users across the country to interrogate the data. It is planned to develop this to allow more functionality for changing the location of services such as hospitals, amending transport networks and automating the production of certain indicators used regularly such as in the SIMD.

Figure 3 – The National Accessibility Model

¹ The national accessibility model consortium is managed by DHC and includes Dotted Eyes as database and quality assurance experts and Automatica as software developers. The model was developed in the Spring of 2006 and includes the whole of the Britain. Its development has been led by DfT and it has been used to support the work of many government departments including health, legal services commission, and Defra.



Through a combination of database queries and data compression technology it is possible to apply any spatial scale to the modeling, but 220,000 zones has provided an acceptable degree of accuracy for the national applications. Local models could easily be based on individual house address points.

The analysis is currently restricted to travel time and cost but with the growing availability of data on the built environment other lifestyle and consumer experiences it is planned to add: safety, security, information, environmental factors, reliability, and other physical barriers and features to the analysis. This will then cover more of the parameters that affect a user perception of accessibility. It is currently intended that an intensive work programme for the 2007 to 2011 period will progressively link transport accessibility aims with all other public policies to embed accessibility planning at national, regional and local planning levels.

The progress so far has already allowed many non transport agencies to make strategic policy decisions which result in far less travel and more inclusive approaches than would otherwise have taken place.

7. The Future

Accessibility planning is a fast developing field. The intention to deliver transport and other policies has often been frustrated by public concerns and policy conflicts. Some transport delivery is possible without accessibility planning, but the more complex and controversial aims that increasingly dominate delivery agendas require: understanding of the impacts on people, joint funding, partnership working, policy integration, evidence based delivery, and equitable approaches. Approaches which encompass these principles define accessibility planning.

The new approaches have not yet been embraced by all transport professionals, but experience shows how accessibility planning can improve transport delivery. Table 1 illustrates the range and scope of impacts.

Table 1 – Tackling Barriers to Transport Delivery through Accessibility Planning

Barrier	Accessibility planning impact	Examples
Conflict about whether car or other modes should have priority.	Identifies how people rather than modes are affected so that priority can be given to maximising accessibility for all (including the walk from the car park).	Pedestrian priority schemes in towns delivered as a result of the SPG17 accessibility planning requirements
Decisions in non transport sectors causing transport problems	Developing the partnerships that allow joint decision making.	Targeting of pharmacy start up grant scheme to improve local access. Location decisions for new hospitals.
Lack of priority for transport problem	Identification of non transport factors that require transport investment.	Funding for Alloa to Glasgow passenger rail service.
Lack of evidence	Facilitating availability of more transport planning data through partnership delivery	Ability to review all staff and customer travel movements for large trip generators e.g. Glasgow Fort.
Lack of money	Identification of non-transport resources able to fund transport delivery.	Regeneration partnerships improving town centres. Wheels to work schemes in various parts of Scotland.
Public perceptions of innovative transport approaches	A systematic approach to tackling information barriers and involving relevant stakeholders in decision making and delivery.	Community based delivery such as “safer routes to school”.

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