TRANSPORT AND THE URBAN COMMUNITY

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The challenge to provide the accessibility which is a city's lifeblood, without destroying its fabric in the process.

In the 1991 census Kapiti and Blenheim ranked 18th and 19th in size of New Zealand urban areas. Both are pleasant communities on State Highway 1, 60 kilometres from Wellington as the crow flies. The only real difference is the presence of Cook Strait, a barrier between Blenheim and its larger neighbour.

That difference has led to profound contrasts in character. Blenheim has developed as an isolated community, with a self-sufficient economy and features of a typical provincial town. Kapiti on the other hand is very much a metropolitan satellite, strongly interdependent with Wellington for jobs, shopping and services.

If a Cook Strait bridge were built giving Blenheim access to a population base 20 times its size, opportunities for jobs, commerce and social contact would expand accordingly, radically changing patterns of activity. Self-sufficiency would be gone forever, but so also would the constraints imposed by isolation and limited opportunity.

One of the more obvious effects would be a big increase in traffic, from fewer than 1000 vehicles per day now carried across Cook Strait, to something approaching the 20,000 or more using the road between Wellington and Kapiti. The extra traffic would be generated as new opportunities were taken up, a direct result of Blenheim becoming part of the larger city.

People live in large cities rather than isolated communities to have access to facilities and to each other. A city's success as an integrated community depends on providing this accessibility. Transportation is an essential part of this process.

While development may be hampered by inadequate transport, it can also be disrupted by a system which is too generous. If transport were infinitely cheap and easy, there would be no incentive for self-sufficiency or independence. There would be a strong tendency for activities to centralise. Overseas there are many instances where a country is dominated by a single huge city.

At regional level too, it is desirable to impose some limits to mobility if a strong sub-regional structure is to develop. North Shore in Auckland, or the Hutt Valley in Wellington, would have little incentive for independent facilities if there were no congestion on routes to the principal centre.

Whether a city suffers from congestion and restricted access, or from too much mobility, economic, social and environmental consequences are profound. Achieving the right balance between access and impact, between efficiency and self-sufficiency, is no easy matter.

ZONES OF INTERACTION

Unravelling interconnected issues relating to urban access, transport and opportunity requires an understanding of market dynamics. The term "market" applies not only to commercial transactions but also to cultural and social activity. The success of that interaction depends on the ability of markets to match demand with supply, to satisfy the needs of participants.

Markets generate a need for transport directly related to size and complexity. For cities the most important "zones of interaction" are: the employment market; retailing; industry and commerce; cultural and social interaction.

These markets are overlaid on each other, to make up the functioning urban organism.

Figure 1 shows a situation where improved transport has allowed four isolated communities to combine into a single market.

Direct effects are: the number of interactions (trips) is unchanged (x 1). The average trip length doubles (x 2). The number of opportunities available to any individual quadruples (x 4).

If at the same time, land use intensity doubles, the number of trips doubles (x 2). Average trip length is unchanged (x 2), and the number of opportunities increases by a factor of 8 (x 8).

An important opportunity associated with higher densities is improved viability of public transport, and the chance to make trips by walking or cycling. Despite high levels of car ownership, 40% – 50% of the population have restricted mobility because of youth, old age, disability, or lack of cars during the working day. If these people are mobilised with public transport and self-propelled modes, the market expands to double the number of people able to participate. The overall increase in potential opportunities is then a factor of 16.

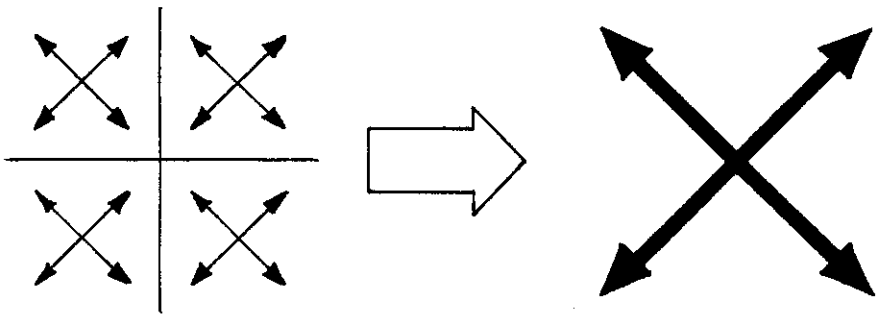
Direct effects are not the whole story. If more opportunities are available, markets rationalise and become more efficient. Facilities can be centralised; activities more specialised; industries redistributed. In general large markets work better than small ones, if only because of the greater number of opportunities to match buyers with sellers.

Rationalisation has a clear potential to improve the quality of life and reduce environmental impact. However, in each case the processes of centralisation, specialisation and redistribution cause an increased demand for transport.

URBAN DEVELOPMENT TRENDS

During the 1950s and 1960s, most urban

Figure 1. Effect of merging four isolated communities into a single market.



At least 20,000 vehicles use the road between Wellington and Kapiti each day.

residential growth occurred in new subdivisions on city edges, primarily with single-unit dwellings. Spacious modern housing was built in attractive environments for a youthful, expanding population. Coupled with rising car ownership, this led to rapid traffic growth on arteries leading to the city centre. Additional traffic in inner suburbs accelerated the decline of inner city housing.

More recently, the pattern has reversed. An ageing population and changing lifestyles has led to a demand for inner-city living again, with a strong trend toward infill and multiple-unit housing. In Lower Hutt more than half of new dwellings are now being located in established suburbs rather than low-density subdivisions on the city outskirts. The pattern is repeated in many other centres.

Travel demand is also changing. With job growth static or in decline, commuter trips are less of an issue but are compensated for by increases in shopping, recreation and commercial travel. Lower Hutt now experiences traffic growth of only 1% per annum in peak periods, but over 3% during the rest of the day. In the foreseeable future continuation of this trend will lead to interpeak flows exceeding those of commuter peaks in many inner-city locations.

The new trends have important planning advantages, enabling better accessibility, reduced transport demand, better public transport and more use of walking and cycling. More interactions are possible for less resource use.

They also heighten problems for transport planning. Although the total amount of travel is reduced, it is concentrated in a smaller area, with with higher traffic flows. Many of the trips are short, likely to start or finish in the locality – this means a high proportion of turning movements and other manoeuvres. On top of this will be much more pedestrian and cycle activity than in peripheral suburbs.

Road safety is another major issue. High traffic flows involving more turning manoeuvres, more pedestrians and cyclists, and increased frontage activity mean that without determined action the accident potential is greatly increased.

Inner suburbs are usually the oldest parts of a city, laid out before the invention of the motor car. When improvements are needed, old layouts and diverse land use make change difficult.

RESPONSES

Firm traffic management is essential if the city is to function without the inner city environment becoming intolerable. A cornerstone in efforts to reduce conflict is a strong roading hierarchy, with some streets to have an access function, and others giving priority to moving traffic. The hierarchy needs to be reinforced by land use regulation and effective parking control, with road construction in some places and traffic calming in others.

Peak hour capacity is no longer the issue it was when arterial flows were doubling every 10-15 years. The moderate growth now being experienced can more easily be accommodated through traffic management and public transport measures. Mid-day capacity is another matter, likely to become a critical consideration. Lower Hutt surveys indicate a high proportion of interpeak vehicles is on commercial business, up to 50% on many routes. This traffic is essential for the city's economic health. Unlike commuter trips, public transport is not an option for commercial travel.

It will not be possible to build roads fast enough to prevent congestion. Civil engineering solutions alone will not be enough, so traffic management will be more important than in the past. If roads are to remain safe with a minimum of disruption, the roading hierarchy will need to be enforced with firm or even draconian measures.

CONCLUSION

Mobility and access issues are central to successful urban planning, and transport processes must be clearly understood if social and economic markets are to function within acceptable limits of cost and environmental impact.

Patterns of travel are changing. The emphasis needs to shift from questions of peak-hour capacity, to conditions at other times.

The consolidation of established suburbs presents a major challenge, higher traffic flows and heightened conflict in inner city locations. Active traffic management using policy and project measures to enforce a strong roading hierarchy is an essential strategy if these areas are to remain attractive places to live and work.

The big challenge is to provide the accessibility which is a city's lifeblood, without at the same time destroying its fabric.

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