

# Estimating placemaking benefits of transport projects in business cases

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## Abstract

The NSW *Future Transport 2056* requires balancing movement and place in transport project planning, development and design. Essentially, road and mass transport networks not only support the movement of people, goods and services, but also have various place functions that support a range of socioeconomic activities. A desired outcome for the future of city living, urban street design and transport is the creation of ‘successful places’ through integrated land-use transport planning. While there are plenty of discussions of placemaking evaluations, there has been a lack of practical methodology of estimating the placemaking benefit in the project business case to support investment justifications. To close the gap, Transport for NSW’s economic team has developed a *Movement and Place Evaluation Guide* for a 12-month testing use in some place-focused projects. This paper outlines the Guide to draw feedback from transport planners, urban designers, economists and business case developers.

## 1. Introduction

With an increasing focus on place-based planning, the value of placemaking elements is an important issue for consideration in planning for the future. Investing in public spaces and infrastructure becomes critical by creating streets that are greener, more walkable and climate resilient, and making cities more livable, productive, inclusive and sustainable.

The collaborative process of creating ‘successful places’ and emphasis on capturing the complementary relationship between transport infrastructure and places is the underlying principle of taking a Movement and Place approach required by Future Transport 2056 – the master plan of future transport in NSW<sup>1</sup>.

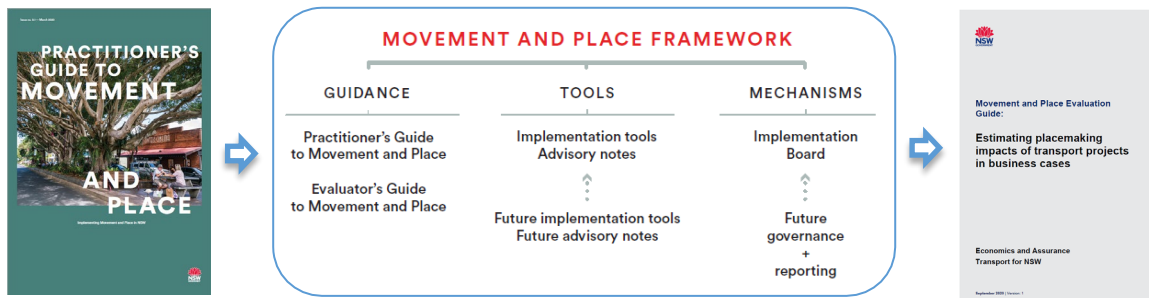
In March 2020, NSW Government released the *Practitioner’s Guide to Movement and Place*. The Guide was developed with the NSW Government Architect (GANSW) as the place experts and Transport for NSW (TfNSW) as the movement experts in a collaborative working arrangement. Supporting the development of the Guide was a three-tiered cross-agency governance arrangement from the Movement and Place Executive Steering Committee to the Movement and Place Implementation Board and the Movement and Place Technical Working Group. The Guide has been released to State Government agencies for testing for 12 months.

The *Movement and Place Evaluation Guide* fits into NSW Government’s Practitioner’s Guide to facilitate Movement and Place Evaluations (see Figure 1). It aims to provide methodologies for quantifying placemaking benefits and identifying other qualitative impacts.

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<sup>1</sup> See [www.future.transport.nsw.gov.au](http://www.future.transport.nsw.gov.au)

**Figure 1 Movement and Place Evaluation Framework**



Traditionally, a place is a commonly identifiable geographic area or location. This includes both the use of space and the features within the space. The *Practitioner's Guide to Movement and Place* considers place qualities through three lenses:

- Physical form
- Activities that happen within them
- Shared meaning to people.

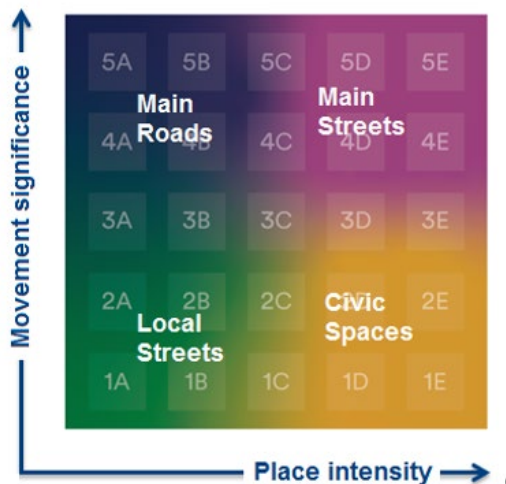
Austrroads (2020) have adopted a narrower definition of a place - 'street as a destination in its own right'. The place is where activities occur on or adjacent to the street and where the buildings and spaces may have a social or cultural significance in their own right (Jones and Reynolds 2012). This is very much a road-oriented interpretation of placemaking. To broaden the scope beyond the street, placemaking projects require considering a wide range of aspects such as quality of a place, aesthetics, physical urban design, how the place is used, and the extent to which a place supports quality of life, health and the general well-being of residents. Jones (2009) recognised broad functions of "link" and "place" of urban streets.

Traditionally transport planning aligns movement functions of roads and streets with well-established and easily assessable measures such as travel time savings, travel time reliability improvement and vehicle operating cost savings. This has at its core an understanding of roads as corridors for movement from one place to another. The place function thereby emerges as competing function in that better placemaking may slow down vehicle traffic which is likely to be evaluated as travel time dis-benefit.

In contrast, the balanced Movement and Place approach recognises that transport links and all their road users are an essential adjunct to creating successful places. The Movement and Place functions may also compete with the limited space in transport corridors, thus provision of walkable, cyclable and amenable places should be balanced with the need for moving people and goods.

Distinctiveness of movement significance and place intensity hereby helps give movement and place benefit evaluators some clarity at strategic and local level. A 5X5 matrix model is used to classify the movement and place functions as shown in Figure 2. The movement significance is assessed using the 1 to 5 scale where 1 denotes low movement significance and 5 denotes high significance. The movement significance needs to be assessed for each transport mode (walking, cycling, public transport, freight and private vehicle) for 'Through', 'To / From' and 'Within' trips.

Figure 2 Classification of a transport corridor or a place by its movement significance and place intensity



Source: NSW Government (2020). Left: 5 X 5 matrix of movement significance and place intensity. Right: Street and transport environments in NSW movement and place framework

The place intensity is assessed using the A to E scale where A indicates low intensity and E indicates high intensity. The place intensity is defined by activity, physical form and meaning of a place with measurement factors of population, employment density, visitation, public transport provision, building volume (footprint), urban density (floor space ratio) and heritage places.

## 2. Placemaking benefit evaluation

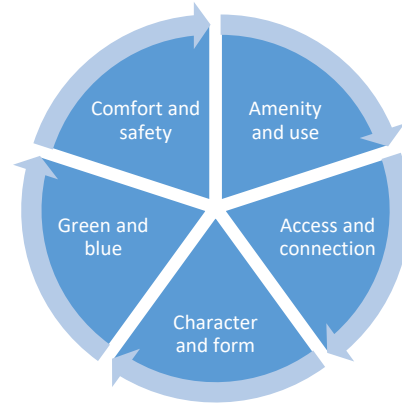
Traditional economic evaluation models and cost-benefit analysis tools have worked well to evaluate ‘movement’ benefits including travel time savings, travel time reliability benefits and vehicle operating cost savings. However, they tend to omit values and benefits of public realm improvements.

There is presently no guidance on how place benefits should be captured in business cases and Cost Benefit Analysis (CBA). For example, the additional benefits of investing in or improving the public realm for pedestrian users are not always adequately captured or considered and, hence, are largely omitted in favor of more established and easily assessable measures aligned with movement.

The emerging emphasis on integrated transport and land-use planning seeks to overcome previous assumptions that movement and place functions are two competing priorities. That is, placemaking has occasionally been regarded to slow down traffic and been evaluated as travel time dis-benefit in conventional CBA. Consequently, important aesthetic, social, cultural, environmental and heritage impacts are not appropriately valued in the project economic analysis.

Placemaking evaluation framework proposes five “built environment themes” for evaluating performance outcomes of movement and place as shown in Figure 3. The approach has aligned to the Practitioner’s Guide to Movement and Place (NSW Government 2020, p.60).

**Figures 3 Proposed evaluation framework of placemaking projects**



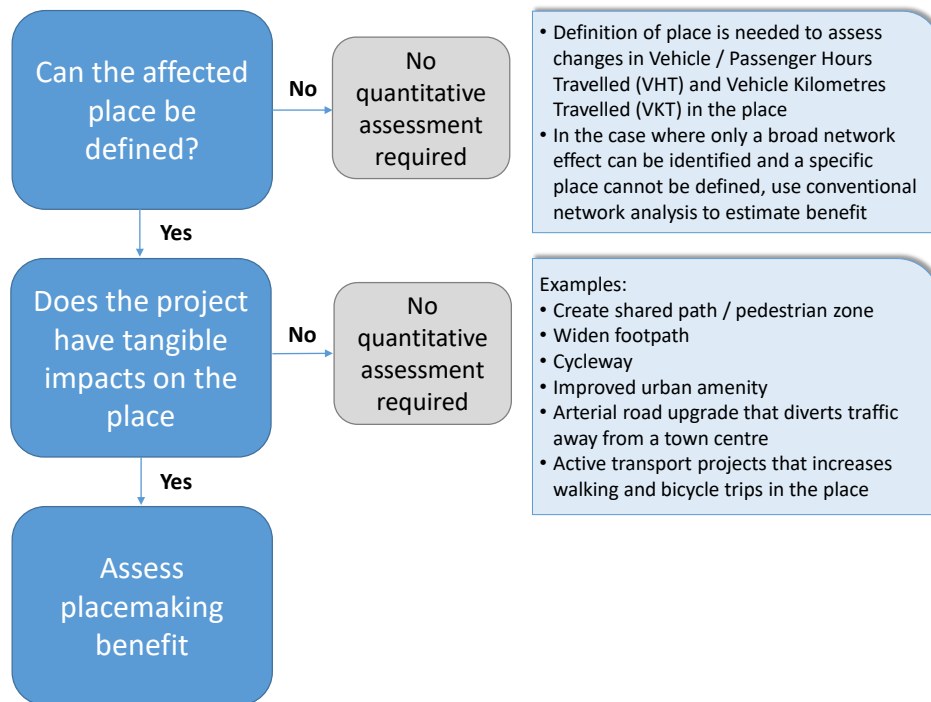
In the project evaluation, it is practical to value a place by its attributes and themes, summing up benefits of those themes to estimate a total value of the place.

### **3. What types of transport projects should assess placemaking benefits?**

Movement and place functions complement each other, thus placemaking impacts occur in most transport projects in one way or another. However, some projects provide more movement capacity where the traditional evaluation approaches might be appropriate. Other projects contain significant placemaking elements where the placemaking benefits should be appropriately assessed. A transport project should assess placemaking benefits if it satisfies one of the following two conditions:

- The affected place can be clearly defined, for example, by drawing a cordon area to estimate traffic and amenity impacts. As estimating the placemaking benefits is not straight forward in many cases, unless such a specific place or a group of places can be defined, placemaking benefit should not be assessed.
- The transport project has tangible impacts on the place:
  - It makes physical changes to a place such as widened footpath, improved streetscape and shared street creation or contributes to increased public transport usage at the expense of private vehicle travel.
  - It significantly diverts through traffic away from the place to make it more liveable and safer.
  - It significantly increases cyclist volumes and pedestrian footfalls in the place.

**Figure 4 Does the project require a placemaking benefit assessment?**



The placemaking benefits is significant for the following six project types.

- Street as a destination – A section of urban street, road or thoroughfare where people dwell and spend time whether dining, shopping, sitting or partaking in associated activities like loading, parking or alighting a bus. Generally it is associated with a high volume of pedestrians and foot prints.
- A transport project that diverts traffic from the place
- Station precinct projects
- Area / precinct land use and transport planning
- Public realm and public space improvements
- A transport project that provide access and connectivity to major terminals and iconic places

#### **4. Benefit estimation**

Table 1 presents the top-nine benefits that should be assessed in placemaking projects.

- Benefits 1-6 should be assessed for all projects where appropriate
- Benefits 7-9 should be assessed for Tier 1 projects only.

**Table 1 Benefit categories of placemaking projects**

<b>Benefit type</b>	<b>Description of benefit</b>	<b>Used for core BCR estimate?</b>
<b>1. Amenity benefits</b>	Visual amenity, noise reduction amenity and alleviated urban separation. Benefit of tree canopy from reduced street heating. Heritage benefits resulted from heritage preservation and enhancement	Yes
<b>2. Safety benefit</b>	Safer street and safer place where the benefits have not been captured in road safety benefit from vehicle crash reductions	Yes
<b>3. Traffic calming and speed reduction</b>	Traffic calming and slowing down will cause vehicle delays and travel time dis-benefit. Traffic calming will reduce pedestrian waiting time. It will also provide additional urban street amenity and bring more foot-prints	Yes
<b>4. Increased pedestrian activities in the place</b>	Benefits associated with induced active transport such as health and environmental benefit	Yes
<b>5. Increased bicycle trips</b>	Benefits associated with induced active transport such as health and environmental benefit	Yes
<b>6. Reduced car trips in the 'place'</b>	Reduced noise and pollution in high density areas	Yes
<b>7. Boost to local economy</b>	Employment, household income business output and Gross State product	No
<b>8. Land use and land value uplift</b>	Land value uplift attributable to transport improvements with appropriate adjustment of double-count of travel time and accessibility improvements	Partially
<b>9. Density and agglomeration benefits</b>	Dynamic Wider Economic Benefits (WEBs) from actual density changes in contract with effective density change for Static WEBs	No

Benefits 1 to 6 in Table 1 can be added to other core benefits of transport projects (i.e. value of travel time savings, vehicle operating cost savings, road crash reduction and environmental benefits) to estimate the Benefit Cost Ratio (BCR). Benefit items 7 and 9 are economic impacts that are not additive to conventional benefits and thus should not be used in the BCR calculation. Benefit items 8 may be included in core benefits if double-counts with other benefits can be avoided.

A worked example has been provided below and some further project experience has been presented in Table 2.

**Worked example:**

Place benefits from dynamic community space provided on street side

As part of urban road upgrade, dynamic community spaces (DCS) have been introduced. Figure below shows various use of dynamic community spaces including food trucks or mobile eateries, local events or entertainment, seating arrangements to provide outdoor options and respect Covid-19 regulations.



Note: Courtesy to David Adams, Director Infrastructure Advisory, Aurecon, who developed project economic appraisal.

The benefit of the better use of dynamic community spaces is measured as economic value of increased pedestrian activity, which is the value of visitors' stay in the area. The introduction of dynamic community spaces will encourage visitors to stay longer. Dynamic community spaces will help transform "roads" dedicated solely to vehicular traffic into "streets" accommodating a multiplicity of community use, from temporary food trucks or entertainment, to permanent structures built by businesses or local councils.

Better use benefit can be estimated by the equation:

$$\text{Better use benefit} = \text{Economic benefits of DCS per square m} \times \text{size of DCS}$$

The summary of key assumptions for valuing this benefit are given below followed by detailed explanation for assumptions:

- Total estimated number of visits per year is 3.49 million
- The number of visitors per square m is 0.5
- Total available hours per dynamic community spaces (6am-9pm) is 15 hours
- Occupancy rate of the dynamic community spaces is 50%
- Time at dynamic community spaces per person is 10 min and
- Economic benefit of time in the area is \$10.49 per hour using a dataset known as Dspark

The above assumptions led to an estimate of economic benefits \$29 million (present value for 30 years) derived from dynamic community spaces.

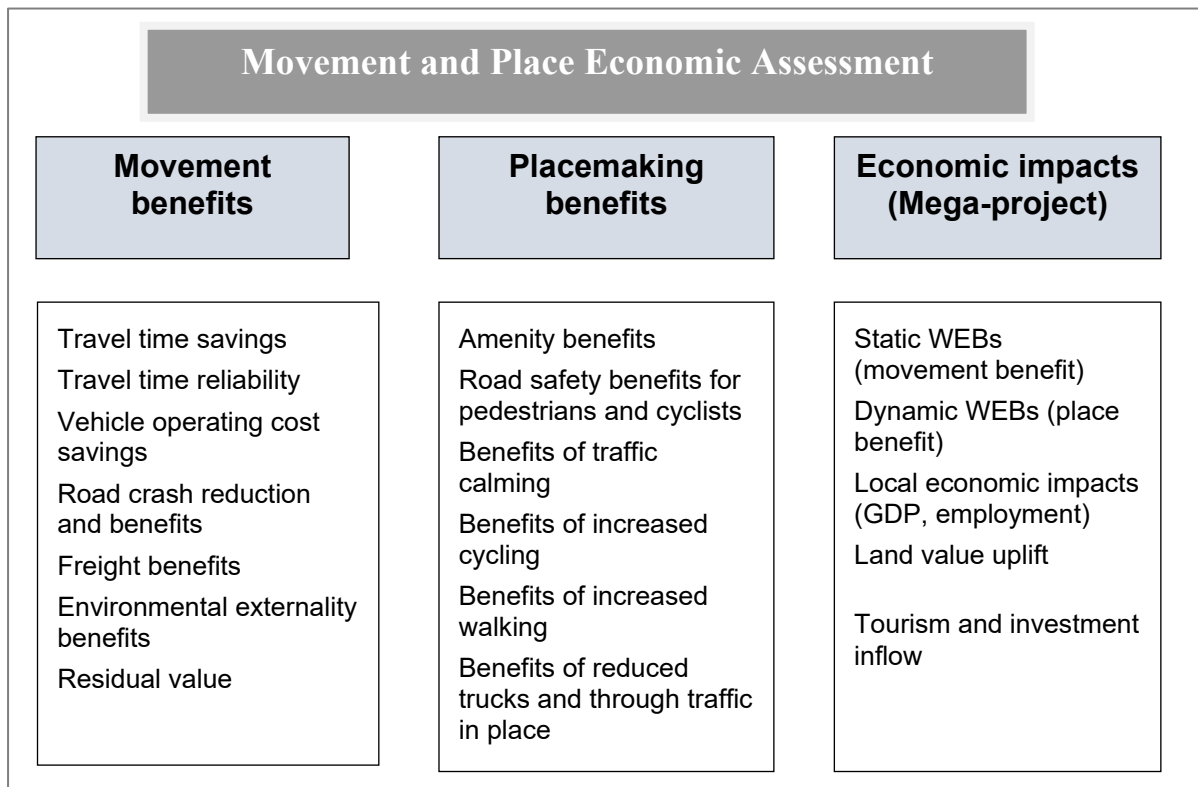
**Table 2 Examples of recent projects with estimated place benefits**

Project type	Place benefits identified	Place benefits as a % of the total project benefits
Highway Bypass	Amenities for pedestrian and cyclist	5.7%
Ferry Terminal Precinct	Place experience and amenity in a newly created ferry precinct in a tourism destination	22.1%
Street Upgrade	Benefit of dynamic community space converted from traffic lane	44.1%
Regional Highway Upgrade	Placemaking uplift and resilience value	9.8%
Active Transport	Amenity benefit and journey ambience	8.1%

## 5. Concluding remarks

By following recommended methodology in the *Movement and Place Evaluation Guide*, the estimated placemaking benefits should be mutually exclusive to other transport benefits to avoid double counting. The placemaking benefits can be treated as a core economic benefit for estimating the project Benefit Cost Ratio (BCR). The combined Movement and Place Economic Assessment framework is illustrated in Figure 5.

**Figure 5 Combined Movement and Place economic assessment**



It has been predicted that cities around the world and in Australia will gradually reduce cars in city centres and sub-centres. Cities are rebalancing the movement and place functions of road and street. In various city shaping visions and strategies, some streets will be highly walkable, some arterial roads and motorways will be more for movement purposes, and other corridors will be in between for both keeping people and goods moving and creating places for people



to live, work, play and enjoy. While motorways, arterial roads and streets are rebalancing their movement and place functions, mass public transport combined with higher-density development in station precincts could also be a successful model for solving competing movement and place priorities, whilst accommodating higher populations in a more sustainable way.

The concept of placemaking is relatively new and placemaking evaluation are constantly evolving. This *Movement and Place Evaluation Guide* has been based on research by the economic team in Transport for NSW of the best international practice of placemaking benefit estimation. Ideas portrayed in this Guide have evolved from discussions with Transport for NSW Project Managers, Project Directors, transport modellers, urban planners and economists. The approaches discussed have been tentatively used in a dozen of place focusing projects and feedback has led to continual improvement of this draft document. The Guide is released for project testing for 12 months. We seek feedback on TfNSW Movement and Place Evaluation

## References

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NSW Government (2020) Practitioner’s Guide to Movement and Place, Implementing Movement and Place in NSW. Issue No. 0.1 – March 2020. Joint release by Government Architect (GANSW) and Transport for NSW (TfNSW) as a testing version within Government for 12 months

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