

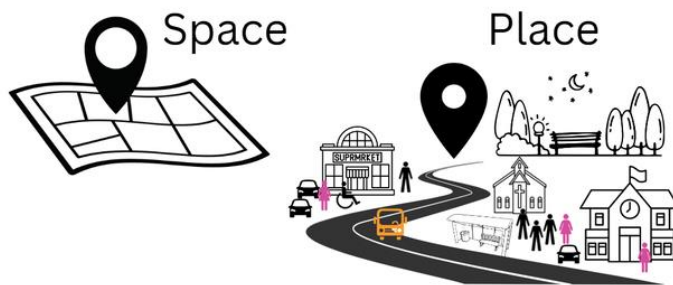
Place Matters: The importance of geographic assessment of areas of influence in understanding the social effects of large-scale transport investment in Wellington

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The concepts of space and place are fundamental to analysis of the social impacts of infrastructure. These concepts are widely debated, with different meanings and perspectives depending on disciplinary, political and cultural viewpoints. This article considers the importance of understanding and defining the areas of social influence for large-scale transport infrastructure investment, using [Let's Get Wellington Moving](#) (LGWM) as an example. A social impact assessment, undertaken for Waka Kotahi New Zealand Transport Agency, Let's Get Wellington Moving and the associated Wellington Region Councils, is used to show what needs to be considered when assessing the likely social impacts.

Why does place matter?

Agnew (2011) argues that both space and place describe the “where” of things and it is best to consider them together. Sack (1993) supports this assertion when stating “everyone assumes that being in one place rather than another makes a difference, as does being near rather than far. This means that geographic place and space affect everyone”. These geographers tend to view spaces as reflecting the physical, social, or economic processes of human activity, generally defined in spatial metrics such as latitude and longitude, elevation, and topography, as well as in terms of political economy, with concepts such as core-periphery, or as administrative regions, for example. In addition, there are those who view geographic locations as places where agency and social practices, connectivity, mobility, and social risks shape and transform the landscape. Agnew suggests that the definition of spaces usually constitutes “*a location on a surface where things just happen*”. In contrast, places are viewed as the spatial context for the facilitation of physical, social, and economic processes.



In the first sense, space refers to a location in a particular place as might be indicated by a physical address, site, or catchment, where daily activities occur. Whereas the second concept relates to the experience of living at an address or going about daily activities in the surrounding communities. The

second perspective relates location to place through social experiences as agents and the social construction of places through social practices such as activities in a street, churches, schools, shopping centres, parks and workplaces. The experience of place can be very different for different societal groups, such as women, children, disabled, socially deprived and vulnerable populations, as places can both constrain and enable specific activities.

Places are situated and shaped within a subset of economic, political, and cultural networks at different geographic scales. The dynamic character of places, and fluidity of patterns due to interconnections with other places means that the geographic scope of specific transport investment options will exert influences over wider areas than simply where the roads, public transport and active mode routes are provided. This understanding has obvious implications for the definition of a study area for social impact assessments (SIAs) as found with LGWM.

Considerations for geographically defining areas of social influence

Mobility, a lack of mobility, and obstacles to mobility all help to facilitate or deter movement between places. Cresswell (2004) emphasises, for example, that commuting paths are part of the experience of place and allow people to maintain social connection with other places, compared with those who are unable to move far and who are more 'spatially rooted' to their neighbourhoods. Typically, the areas that are likely to be affected by major transport investment projects are much larger than linear corridors where roads, cycleways, footpaths, and bus routes will be located. This is acknowledged by Motkee (2022) who considers that a whole-of-city scale geographic area can be important for transport planning. Veeneman and Mulley (2018) highlight that business cases for infrastructure projects in the Netherlands, Australia and South Africa are often financed by federal or state levels of governments, but the social impacts are experienced at smaller scales, such as cities and neighbourhoods, which are managed by local governments.

In the LGWM case, funding for the transport investment package was provided by multiple agencies including central government, Wellington Regional Council, and local councils within the region, especially Wellington City. The financial impacts therefore fall on ratepayers and taxpayers over a large geographic area. This is to be expected because many of those living in Wellington Region either work in the Wellington CBD or other business areas within Wellington City and also use key facilities such as the international airport, hospital, and other recreation spaces such as Te Papa, the Kaiwharawhara ferry terminal, the Basin Reserve, and Sky Stadium. For these reasons they are also likely to benefit from improvements within the roading network in terms of improved accessibility to destinations (i.e. travel time savings).

Some of the improvements and disruptions to daily life will involve specific geographic locations. For example, people living in suburbs along cycleways or improved walkways will directly benefit if they choose to use active modes to travel to work or for daily activities, as will those living along proposed routes and nodes for mass rapid transit. Businesses located along roads and routes that are likely to have more consumers directed to them, or have their access disrupted during construction, will also experience social impacts through increased or reduced activity and profits. Those people travelling across town for work, shopping, school sports, etc., will have their travel patterns improved if using public transport, or perhaps delayed if travelling by car due to new points of congestion being created by additional traffic signals or prioritisation of public transport modes.

As part of the way people move through spaces, and are likely to be aided or hindered in doing so by proposed transport infrastructure, it is important to understand who those people are, and where they live and work. There are many social questions to be investigated. For example, will proposed transport routes help people who cannot afford to own a car to move around the city better, or are the

routes not designed to be accessed by those people? How will this impact on people's ability to access education and work opportunities that could help them to improve their material wellbeing?

Will the proposed transport changes make it easier for less able people (including those who are vision impaired, hearing impaired or physically challenged) to move around the city, particularly as these communities tend to live in particular places that have good access to social support or medical services? Ease of movement is also applicable for businesses and community organisations who rely on good accessibility and connectivity to markets and members. How will the urban form of the city change and will this reduce environmental impacts such as carbon emissions through the design of more compact cities?

How data sources shape spatial analysis of communities

For many urban transformation projects, including large scale transport infrastructure investment, secondary analysis is constrained by available datasets and their spatial definitions. In New Zealand, data published by Statistics New Zealand are available for statistical areas at different geographic scales. For example, some data are published at the regional level, while other data are published for territorial authorities, or for smaller areas such as statistical area 2 or 1 level (in effect, suburbs and blocks).

The types of data that are collected and published for the smaller geographic areas can include socio-demographic information from the Population of Census and Dwellings, and business location and size data from the Business Directory. These are useful datasets to show where there are concentrations of people living and working, and Statistics New Zealand Commuterview data helps to show traffic flows within the city and region for work, education, and other purposes.

Another spatial dataset used to understand the implications of infrastructure projects is the transport zones used by transport modellers; in the Wellington case, these are called Wellington Transport Strategic Model (WTSM) zones. Those zones are broadly aligned with statistical areas, although often not identical. However, for analysis purposes it is important to use information being generated by the modelling as the outputs show volumes of flows, transport time savings and costs, and distances travelled. Aligning statistical and modelling datasets in a GIS platform is important and aids the definition of communities of interest. The alignment of population characteristics, geographic features (such as harbours, rivers, and roads), engineering options, model zones and spatial definitions of communities in order to describe the likely social impacts requires coding smaller areas into larger areas, creating the ability to summarise key variables and possibly pro-rating of data to some areas to facilitate a strategic analysis of impacts.

LGWM as an example of theory and practice

For the LGWM project spatial definition was undertaken prior to the transport interventions being finalised, to define communities in a way that would be of assistance to assessing the social impacts of the potential interventions. Community definition was undertaken in GIS, by categorising the statistical areas into broad communities, taking into account the data outputs that were anticipated to be provided from the WTSM. Natural and human geographic features were used to define communities. The assessment also considered the Index of Multiple Deprivation (IMD) to group areas of comparable social status. The IMD combines variables such as employment, income, crime, housing, health, education and access to services, comparing each area's score with the national distribution.

The spatial definition (Figure 1) resulted in 18 distinct communities in Wellington City and a further 21 communities in the greater Wellington Region. The majority of the social impact assessment narrative

focussed on the Wellington City communities, though consideration was given to how commuting patterns would help improve access to jobs and services for residents in the wider Wellington region, as well as the effects on urban development.



Figure 1: LGWM Wellington communities spatial definitions

Once the communities were defined we compared each community with the city and regional average to describe how the communities varied (see Figure 2 as an example). We also looked at where urban growth was forecast to occur in spatial terms throughout the city under status quo scenarios, to compare them with likely urban form outcomes of new transport infrastructure, which is well recognised as influencing the shape, distribution and function of urban areas. These two steps

provided us with information about how the city and region would be likely to look in the future without the preferred package of transport investment.

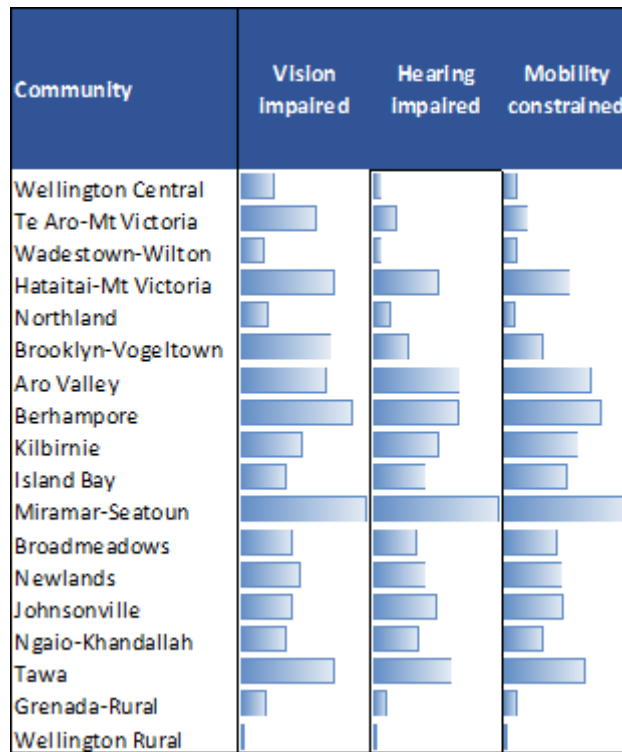


Figure 2: Wellington City populations by disability (Census 2018)

We incorporated modelling output from the WTSM to show the likely effects on travel time and vehicle kilometres travelled for different transport mode users and related those back to the social communities, to allow assessment of which communities would benefit the most from the proposed packages. For some social wellbeing elements, a visual demonstration of where communities were likely to gain better access, no change, or worse access was provided by mapping the options and possible routes of MRT options. Mapping included variables such as the number of workers living close to each route and the number of workers employed along each route.

Learnings for future SIAs

Motkee (2022) emphasises that often the impediments to undertaking meaningful social impact assessments come down to time- and cost-focussed project management approaches, heavy reliance on technical engineering and often economic business case assessments (including cost benefit assessments). In her study, Australian practitioners noted that timeframes were often compressed due to social impact assessments being commissioned well after other forms of assessment.

In the case of LGWM, the need for a social impact assessment was identified fairly late in the planning work and option selection, but still within timeframes sufficient to provide advice and guidance prior to community engagement beginning on the preferred scenario. Fortunately, the key LGWM project managers had a broad focus and were concerned about how the transport infrastructure would shape the future urban form of Wellington City. They understood the value to the project of achieving good social outcomes, as well as other objectives such as reducing carbon emissions, providing a resilient network in an earthquake prone location, and the core engineering matters. That willingness to embrace a broad perspective of the social effects of the project meant

that the insights provided in the social impact assessment were incorporated into the selection of a preferred package of investment despite the time constraints.

Spatial analysis is time consuming but integral to understanding the baseline situation and future outcomes without proposed changes to infrastructure provision, urban transformation, or district plan policies. The process is relatively simple for those with a geographic background and is shaped by the available data sources and their geographies. It does, however, require sufficient time to assemble the datasets, understand all the relationships, and interpret the implications of transport infrastructure changes.

In summary, this case showed, consistent with Motkee (2022), that place and space are integral to social relations, and the nature and the meanings we derive from social activity, so incorporating the spatial distribution of activity that occurs in places is a fundamental building block of place-specific social impact assessments. We must remember that places are shaped by the people who live and interact in them, and that the types of people and human facilities that make up places create unique and interesting places. New transport infrastructure provides opportunities to change the flows of people into, around, and through communities, and can create a wide range of positive and negative impacts that need to be understood based on the specific place in which they occur.

References

- Agnew, J (2011). *Chapter 23: Space and Place* in J. Agnew and D. Livingstone (eds.) *Handbook of Geographical Knowledge*: Sage, 2011.
- Sack, R.D. (1993). *The power of place and space* in *The Geographical Review* (Vol. 83, Issue 3): July 1993.
- Cresswell, T. (2004) *Place: A Short Introduction*. Oxford: Blackwell.
- Lara K. Mottee (2022). *Advancing beyond project-scale Social Impact Assessment of transport infrastructure: insights into contextual constraints on practice*, *Impact Assessment and Project Appraisal*, 40:1, 60-74.
- Veeneman W, Mulley C. 2018. *Multi-level governance in public transport: governmental layering and its influence on public transport service solutions*. *Research in Transportation Economics*. 69:430–437.
- The University of Auckland Medical and Health Sciences (2018). *Deprivation and Health Geography within NZ 2018 New Zealand Index of Multiple Deprivation*.