TRANSPORT LAND USE AND DEMAND IMPACTS

Key lessons learnt	Land use scenario testing are a necessity, for a certain class of city shaping infrastructure which has the power to change how people and businesses live and operate within the city context.
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Introduction

Projections of land use (e.g. employment, population, educational enrolments) are a key driver of future demand for infrastructure and service provision. In NSW, Transport for NSW produces small area projections for population (including demographic breakdowns) and employment (including industry breakdowns) for travel zones for the next 30-40 years. For most infrastructure and service provision business cases, these projections are fit for purpose.

However, land use scenarios will assist in understanding uncertainty and help test the sensitivity of infrastructure and service provision decisions to differing population assumptions (growth rates and distributions). Land use scenarios are a necessity, for a certain class of city shaping infrastructure, which have the power to change land use patterns.

Key considerations

Land use projections are an indication of the possible future level and distribution of activity if current trends (demographic, economic, infrastructure provision) continue. They are not predictions of the future, nor are they future targets.

In the long term, land use projections are not achievable without additional infrastructure (in particular transport infrastructure). This creates a challenge when assessing some transport projects. The nature of the projections mean there is a lack of transparency regarding assumptions and which major land use and transport projects are included/excluded from projections.

Differentiating transport initiatives according to their impacts on land use patterns is an important consideration for business case development. The following typology of infrastructure initiatives can be used:

Strategic (or city shaping) infrastructure

▶ almost exclusively in the transport domain and have the power to alter relative accessibility across a city (for example, the Sydney Harbour Bridge or the Sydney M7 Motorway). These investments drive where people live and where businesses locate. They create new agglomeration economies, boosting productivity and taxation revenues. Only a small number of initiatives could be classed as strategic infrastructure as few have the capacity to significantly shift transport movements across a city.

Structural (or district) infrastructure

▶ represents higher-order or trunk facilities and networks and nodes that form a region's urban framework. It includes arterial roads and district public transport connections. These items are distinguished by their district level service catchments.

Local (or follower) infrastructure

▶ includes services and facilities with localised service catchments. While vital to community wellbeing, business efficiency and place making, local infrastructure neither shapes development patterns nor provide an overarching structure for settlement and industry development. It provides services into a suburb or neighbourhood once the area has been enabled by investment in higher order infrastructure initiatives.

Neither structural nor local infrastructure have a significant impact on relative accessibility to influence the shape of a city. It is only the strategic infrastructure which has this power.

Effective Job Density (EJD), or the number of jobs located in a specific area, can be used to test if a transport project has the potential to be a city shaping project/initiative. If the project/initiative increases EJD by 5 per cent or more across a large part of the city, then it is likely to have city shaping power.

If the project appears to be city shaping, then a land use scenario(s) should be developed to better inform the demand presented in the business case.

As a first step, Transport for NSW should be consulted to understand if the impact of the project is already contained within the base case projections.

For a city shaping project, there is likely to be more people and jobs attracted to the transport corridor. These can be reallocated using a Land Use/Transport Interaction style model. Using a more simplistic approach, assumptions can be used to estimate the uplift to land use within the corridor and identify where this growth has been drawn from.

This method would produce a base case and project case land use scenario which can then be used to assess the demand for the immediate project.

Source material

Transport for NSW Land Use Projections

Australian Transport Assessment and Planning Guidelines – Australian Transport Assessment and Planning Guidelines

Long run economic and land use impacts of major infrastructure projects

Unlocking 'city shaping' potential through integrated transport and land use planning

▶ **About the authors:**

SGS Economics and Planning (SGS) is a leading planning and economics firm whose purpose is to shape policy and investment decisions to achieve sustainable places, communities and economies.

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