Accessibility planning

Introduction

Accessibility is defined as the ease with which people are able to reach key services and destinations. Access to these activities, including work, education, health care, shopping and recreation, is fundamental to personal, economic and community wellbeing.

The level of accessibility of any given service or destination can be influenced by a number of factors, including:

- its location in relation to that of those needing to reach it
- availability of transport alternatives
- physical accessibility of the destination and/or transport available
- travel time
- travel cost
- knowledge
- personal safety and security concerns.

Using evidence

Accessibility planning is a structured, evidence-based approach that identifies the access-related barriers to participation and solutions to these barriers. It uses empirical data, mapping and qualitative information to identify:

- the make-up of a community
- where people live in relation to key destinations
- what they need to access
- how they can access the destination or service.

Transport is one means of enabling access to activities and services. Improving access can be achieved by increasing and/or improving the transport options available, giving people more choice as to how they meet their transport needs.

Good accessibility is also a function of the spatial distribution of activities – their size, quality, character and ease of reach. Accessibility can be improved through assessment of the urban form to identify how to make better use of existing services and facilities and to inform future design and policy initiatives.
Objective

Assessing accessibility focuses attention on the level of service of the system as a whole, rather than on aspects of the transport system only. This allows for the evaluation of trade-offs between land use, transport and social needs.

It differs from traditional transport planning, which tends to focus on improvements to the transport system that facilitate mobility, without considering the access needs that drive travel behaviour. Accessibility planning assesses the characteristics of people and businesses, and their access needs, and identifies barriers to achieving these needs. Any solutions identified can be implemented in a way that also addresses wider policy objectives, such as improving road safety by reducing the need to travel.

Non-transport solutions

While improved access can be achieved through improved transport options, tools that reduce the need for personal travel may also have a role to play.

Advances in telecommunications facilitate solutions like teleworking, online shopping and distance learning and social networking sites like Skype, Twitter and Facebook all enable individuals to carry out transactions without leaving home. Mobile services such as dental clinics and libraries can also replace personal travel in rural areas and for those unable to travel long distances to reach them.
Benefits

Collaboration

As an integrated planning tool, accessibility planning has the potential to increase collaboration between the traditionally disparate disciplines of transport, land-use planning and social services. In this way, accessibility ceases to be perceived as solely a mobility or physical access issue, since non-transport perspectives and solutions are an integral part of the assessment process. It also permits the identification of the social impacts of changes to land-use and transport project or service changes.

Accessibility planning can reduce duplication of effort and cost by being integrated into existing local government planning cycles (ie Long Term Plans and Regional Land Transport Plans). Its outputs can inform the Regional Land Transport Plan prioritisation and funding process and help deliver community outcomes.

Modal choice

Accessibility planning identifies opportunities for service delivery and infrastructure efficiencies. Improved transport network efficiency will be a result of increased mode choice and better public transport.

The process also provides targeted improvements to roading networks, walking and cycling routes, public transport service and infrastructure, in conjunction with the needs of a community and businesses.

Accessibility planning also helps determine the economic viability of an infrastructure project by accurately mapping the potential number of transport users and the ease with which they can access a proposed facility (whether a transport network/service or a destination).

Social equity

Accessibility planning can deliver more equitable access by considering the needs of all groups in society, and not just those with cars. Improving accessibility for ‘at risk’ groups reduces their social exclusion and increases their life chances. Addressing access needs for specific groups of the population, eg disabled people, is likely to result in improved access for all segments of the community.

Cost savings

As accessibility planning uses socio-demographic and economic data to help identify access needs of different community groups, it can use trends in this data to inform long-term planning decisions. This helps future-proof key infrastructure.

Enabling all sectors of society to access key services also saves money in the long term by boosting access to employment, health services and education.
Strategic interventions for accessibility planning

Maps

Enhanced Geospatial Information Systems (GIS) maps are an essential tool for accessibility planning that capture the characteristics of origins and destinations, and the transport networks (all modes) linking them. The resulting maps combine socio-demographic information, the location of key destinations and the transport options available to access them.

These maps are used in conjunction with existing regional and local documents and knowledge to provide local and central government, transport planners, community groups, transport operators and service providers with clear evidence of barriers to access and possible solutions to address them.

Options for improving access

Options that deliver improved access will vary, depending on the specific needs of user groups identified. They can include:

- changing the location of key services to better serve the affected community
- providing mobile services that deliver goods and services to the community/people
- improving telecommunication networks, including providing ‘technology hubs’ (eg internet cafes) in isolated communities
- sharing resources, whether it be physical buildings, transport, technology or mobile services, eg technology hubs may be at a local school for student use during the day and community use at night
- providing demand-responsive and community transport
- changing existing public transport services to better suit demand
- reducing the cost of travel, particularly to the ‘transport disadvantaged’
- changing transport infrastructure to improve physical access and movement, eg low floor buses, segregated cycleways, footpath conditions to suit physical impairments
- improving urban design, eg crime prevention through environmental design, pedestrianisation/shared spaces in high pedestrian areas, cycle parks
- changing parking provision to match the mobility needs of different land uses to the different accessibility characteristics of the location
- providing information that takes into account all users’ needs, eg language barriers, visual and auditory impairment, lack of home phone or computer, poor or no reading ability
- changing regulations to enable decision making from an accessibility (rather than mobility) perspective
- changing funding arrangements to incorporate accessibility-related solutions and address the whole-of-government nature of solutions.
Strategic interventions for accessibility planning contd

**Non-transport solutions**

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**Where to apply**

Depending on the specific situation, measures can be applied when there is/are:

- a large proportion of ‘at risk’ individuals in the community (whether transport or socially disadvantaged)
- isolation caused by existing access barriers
- specific public policy objectives to be addressed, eg improving health or increasing employment
- a lack of transport alternatives (to the private vehicle)
- issues relating to the use of public transport
- traffic congestion
- a decision taken to invest in new infrastructure/services or to close an existing facility.
Case study – Gisborne Integrated Planning (GIP) pilot

The NZTA has partnered with Gisborne District Council (GDC) to trial the access planning process in Gisborne. Gisborne was selected as an ideal test site for a number of reasons:

- it has a relatively compact town centre, with a number of outlying townships, making it a good place to test access mapping in rural and urban areas
- GDC is a unitary authority which reduces the level of bureaucracy to be worked through
- GDC was interested in taking part in the pilot and gaining useful data about access issues in the district
- the process that NZTA developed to pilot the access planning framework in Gisborne has formed the basis for rolling out access in other parts of New Zealand.

Working with central government and local stakeholders, GDC and NZTA were able to identify some major access issues. GIS maps showing the socio-demographic characteristics of residents and their access to key destinations were an important aid to workshop discussions and provided a graphic illustration of groups and areas affected by access problems. The two issues which GDC selected for further investigation were:

- access to tertiary institutions
- access to medical care for East Coast residents.

The maps below show how difficult it is for some residents to reach doctors' surgeries.

Sickness & invalids benefits and doctors' locations
Case study – Gisborne Integrated Planning (GIP) pilot.

According to those working in the area, difficulty accessing medical treatment results in many East Coast residents entering the health system only once their condition has become extremely serious. This clearly reduces their chances of recovering fully and increases the cost for both the family and the health system.

Having identified priority access issues, GDC worked closely with stakeholders to find solutions. Partners included:

- the District Health Board
- Primary Healthcare Organisations
- Ministry of Education School Transport Services
- the Polytechnic and Wānanga
- Industry Training Organisations
- Police

Once again maps proved to be an invaluable source of information for GDC and a way of quickly assessing the impact of proposed solutions.

By May 2010, when the pilot ended, GDC had begun drafting an Accessibility Plan for the district, together with an action plan for achieving both its own objectives and the wider outcomes sought by regional and national partners.
Case study – ABC location parking policy – The Netherlands

The Netherlands uses a measure known as the ABC location policy to classify land in urban areas according to its accessibility, with the goal of optimising land use in relation to public transport supply and demand for car use. It aims to reduce avoidable car mobility and ensure access to economic activity centres is maintained. The policy, which came into force in 1989, has two key concepts:

- the proximity principle: the grouping of trip origins and destinations as close together as possible
- accessibility profiles: the locating of businesses (and urban developments) in the right places in terms of transport needs.

The policy is applied in cities of more than 100,000 inhabitants. These cities are encouraged to adopt a location plan that categorises land according to its transport accessibility. The Dutch government funds projects that contribute to the goals of the plan, particularly land-use intensification such as inner-city redevelopment.

Locations are graded according to their accessibility by public and private transport, which creates an ‘accessibility profile’, while businesses are graded according to their access needs and modal shift potential, creating a ‘mobility profile’. The ABC policy aims to match accessibility profiles to mobility profiles, ie it seeks to locate each business at a location with an accessibility profile that matches its mobility characteristics.

The location accessibility profiles are graded A, B or C:

- ‘A’ locations are highly accessible by public transport, and tend to be located at major public transport nodes, such as central stations in large urban areas.
- ‘B’ locations are reasonably accessible by both public transport and car, and are typically located on both public transport and road corridors.
- ‘C’ locations have poor public transport accessibility, but tend to be located on main roads so are easily accessible by car.

The business mobility profiles are assigned to classes of business and relate to:

- site work intensity (the number of workers by surface unit)
- the mobility of employees (dependence on the car for business activities)
- visitors’ intensity (the number of visitors by surface unit)
- dependence on the transport of freight.
Case study – Accessibility Plan for Rural Torridge, Devon, England

Rural Torridge was chosen as the first local priority action area for accessibility planning in the Devon Local Transport Plan. This rural area was chosen as the pilot because it has a well-established local strategic partnership, is a 'targeted community' and was shown to have significant transport accessibility problems.

Accessibility partners used mapping and local evidence to highlight key access problems for residents of Rural Torridge and then examined potential short- and long-term actions to resolve the identified issues. Partners represented health care providers, employment agencies, county and district councils, community transport associations, emergency services and religious groups. The following table provides an example of the issues and solutions identified.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
<th>Potential partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to employment</td>
<td>• Car Sharing</td>
<td>• Employers</td>
</tr>
<tr>
<td></td>
<td>• Workplace Travel Plans</td>
<td>• Businesses</td>
</tr>
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<td></td>
<td>• Wheels to Work</td>
<td>• Devon County Council</td>
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<td></td>
<td>• Travel Discounts</td>
<td>• JobCentre Plus</td>
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<td></td>
<td>• Better coordination of timing of services</td>
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<td>Access to food shopping by</td>
<td>• Internet shopping – provide volunteer assistance</td>
<td>• Neighbourhood</td>
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<td>older people</td>
<td>• Planning process – easily accessible developments</td>
<td>Wardens Scheme</td>
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<td></td>
<td>• Shop mobility</td>
<td>• Supermarkets</td>
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<td></td>
<td>• Demand-responsive, individualised transport (eg Ring &amp; Ride)</td>
<td>• Volunteering bureau</td>
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<td></td>
<td></td>
<td>• Devon County Council</td>
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<td></td>
<td></td>
<td>• Police</td>
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</tbody>
</table>
Complementary measures

<table>
<thead>
<tr>
<th>Public transport</th>
<th>Public transport in general improves accessibility. Specific areas of access need can be improved through additional or more frequent services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use planning</td>
<td>Appropriate land use planning will assist with accessibility.</td>
</tr>
<tr>
<td>High-quality urban design</td>
<td>The design and function of the urban environment can provide tactile, audible and visual direction and well as quality pedestrian and cycle access.</td>
</tr>
</tbody>
</table>

What other polices this may address

<table>
<thead>
<tr>
<th>Improved public health</th>
<th>As access to health services, recreation opportunities, employment and education increases. Public health levels will improve.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social equity</td>
<td>Access planning provides social equity by enabling all members of a community to fully participate in that community.</td>
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<tr>
<td>Access to employment</td>
<td>Unemployment due to being unable to attend interviews and travel to employment reduces when access is improved. Accessibility planning reduces unemployment and under employment.</td>
</tr>
</tbody>
</table>
Further information

Abley, S. and Halden D. (2013), NZTA research report 512: *The New Zealand accessibility analysis methodology*


Devon County Council. *Detailed Chapter on Devon’s Accessibility Strategy.*
