PRACTITIONER’S GUIDE TO MOVEMENT AND PLACE

Implementing Movement and Place in NSW
About this guide

This guide is for practitioners involved in the planning, design, delivery, and operation of our transport networks and the areas around them. This includes both public and private sector decision-makers, planners, engineers, urban designers, and project managers.

The guide has been prepared collaboratively by Government Architect NSW (GANSW) and Transport for NSW (TfNSW) with input from a range of NSW Government agencies and local government representatives.

The purpose of Movement and Place

Movement and Place aims to achieve a well-designed built environment:

— as described in Better Placed: An integrated design policy for the built environment of NSW (GANSW 2017), and the Premier’s Priorities for a Better Environment
— that supports communities and the needs of people through a process and evaluation method that assists people to achieve those outcomes.

This guide seeks to change some established working practices and standards to produce more consistent, higher quality outcomes, and asks professionals to think differently about their role in creating successful places.

The role of this guide

The role of the guide is to provide a common structure for place-based transport and city and town planning across NSW, and to support built environment practitioners by explaining how to apply this approach to projects and plans.

This guide outlines:

— a collaborative method for practitioners, stakeholders, and the community to work together
— shared responsibility and a shared language to support collaboration across disciplines, agencies, and levels of government
— a process for consistently implementing this approach in a range of decisions and project types, at various scales, and throughout the life cycle of a plan, project, or asset
— criteria for measuring and evaluating the alignment of movement and place both in existing contexts and in comparing future options.

Figure 1: Built environment indicators: criteria for evaluating movement and place
Context

The Movement and Place Practitioner’s Guide has been prepared in the context of an increasing emphasis within State and local government on **public space** and **place-based planning**. This context includes responding to the broader challenges facing metropolitan and regional areas, such as adapting to a changing climate, changing demographics, population growth, and supporting healthy lifestyles and social interaction.

The guide also establishes a process and language that sets the conditions for **successful places** to occur around roads and streets, an outcome common to **Future Transport Strategy 2056** (TfNSW 2018), **Connecting to the future: Our 10 Year Blueprint** (TfNSW 2019), **Outcome Budgeting** (NSW Treasury), as well as the **Greater Sydney Region Plan** (Greater Sydney Commission 2018), and **Better Placed** (GANSW 2017). The guide also supports other government outcomes, for example the Premier’s Priorities for a Better Environment (Greening our city, and Greener public spaces).

The guide is one component of the NSW Government’s Movement and Place Framework, together with a toolkit and mechanisms (see Figure 5). The mechanisms bring together knowledge and expertise from across State and local government to create a body of expertise and community of practice, overseen by the NSW Movement and Place Implementation Board. The toolkit includes an expanding suite of guidance documents, advisory notes, and technical tools.

What’s new?

For those familiar with Movement and Place, several of the concepts presented in this guide are new:

— A **six-step process of collaboration** has been established as the means of taking a Movement and Place approach (see Section 2).

— New methods are advanced for **understanding place** through “form, activity and meaning” (see Section 3.1), and **movement** in its relationship to, through, and within places (see Section 3.2).

— **Performance indicators** have been defined for all projects to report against, grouped into five built environment themes, including core and supplementary indicators for evaluating options (see Section 3.5).

— **Classification of street environments** has been adapted, and its role and purpose redefined (see Section 3.6), including refined **movement significance criteria** for the “y” axis and new **place intensity criteria**, to guide classification on the “x” axis.

— A reporting process and template has been developed for documenting progress.

For those not familiar with Movement and Place, refer to **Aligning Movement and Place** (GANSW 2019).

This guide replaces previous guidance in NSW on Movement and Place including the draft Road Planning Framework, and is intended to supplement Austroads Guides in relation to movement and place in NSW.
Newcastle Light Rail, stopping in front of the new Newcastle University Campus in the city, as part of the city’s urban renewal development program.

Image: Ben Stevens, Shutterstock.
Section 1: Introducing Movement and Place

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1.2 Movement and Place objectives  

1.3 Where does Movement and Place apply?  

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Section 2: Implementing a Movement and Place approach

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Step 1: Establish the project scope, vision, objectives, and evaluation criteria  
Step 2: Understand place  
Step 3: Understand movement  
Step 4: Overlay and discuss conflicts, issues, and opportunities  
Step 5: Develop options  
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Reporting and monitoring  

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Built environment indicators in detail  
References  
Further reading  
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About GANSW and TfNSW  

Government Architect NSW acknowledges the Traditional Custodians of the land and pays respect to Elders past, present and future. We honour Australian Aboriginal and Torres Strait Islander peoples’ unique cultural and spiritual relationships to place and their rich contribution to our society. To that end, all our work seeks to uphold the idea that if we care for Country, it will care for us.
SECTION ONE

INTRODUCING MOVEMENT AND PLACE
1.1 What is Movement and Place?

Movement and Place is a cross-disciplinary, “place-based” approach to the planning, design, delivery, and operation of transport networks. It recognises the network of public spaces formed by roads and streets and the spaces they adjoin and impact.

Movement and Place establishes a collaborative, iterative process that can guide consultation, analysis, decision-making, and evaluation throughout the life cycle of a plan or project.

Practitioners specialising in movement (e.g. transport planning and traffic engineering) and place (e.g. strategic planning, urban design, and landscape architecture) have a shared accountability to foster a well-designed built environment including effective transport networks. The Movement and Place Framework lays a foundation for collaboration and co-design by outlining a common language across government and between levels of government. A common language allows practitioners across a variety of disciplines to have meaningful conversations about integrated outcomes.

Place-based planning

“Place-based” planning1 is an emerging approach across NSW Government that involves taking a collaborative, spatial, long-term approach to develop contextual responses that better meet the needs of local people and their environment in a defined geographic location. It aims to support and build thriving communities and is ideally characterised by partnering and shared design, shared stewardship, and shared accountability for outcomes and impacts2.

This planning approach underpins the Movement and Place process and aligns with “place based integrated service design” in Our 10 Year Blueprint (TfNSW).

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1 As defined in the Greater Sydney Region Plan p76.

2 Adapted from Dart J (2018), Place-based Evaluation Framework: A national guide for evaluation of place-based approaches, for the Queensland Government Department of Communities, Disability Services and Seniors and the Australian Government Department of Social Services.
1.2 Movement and Place objectives

Movement and Place is aimed at achieving efficient investment, by thinking about the built environment holistically including the social, environmental, and economic context.

The objective of Movement and Place is to achieve roads and streets that:

— contribute to the network of public space within a location, where people can live healthy, productive lives, meet each other, interact, and go about their daily activities

— are enhanced by transport and have the appropriate space allocation to move people and goods safely and efficiently, and connect places together. Balancing movement and place recognises that trade-offs may be required to achieve a best fit for the objectives.

The Movement and Place process is designed to ensure this is done in the context of informed conversations, working collaboratively towards a shared vision, identifying a range of options to determine the best approach, considering multiple points of view, and consulting with multiple disciplines and stakeholders.

Movement and Place provides a method and common language that enables us to deliver the shared outcomes set out in both Future Transport and Better Placed, as illustrated on the following pages.
Supporting the NSW transport outcomes, vision, and principles

Movement and Place supports *Future Transport* (TfNSW 2018) and *Our 10 Year Blueprint* (TfNSW 2019), as follows:

**Connecting our customers’ whole lives**

1. **Balance movement within, to and from, and through places**

Movement and place have a different relationship depending on whether trips are within, to and from and/or through places; balance may require exploration of alternatives such as rerouting through-movement where it conflicts with those places, and managing the road or street differently by time of day, week and season.

To provide safe, reliable, and efficient movement of people and goods between regions and strategic centres, places of high activity are best separated from through-traffic at high volumes and at higher speeds that presents an unacceptable risk to people walking and cycling.

2. **Make safer environments**

Movement and Place contributes to a Safe System approach\(^3\) to improve road safety for all users and create a street environment free from death and serious injury. Roads and streets should be sensitive to place with self-explaining speed limits and infrastructure that aligns with the surrounding context. Movement and Place also considers other forms of safety such as personal safety.


**Use space efficiently**

Movement and Place considers all modes of transport and considers whether the balance is right for managing current and future conditions. Where modes share the same space they need to be prioritised in a way that balances the needs of the different users and the needs of the communities they pass through.

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\(^{3}\) *Road Safety Plan 2021: Towards Zero* (TfNSW 2018)

**Figure 2: Movement and Place is about the whole street and its context**
Successful places

3 Improve the amenity of places
The design, planning, and management of roads and streets needs to consider potential impacts on the amenity of adjacent places – public spaces and land uses. Movement and Place also distinguishes between movement supporting place (such as public transport connecting places), and movement that is best separated from places (such as long-distance travel).

4 Support the needs of all users
By considering the whole street, including footpaths, from property line to property line, and the interfaces with land use, Movement and Place takes into account the needs of all users, including people walking and cycling, making deliveries, and using public transport, as well as the broader community, people spending time in places, going to school, shopping, dining, exercising, or waiting for a bus.

Transport options also provide users with differing needs and abilities greater choice and a more resilient and equitable system. They can provide multiple ways of getting around at different levels of affordability and ability, and give autonomy to non-drivers, such as the young and old.

5 Support the economy by enabling the movement of goods
Striking the right balance includes supporting local economies by enabling the movement of goods, such as considering last-mile freight strategies e.g. delivery hours, consolidation centres or electric freight vehicles. At the same time, impacts of long-distance freight through places can be minimised.

6 Support sustainable development
Movement and Place can contribute to protecting our networks of urban green spaces and waterways, and provide access to these spaces for physical and mental wellbeing, as well as provide ready access to daily needs and essential services, and cleaner and space-efficient modes of transport, such as walking and cycling.
Delivering a well-designed built environment

Movement and Place supports a well-designed built environment (an environment that is healthy, responsive, integrated, equitable and resilient – this is the shared responsibility of all practitioners), as set out in Better Placed (GANSW 2017), as follows:

1. Create healthy environments

Evidence\(^4\) shows we can improve public health and wellbeing by creating built environments that are more walkable, and providing access to quality public open space, public transport, and local fresh food.

2. Respond to context

The Movement and Place approach can be flexibly applied to a different range of contexts, and considers the outcomes sought for each place, throughout the process.

3. Create resilient environments

We need to adapt to a changing climate. Having indicators that relate to the natural environment facilitates mitigation against very hot days through increased shading such as urban street tree planting and implementing water-sensitive design to mitigate against flash flooding.

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Figure 3: Movement and Place delivers a well-designed built environment
Integrate public space and land uses

A well-designed street environment considers not only transport users but also the role of the street within the network of public space, and the interface between the street and adjacent land uses and public space.

Achieve equity through collaboration

The workshop model suggested in the Movement and Place approach promotes active participation of multiple people, with differing knowledge, so that outcomes are more equitable and not biased towards a specific skill set.

Recognising all users including those on transport and within the place at different times of day, Movement and Place seeks to minimise inadvertently detracting from the experience and productivity of another user, or the place as a whole.
1.3 Where does Movement and Place apply?

Movement and Place principles apply throughout NSW and can be adapted to any scale of project and level of decision-making. They apply to places where activity occurs – e.g. within both larger cities and smaller towns – and to the connections between these places.

The Movement and Place core process can be used to guide a range of movement-related projects at various phases, from a network or city scale (e.g. developing place-based movement strategies), to local streets and neighbourhoods (e.g. assessing speed zones or determining the type and frequency of designated pedestrian crossings).

<table>
<thead>
<tr>
<th>CITY/REGION NETWORK</th>
<th>POLICY/STRATEGY (STRATEGIC DESIGN)</th>
<th>PLANNING</th>
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<tbody>
<tr>
<td></td>
<td>Region plan</td>
<td>Integrated network plan</td>
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<tr>
<td></td>
<td>Inform funding packages (e.g. centres and placemaking package) or project prioritisation (by prioritising parts of the network or specific actions)</td>
<td>Reframe major proposals to maximise built environment benefits</td>
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<td></td>
<td></td>
<td>Use classification to inform or narrow investigations</td>
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<tr>
<th>TOWN/DISTRICT</th>
<th>LARGER SCALE</th>
<th>POLICY/STRATEGY (STRATEGIC DESIGN)</th>
<th>PLANNING</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>District plan</td>
<td>Inform funding packages (e.g. centres and placemaking package) or project prioritisation (by prioritising parts of the network or specific actions)</td>
<td>Integrated transport plan, interim land use and infrastructure implementation plan</td>
</tr>
<tr>
<td></td>
<td>Place identity document</td>
<td>Identify road and street elements that influence place attachment</td>
<td>Identify strategic networks and places of greater intensity</td>
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<td></td>
<td></td>
<td></td>
<td>Understand performance</td>
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<thead>
<tr>
<th>PRECINCT/SUBDISTRICT</th>
<th>POLICY/STRATEGY (STRATEGIC DESIGN)</th>
<th>PLANNING</th>
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<tbody>
<tr>
<td></td>
<td>Strategic framework</td>
<td>Precinct structure plan</td>
</tr>
<tr>
<td></td>
<td>Using actions relating to policy to shape outcomes</td>
<td>Reveal key issues and opportunities and identify the best options to address these</td>
</tr>
<tr>
<td></td>
<td>Local strategic planning statement</td>
<td>Evaluate options</td>
</tr>
<tr>
<td></td>
<td>Identify places, their needs, issues and opportunities</td>
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<thead>
<tr>
<th>NEIGHBOURHOOD/CORRIDOR</th>
<th>POLICY/STRATEGY (STRATEGIC DESIGN)</th>
<th>PLANNING</th>
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<tbody>
<tr>
<td></td>
<td>Access strategy</td>
<td>Town centre revitalisation</td>
</tr>
<tr>
<td></td>
<td>Understand the local objectives, needs and opportunities to inform the strategy and short-term interventions</td>
<td>Understand the areas of poor performance to address the networks that need to be accommodated</td>
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</tbody>
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<thead>
<tr>
<th>BLOCK/STREET</th>
<th>POLICY/STRATEGY (STRATEGIC DESIGN)</th>
<th>PLANNING</th>
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</thead>
<tbody>
<tr>
<td>Main street improvement project</td>
<td>Use vision to inform outcomes</td>
<td>Concept design, cycleway</td>
</tr>
<tr>
<td></td>
<td>Identify modal priorities, and areas of deficiency that need to be addressed</td>
<td>Assign responsibilities</td>
</tr>
</tbody>
</table>

Figure 4: A Movement and Place approach applies across a range of scales and stages
### LATER STAGES

<table>
<thead>
<tr>
<th>DESIGN AND DELIVERY</th>
<th>OPERATIONS AND MAINTENANCE</th>
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<tbody>
<tr>
<td>Codes and guidelines</td>
<td>Operational concept</td>
</tr>
<tr>
<td>Inform street design guides</td>
<td>Report on performance</td>
</tr>
<tr>
<td>Guide general expectations</td>
<td>Guide network management</td>
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<tr>
<td></td>
<td>Support the management of places</td>
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<tr>
<td>Bus improvement plan</td>
<td>Rolling investment programs</td>
</tr>
<tr>
<td>Identify new network arrangements and operational refinements</td>
<td>Place vision for continuous improvement</td>
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<tr>
<td></td>
<td>Prioritise regular maintenance and small capital works</td>
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<td></td>
<td>Monitor performance</td>
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<tr>
<td>Local bus network plan</td>
<td>Local area traffic management plan</td>
</tr>
<tr>
<td>Apply new network arrangements and operational refinements</td>
<td>Support decision-making on hours of operation, speed zones, kerbside use</td>
</tr>
<tr>
<td>Precinct master plan</td>
<td>Intersection upgrade</td>
</tr>
<tr>
<td>Identify right mix of land use, public space, and transport outcomes</td>
<td>Ensure alignment to actions identified for that street within context of vision and objectives</td>
</tr>
<tr>
<td>Prioritise programs</td>
<td>Rolling programs</td>
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<tr>
<td>Road widening</td>
<td></td>
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<tr>
<td>Assign responsibility for actions, and aligning priorities with funding</td>
<td>Develop operational improvements, trials and pilots to incrementally achieve the vision and objectives based on emerging conditions (decrease in traffic volume, spare green time, etc.)</td>
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<tr>
<td>Guide allocation of road space</td>
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<tr>
<td>Tests and pilots</td>
<td></td>
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<tr>
<td>Identify temporary interventions (tactical urbanism) and live-testing opportunities</td>
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</table>
1.4 Who implements Movement and Place?

Balancing movement and place is the shared responsibility of the various organisations and individuals who plan, design, deliver, and manage our public space and movement systems.

This includes:

— State government agencies
— local governments
— industry professionals including engineers, traffic and transport planners, urban designers, architects, landscape architects, strategic land-use planners, business case developers, and project managers.

A Movement and Place approach is best used at the stage in which network-level decisions are contextualised to local places, after indicative broad demand patterns for mobility across a city or region have been identified. Generally this is at early stages in a process, and at a program level (for small projects) and a project level (for larger projects).

For example, it can be used for an individual road or street, to workshop how to integrate a citywide or regional network within that specific local context.

Where a Movement and Place approach is applied to a portfolio of work or program – because small, similar projects have been packaged into a single funding stream – individual projects would be required to align to the outcomes of that process at the higher level.

Refer to advisory notes for more detail.

This document is one of a series of initiatives within the NSW Movement and Place Framework. In addition to this guide, the Movement and Place Framework will include:

— an accompanying guide: Evaluator’s Guide to Movement and Place, setting out considerations for evaluating projects, in reference to the Better Placed design policy and Future Transport strategy
— a set of tools and advisory notes providing advice on specific issues such as road space allocation, speed zoning, the value of trees, and active routes to school. These will be developed progressively over time.

Implementation of Movement and Place is guided and monitored by the Balancing Movement and Place Implementation Board consisting of a range of NSW Government agencies. The Board has responsibility for endorsing advisory notes and tools, at which point they become part of the Movement and Place Framework.
**Figure 5: The NSW Movement and Place Framework**
SECTION TWO

IMPLEMENTING A MOVEMENT AND PLACE APPROACH
Overview of the core process

The core process presented in the following six steps outlines the spectrum of activities that constitute “taking a Movement and Place approach” – from setting a vision to determining a preferred option for implementation. The six steps may be iterative.

Practitioners should aim to use existing work where possible and use the core process to elaborate on and complete the steps. Some of the required analysis or decisions may already have been completed as part of a previous strategic planning activity. For example, a business case needs assessment would cover Steps 1 and 4, while a strategic business case would complete Step 5, and a final business case, Step 6.

The core process set out here requires collaboration and also “design thinking” – using spatial information in the form of network and place maps, overlays, comparisons and/or scaled options – to better understand the problem/opportunity, outcome and solutions. It supplements other processes (such as business case processes) and should be used for practitioners working together in taking a Movement and Place approach.

The process should not be taken as preventing more integrated methods of working including interdisciplinary practitioners, more workshops, co-design with joint practitioner teams, or co-design with the community.

Figure 6: The six steps in the core Movement and Place process
Who is involved?
The core process uses a workshop model with a core team of practitioners leading the process and preparing analysis for discussion and refinement at those workshops. The process is scalable to smaller meetings or larger forums with break-out sessions. Those involved will generally depend on the stage and scale of projects as follows:

**Core team**
The core team composition may vary from individuals with interdisciplinary skills and “design thinking”, through to specialist teams coordinated by a project manager, depending on the scale of the project. Typically the core team skills would include:

<table>
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<tr>
<th>Early stages</th>
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<tbody>
<tr>
<td>Capability in spatial planning and strategy (transport planning, strategic land-use planning, strategic urban design) and project management</td>
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<table>
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<tr>
<th>Later stages</th>
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<tbody>
<tr>
<td>Capability in detailed design actions (road design, urban design, landscape design), assessment and delivery (traffic engineering, land-use integration, structure planning, evaluation) and project delivery, management, and monitoring</td>
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**Workshop and meeting participants**
Workshops and meetings should include a balance of movement and place practitioners and relevant key stakeholders, depending on the project, location, and extent of work already completed. Typically workshop participants would include:

<table>
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<tr>
<th>Larger scale</th>
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<tbody>
<tr>
<td>Core project team; representatives from all relevant local and State government agencies; other key stakeholders, including industry and community groups, local custodians and members of the local community; subject matter experts (~ 20 people)</td>
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<th>Smaller scale</th>
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<tr>
<td>Core project team including a representative from each key delivery agency and council as community representative (4–8 people)</td>
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Where possible, directly involve the community in workshops.

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**Key**

- Gather information
- Discuss (workshop)
- Measure/evaluate
- Document/report
Establish the project scope, vision, objectives, and evaluation criteria

A shared, place-based vision applies to a geographic area (defined as the study area for a project or plan) and incorporates the aspirations of relevant local and State government agencies as well as the people, community, businesses, and other organisations connected with the place.

1.1 Establish the project scope and context

Inputs:
— Information and data on the strategic social, environmental, and economic context for the plan or project (relevant to shaping the case for change), for example:

<table>
<thead>
<tr>
<th>Social &amp; cultural context</th>
<th>Environmental context</th>
<th>Economic context</th>
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</thead>
<tbody>
<tr>
<td>Population and people</td>
<td>Climate</td>
<td>Employment and income</td>
</tr>
<tr>
<td>Culture and community</td>
<td>Landscape and landform</td>
<td>Industry and business</td>
</tr>
<tr>
<td>History and heritage</td>
<td>Ecology and wildlife</td>
<td>Resources and value</td>
</tr>
<tr>
<td>(incl. Indigenous culture/heritage)</td>
<td>Hydrology and waterbodies</td>
<td>Investment and tenure</td>
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<td>Politics and governance</td>
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<tr>
<td>Place sentiment</td>
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Figure 7: Understanding the broader context

— Planning documents capturing community aspirations, policies, strategies, and plans relevant to the study area, particularly those that are supported by public consultation, such as local strategic planning statements.

Outputs:
— Defined study area and area of influence
— Governance structure
— Understanding the broader context
— Understanding the planning intent.

Process:

A Identify the study area for the plan or project, including the wider strategic and geographic context and the area of influence. Recognise the spatial constraints.

B Establish the core project team and the project governance arrangements, including review processes and decision-making roles (if this has not already been done).

C Understand the study area’s broader context (spatial geography):
— Review the social and cultural, environmental, and economic factors that influence the study area. This could be facilitated by a local place expert in a workshop environment.
— Undertake site visits – observe people, the current environment, and how it works.

D Understand the planning intent for the study area:
— Review existing documented aspirations, policies, strategies, and plans relevant to the study area: this is the “policy context” (in the Infrastructure NSW business case toolkit).
— Confirm this policy context is current for the area, and identify any gaps such as policies and plans published since it was documented.
— The “planning intent” is the combination of the current known, planned, and likely interventions derived from the policy context that relate to the time horizon of the project or study (and may require interim steps in the case of long-term plans, generally every 5 to 10 years).

— The “case for change” for major investment in the study area is relevant to the planning intent e.g. a transport and mobility case for increasing public transport may change the desired street environment to one that best aligns with that investment.

E Gather detailed and technical information. You may need to commission specialist reports; studies; data; assessments informed by the identified social and cultural, environmental, and economic factors – appropriate to the scope of the project.

The broader context (spatial geography) and policy context set the frame for the vision and objectives, to ensure they are strategically aligned and deliver intended outcomes.

Setting the vision and objectives at this stage also avoids unconscious bias towards solutions arising from detailed analysis (for example, an objective to “increase average speeds” where a differential between posted and average speeds is identified, independent of context). However, recognising that detailed analysis helps identify gaps and refine outcomes, the core process provides an opportunity to revisit the problem definition in Step 4.5, to consider the issues and opportunities agreed in a multi-stakeholder workshop.

1.2 Synthesise or establish a shared, place-based vision

Inputs: Publicly consulted documents that contain visions, objectives, and outcomes for places in the study area including relevant State and local government policies, strategies, and plans e.g. Premier’s Priorities, State priorities, local strategic planning statements, regional and district plans, and community plans.

Where there is not an existing vision, stakeholders and the community may need to shape this vision at the outset. See the advisory note Strategic visioning (GANSW 2018).

Output: Vision statement

Process:

A Identify the stakeholders who need to be involved in establishing the shared vision for the area, and organise workshops and/or meetings to bring them together.

B In collaboration with the stakeholders:
   — Outline the planning intent for the study area.
   — Discuss, validate, and confirm which inputs will inform the vision.
   — Interpret and consolidate these inputs to agree on a shared, area-specific (place-based) vision for the study area.

C Document the vision as a clear statement. A good vision should be specific, and set the conditions for creating successful places, taking into account the people that use them.

In a business case, the vision can be described as a “driving principle”, informing and guiding objectives and evaluation criteria.
1.3 Identify objectives based on the vision

The objectives are the project’s or plan’s desired qualitative outcomes, derived from the vision. The objectives may be general or specific, depending on the plan or project.

Input: Place-based vision for the study area

Output: List of place-based objectives for the project or plan

Process:
Working as a group with the core team and stakeholders:

A Discuss and agree on what needs to be covered by the objectives, using the five built environment themes (see Section 3.5) as a base.

B Determine a set of objectives based on the themes. Considerations might include:
   — How do the objectives contribute to the place vision by creating a well-designed built environment, i.e. an environment that is healthy, responsive, integrated, equitable, and resilient? Are any of the five themes particularly relevant to this context?
   — How can movement best support the vision?
   — How can place (both public space and other land use) best support the vision?
   — Do some objectives apply only to specific locations within the study area?
   — What needs to be maintained, reduced, or increased?

C Ensure the objectives consider the wider strategic context (such as connectivity for people and goods to major centres) as applied to the local context (such as the street locations within the study area relevant to that strategic context).

1.4 Establish evaluation criteria for the objectives

Inputs:
   — Project or plan objectives
   — Any mandatory obligations specific to the project (e.g. s22 of the Work Health and Safety Act 2011 in relation to design safety of a “workplace”)
   — Built environment performance indicators. See Section 3.5 and the Appendices. Further information is contained in the advisory note Built Environment Performance Indicators (GANSW 2020).

Outputs:
   — Performance indicators (including core, supplementary and project-specific indicators) that will be used to evaluate options (in Steps 5 and 6)
   — Targets and benchmarks that can be used for gap analysis and to compare options, if applicable (in Steps 5 and 6).

Process:
Working as a group with the core team and stakeholders:

A Decide which performance indicators the project team will use to measure and evaluate the options, ensuring that they are focused on both movement and place outcomes:
   — Consider how the core performance indicators will apply to the plan or project.

Core performance indicators are used to measure performance against the five built environment themes: amenity and uses, access and connection, character and form, green and blue, comfort and safety (see Section 3.5).

   — Identify any supplementary or project-specific indicators that will be measured.

Supplementary indicators are listed in Section 3.5. These are not required for every project but are selected by the project team according to the context and objectives. For example, a project objective to improve cycling within the study area would have a strong correlation with adopting a supplementary indicator of “cycling attractiveness”.
Supplementary indicators should be selected from the standard list to enable similar projects to be compared in the future. Project-specific indicators can be adopted (in addition to the core and supplementary indicators) where the context and objectives cannot be addressed from the standard list. These are likely to be specific to the study area and spatial in nature. For example, an objective to improve water quality in Example Creek would require a project-specific indicator such as “% of water filtration within the catchment”.

B Identify **thresholds** for some of the indicators, as applicable. These may apply to core, supplementary, or project-specific indicators. Thresholds may be set to quantify the minimum desired outcome. A threshold may be either a project-specific target, which must also be determined, or a pre-determined benchmark establishing a minimum standard, that the project team chooses to adopt. Where benchmarks exist that relate to the study area, project teams are encouraged to adopt those benchmarks.

These may also be useful in Steps 5 and 6, to prioritise issues and opportunities, and to compare options against the current state and against each other.

The following Steps 2 and 3 – understanding place and understanding movement – are not necessarily linear processes; they may happen in parallel. Information gained from one may feed into the other, and each should consider the other. For example, understanding place includes a spatial analysis of movement networks, and understanding movement includes analysing the routes and destinations served, including stops, interchanges, and footway space.
Step 2 Understand place

This aim of this step is that Movement and Place practitioners and project stakeholders establish an evidence-based, shared understanding of the places that will be affected by the project or plan and can therefore better understand the implications of achieving the vision and objectives identified in Step 1, and identify existing gaps in performance.

Most practitioners will be familiar with “site analysis”, often a statutory requirement as part of planning approval. Place analysis involves a bigger picture and more rounded study of a particular place, that takes into account its interrelated layers of activity, physical form, and meaning, across social and cultural, environmental, and economic factors.

A place’s characteristics and qualities can be qualitatively and quantitatively measured. This contributes to an evidence base for decision-making and evaluating options, informs business cases and investment decisions, and supports place performance monitoring.

There are many methods that can be used to involve the community, other stakeholders, and subject matter experts in this process. See the advisory note Place analysis (GANSW 2019).

The level of detail and comprehensiveness of place analysis will depend on the resources available for the plan or project, including the following considerations:

— the location and size of the place or project
— priorities for the place or project
— capabilities of the agency, project team, government project partners, and whether external consultants or experts are required.

Inputs:
— Place data, particularly existing data used to assess the baseline for the core indicators, and any supplementary or project-specific indicators e.g. tree canopy cover (a data set for Greater Sydney is maintained by the Department of Planning, Industry and Environment), or points of interest for public urban facilities etc.
— Community consultation to understand community sentiment, needs, and values (places of particular meaning) is desirable at this stage.

Outputs:
— Documentation (including maps) of place issues and opportunities
— Optional: map of place intensity.

2.1 Analyse existing place qualities

Process:
A Undertake a spatial analysis of the study area’s place qualities, using mapping:
   — Generate maps using the place data. As a minimum, map the built environment (see urban design analysis, below).
   — Additional maps may be required depending on the scale and nature of the project. For example, a greenfield project is likely to require a map of a proposed or conjectural built environment (e.g. the structure plan or concept master plan), as well as most aspects of the natural environment (landscape, landform, ecology, hydrology).
B Undertake a detailed urban design analysis of the layout, division, and built form of the particular place, including utilities (see draft Integrating Urban Design, GANSW 2019).
C Understand how the place is used over time, for example, the daytime, evening and night-time economy. How is public space used in each period, and how intensively? Do any irregular events or seasonal patterns affect the “pulse” of the place?
2.2 Compare and contextualise

Process:
A. Compare the place to similar places and assess the similarities and differences.
   — Use precedents: What is considered best practice for a place of this kind (scale, purpose, etc.)? What can be learned from these examples? What is missing here?

B. Understand the strategic picture.
   — How does the vision for the place fit within the local, State and national plans for the place. Does it align with these plans? If not, why not?
   — What is the place now, what role does it perform, what works, what is valued?
   — What is the history of the place – why is it like it is?

2.3 Map and document issues and opportunities

Process:
A. Map the issues and opportunities to inform the case for change. In its most basic form, this may be a map of the areas most suitable to change, enhance, and maintain. Opportunities might be identified by referring to the evaluation criteria identified in Step 1. This map will be used as a base map in Step 4.

B. Document the issues and opportunities, as a supplement to the map. This is to help interpret the map (expanding on the issues and opportunities mapped in short form) and capture any non-spatial issues and opportunities.

C. As an optional exercise, to help identify and understand the issues and opportunities (Step 4):
   — Use the Movement and Place classification method (see Section 3.6) to identify places of greater or lesser intensity within the study area.
   — Map these places and their interface with roads and streets (such as entrances and active frontages).
   — Identify the place intensity of their adjacent roads and streets.
**Step 3 Understand movement**

The aim of this step is to understand how transport networks are integrated with land use and public space within the study area, and how they serve users’ needs. This should inform a better understanding of the movement implications of achieving the place-based vision and objectives identified in Step 1—so that transport infrastructure and services support the vision. This understanding informs the subsequent discussions, decision-making, and evaluation of options.

**Inputs:**
- Plans, strategies, precedents, and analyses of existing, planned, and desired movement.

**Outputs:**
- Map of existing transport networks
- Planned intent for transport networks
- Optional: map of movement significance.

### 3.1 Compare and contextualise

**Process:**

**A** Compare the movement to similar contexts and assess the similarities and differences. Using precedents:
- Compare study areas—what is a similar-scaled study area, and what are the transport networks that support it? What is its mode share? Coverage?
- Compare interventions—what is considered best practice for movement in a place of this kind (scale, purpose, etc.), and for integration of this kind of transport network within places? What can be learned from these examples? What is missing in the study area?

**B** Understand the strategic picture
- Understand how the vision for movement fits within the local, State and national plans for the place. Is the movement to and from, through, and within the place aligned to these plans (proportion, mode, location)? If not, why not?

**C** Understand whether the built environment is safe by design, for example by:
- undertaking a risk assessment of key roads and streets
- understanding the crime rate and its causes, especially in night-time economy areas
- identifying any known safety issues, both formal (e.g. work health and safety issues), or in relation to best practice (such as crime prevention through environmental design [CPTED]).

**D** As an optional exercise, identify the existing, planned, and desired future movement significance for each road and street (See Section 3.6) to inform the issues and opportunities workshop (Step 4).

### 3.2 Map transport networks

**Inputs:**
- Local and State government plans and projections for future transport networks and services. Other inputs may also be appropriate, e.g. consultation with relevant network or area managers, including interviews or surveys as appropriate.

**Outputs:**
- Maps of the transport networks within the study area, showing the current state and the planned intent. Networks should show catchments and nodes where applicable.
**Process:**

A Gather data on the following transport networks (see Figure 8) and their interaction with the wider road and street network. These have been grouped according to user commonalities. This list is not exhaustive; you may need to capture other emerging forms of transport based on their users' behaviour. Networks include multiple modes as follows:
- public transport includes all modes
- light vehicles includes cars, taxis, deliveries, and servicing
- heavy vehicles includes strategic freight, abnormal loads, and dangerous goods
- cycling includes cargo bikes.

**MOVEMENT**

<table>
<thead>
<tr>
<th>GROUPING</th>
<th>NETWORK (FOR THE PURPOSES OF M&amp;P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public transport</td>
<td>All modes</td>
</tr>
<tr>
<td>Private vehicles (point-to-point transport)</td>
<td>Light Heavy</td>
</tr>
<tr>
<td>Active transport</td>
<td>Walking</td>
</tr>
<tr>
<td></td>
<td>Cycling</td>
</tr>
</tbody>
</table>

Figure 8: Transport network groupings for movement analysis

B Map the five transport networks (listed in Figure 8) in their current state and annotate the map with key features such as service patterns, patronage, number of people walking by time of day.

C Map the planned intent for each network, according to local and State government strategies and plans (such as city shaping corridors etc.).

**3.3 Map and document issues and opportunities**

A Map the issues and opportunities to inform the case for change. In its most basic form, this may be a map of the areas most suitable to change, enhance, and maintain. Opportunities might be identified by referring to the evaluation criteria identified in Step 1. This will be used as a base map in Step 4.

B Document the issues and opportunities, as a supplement to the map. This is to help interpret the map (expanding on the issues and opportunities mapped in short form) and capture any non-spatial issues and opportunities.

C As an optional exercise, to help identify and understand the issues and opportunities, identify the hierarchy of streets and roads making up that network within the study area, and classify the “existing state” movement significance (see Section 3.6). This would form its own map, separate to A and B.

Mapping movement, including the existing and known or likely future infrastructure and services, stops, and interchanges (i.e. the “planned intent”) can also split out how people and goods interact with the place, as shown in Figure 9.

Mapping can use separate overlays to enable comparison of the current state with future scenarios, aspirations, and opportunities.

Figure 9: Mapping movement from a network perspective

Here, for illustration, blue indicates the public transport networks, a stop location within the study area and that 40% of trips on public transport are to the place (that stop). Green indicates cycling, the key routes and destinations, with 100% of cycling trips being to the place. Grey indicates light vehicles, the route and a key access point, and shows 40% of trips are accessing the place (making deliveries, servicing, parking).
Step 4 Overlay and discuss conflicts, issues, and opportunities

This aim of this step is to identify the issues and opportunities associated with achieving the vision and objectives, based on the evidence and understanding gained in the previous steps. Classification may assist this process in large study areas, and early stages of projects, in order to narrow the focus of investigation.

**Inputs:**
- Vision, objectives, and evaluation criteria from Step 1.
- Maps and other outputs from Steps 2 and 3.
- Optional: classifications of place intensity (from Step 2) and movement significance (from Step 3).

**Outputs:**
- Map of Movement and Place issues and opportunities
- Agreed set of issues and opportunities to shape the options (the “problem definition”)
- Scenarios
- Optional: maps of street environments (place intensity + movement significance).

**Process:**
Preparing for a workshop or meeting:

**A** Compare current performance with baseline and desired future performance of the built environment:
- Use the performance indicators (selected in Step 1.4) to measure the place’s performance against all existing data (current performance).
- Use data on planning intent (e.g. LEP density maps, common planning assumptions data on population and job growth), typically in 5- to 10-year increments to the planning horizon of the project, to understand how performance will change without any intervention (baseline performance).

**B** Produce a draft issues and opportunities map that shows the areas of confluence and conflict between movement networks and places:
- As a design exercise, combine and overlay the outputs of Steps 2 and 3.
- Identify the issues and opportunities presented by the vision and objectives. Where relevant, identify temporal aspect of issues and opportunities (time of day, events).
- Produce a draft “Movement and Place issues and opportunities map” to summarise and communicate these issues and opportunities in a workshop or meeting.
### 4.2 Classify street environments (optional)

**Process:**

A Before the start of the workshop or meeting, use the Movement and Place classification method (see Section 3.6) to:
- Divide the roads and streets into segments.
- For each segment, classify the current state for movement significance and place intensity.
- If the planning intent includes catalytic change to either the place or movement functions within the study area, classify the future state.
- Produce a map of street environments (of each state) to enable comparison.

At the start of the workshop or meeting:

B Lead a discussion, aiming to achieve a consensus among the participants on classification, informed by the criteria in Section 3.6, plus local knowledge and expertise.
- Review and if necessary refine the map produced in Step 4.2.A (above).
- Create a Movement and Place classification map based on the likely “best fit” for street environments.

C Lead a discussion to explore issues and opportunities in depth, informed by the Movement and Place classification map. (You may need to focus on particular roads and streets.)

### 4.3 Review issues and opportunities, and indicators

**Process:**

During a workshop or meeting:

A Present the draft issues and opportunities to the project stakeholders.

B Lead a discussion, aiming to better understand, expand, and refine these issues and opportunities, including:
- any additional place making opportunities arising from the analysis
- movement’s role in supporting the vision and objectives
- appropriate treatments to mitigate or remove safety risks within the study area.

In large study areas this exercise may be broken down into a general issues and opportunities discussion, and several focus key roads and streets.

C Present a gap analysis including:
- the current, baseline (planned intent), and desired future performance of the study area, as measured by the selected performance indicators, and any further indicators, if appropriate
- the thresholds that have been adopted to achieve the vision and objectives, the source of the relevant target or benchmark, and the implications of achieving the threshold.

D Re-evaluate and confirm the indicators and any thresholds. Identify the interventions that are required to achieve the thresholds identified (in transport terms: “backcasting”).

E Agree on the set of issues and opportunities the intervention will seek to address (the “problem definition”). These may include wider interventions outside the study area, to be explored through engagement with other project teams or agencies.
4.4 Identify scenarios

Based on the information above, and on relevant broader issues, identify scenarios for further investigation to inform the options, based on trends, drivers, and opportunities presented by the plan or project.

Typically scenarios are circumstances external to the plan or project (such as a change in technology or economic conditions) that have potential to impact the plan or project. The scenarios will inform the development of options and can be used to test the robustness of options against a set of possible futures.

Scenarios for larger projects might include:

— changes in mobility preferences (e.g. mode share)
— changes in housing preferences (e.g. smaller houses closer to amenity)
— changes in climate, urban heat, and environmental risks
— demographic changes (e.g. regional or international migration).

4.5 Clarify the problem definition

After the workshop:

A Update the performance indicators and repeat the analysis conducted in Step 4.1A to take into account any issues, opportunities, or particular areas of underperformance identified and agreed in the workshops.

B Update the draft Movement and Place issues and opportunities map into a final map.

C Set out the scenarios that will be used to test the options.

D If a business case is being prepared for the study area or project in question:

— Define the problem by assembling the vision and objectives from Step 1, together with the revised performance indicators, gaps, issues, and opportunities. Articulate the interventions for exploration under each option.

— Map the relationships between the problem, the intervention, and the benefits, and assign (and confirm) owners for those benefits. Define clear indicators for the benefits (to avoid “project drift”) and ensure the benefits are aligned with their owner’s needs. Include the benefits, owners, and indicators in a “benefits realisation plan” that supports the business case.
Step 5 Develop options

This aim of this step is to develop a range of options for achieving the vision and objectives identified in Step 1, taking into account the issues and opportunities identified in Step 4 (together, defined as the “problem”). Solutions may go beyond the study area and include consideration of wider interventions in consultation with other teams and agencies.

 Movement and Place is part of a broader range of considerations

The process described here explains how to incorporate a Movement and Place approach into the development and evaluation of options. Movement and Place is just one of the broader range of considerations that apply to developing and evaluating options – other issues for consideration include common planning assumptions and constraints, demand, cost–benefit analysis, etc.

Note that options are not restricted to capital investment. For example, they could include operational improvements or behaviour change. Best practice business cases consider at least two options (preferred and alternative) in addition to the baseline (minimal intervention) case.

For a full guide to developing options, see Australian Transport Assessment and Planning (ATAP) Guidelines O8 – Real Options Assessment (Transport and Infrastructure Council, draft, January 2020).

Inputs:
— Vision, objectives, and evaluation criteria (from Step 1)
— Issues and opportunities, and scenarios (from Step 4).

Output:
A set of validated design options that respond to the “problem”, including the vision and objectives, issues and opportunities, and the scenarios.

Process:
A Develop or refine a set of design options based on the issues and opportunities. For larger projects or programs you may need to categorise options into broader themes or suboptions.

B For each option, identify a range of discrete solutions that address the issues and opportunities to achieve the vision and objectives.

C Validate the options: estimate the scale of impact of each option, including the impact on stakeholder groups, the scale of cost, and degree of complexity or technical feasibility, and potential risks. Each option should be rigorously explored and refined (“stress tested”) so it has the best possible chance of success – this may involve making low-impact changes, or developing suboptions.

D Measure each option against the indicator targets, and refine as needed.
Step 6 Choose the preferred option

This aim of this step is to identify and agree on a preferred option (or discrete set of options) that best address the issues and opportunities and achieve the vision and objectives.

Inputs:
The options (developed in Step 5), and the rationale for their development.

Outputs:
— Outcome definition report (a template is provided with this guide)
— Implementation plan (which may form part of a larger document, such as a place-based plan).

Process:
A Present the options to stakeholders including:
   — the rationale behind each option, and the scenario where relevant
   — the scale of impact, cost, complexity, and risks associated with each option
   — the extent to which each option addresses the issues and opportunities and achieves the vision and objectives (with reference to the evaluation criteria)
   — the extent to which each option performs against each scenario, identifying which options are more resilient against future potential variables.

B Lead a discussion aiming to identify and agree on a preferred option, or discrete set of options, including why the project team and stakeholders prefer this over other options.
   — For projects at early stages or with a broad scope, it may be more appropriate to identify a range of options, or broad themes among solutions, so further options can be developed in parallel and assessed in more detail (such as during preparation of an environmental impact statement).

C Prepare an implementation plan.
   Where applicable, detail a range of actions that will embed the Movement and Place findings within projects, programs, and operations.
   — If applicable, identify priorities, responsibilities, interrelationships, time frames, and monitoring requirements.

D Communicate the preferred option to the appropriate decision-makers and stakeholders. Include any relevant supporting material (e.g. vision, objectives, evaluation criteria, analysis, scenarios and assumptions, indicators adopted). Targets for future performance, other options considered, risks, sensitivities and trade-offs should be reported on, and an implementation strategy set out.
Reporting and monitoring

The outcomes of Movement and Place plans and projects need to be documented to inform change over time, and monitored by agencies to realise further improvements.

Documenting the Movement and Place process

Document the outcomes of each step of the Movement and Place process, in particular:

— the vision, objectives, and evaluation criteria from Step 1
— maps and analysis from Steps 2 and 3
— a map of issues and opportunities in the study area, from Step 4
— scenarios, assumptions, and options considered, from Step 5
— the preferred option, risks, sensitivities, and trade-offs from Step 6
— the implementation strategy or actions (including owners), from Step 6.

A template has been developed for reporting these outcomes to decision-makers, and practitioners are encouraged to use this.

Documentation of assumptions, trade-offs, and sensitivities is particularly relevant where the Movement and Place process is split between projects or owners (such as when the outcome of a needs assessment is handed over to a strategic business case team). It’s important these underlying factors are well-understood by decision-makers throughout the project life cycle, so they can inform more detailed investigation, changes over time, or changes in approach. Documenting these factors can help to prevent “project drift” or erosion of benefits.

An implementation plan may include:

— strategic actions related to programs, strategies, and plans
— project objectives, options, and geographic boundaries
— a review of business case funding and assurance
— regulatory change and policy guidance
— customer service standards and performance measures
— operational budgets and asset management plans.

Projects are also encouraged to document problems and lessons learnt in relation to the process.

Monitoring and continuous improvement

The outcomes of Movement and Place plans and projects need to be monitored by agencies and reviewed using the performance indicators identified during the plan or project formation. During delivery phases reviews should be annual. During operational phases reviews might be less frequent, e.g. five-yearly.

Reviews should aim to identify:

— the progress of benefits being realised
— further place improvements
— opportunities to increase active transport
— unexpected impacts (both greater and less than anticipated).

Teams should use their best efforts to implement the outcomes including, where relevant, the spatial arrangement proposed through the Movement and Place approach.
SECTION THREE

MOVEMENT AND PLACE CONCEPTS
This section provides a basic understanding of each practitioners’ approach for the benefit of the other practitioners, to build a baseline of knowledge for collaboration. The intent of this section is neither to provide practitioners with instruction in their own field of work, nor to provide a method that replaces the expertise of other practitioners – and should not be taken as a substitute for working effectively together.

### 3.1 Understanding place

**What are places?**

**Place as an area**

A place is a commonly identifiable geographic area or location such as a city, a region, a town, a suburb, neighbourhood, or even smaller parts of urban and rural areas. This geographic context can apply to any scale and every location. Everywhere is a place, and every project needs to consider place.

**Place qualities**

Places can be considered through three lenses:

- **Physical form**
- **Activity**
- **Meaning**

**Physical form**

Physical form is a combination of layout, division, and built form:

- **Layout** refers to the way public buildings, movement networks, infrastructure, and open spaces are placed in relation to each other.
- **Division** refers to the way private land is subdivided or amalgamated and configured to form lots. It also includes the use, mix, and site coverage of private land.
- **Built form** refers to the regulatory and statutory frameworks that describe the three-dimensional articulation of building type, function, and use. These frameworks provide the limits within which architectural design operates. The limits are related to envelope, solar planes, setbacks, height, mass, and interface.

**Activity**

Activity is the type, diversity, or intensity of the ways a place is used or enjoyed. One measure is the number of people using the place. Understanding the capacity for a place to host activity – the expected number of people in that place – is important for understanding place intensity (described in Section 3.6).

**Meaning**

What places share is how they are commonly valued and identified with by local people and communities. This value and identity is typically built over time through the interdependent relationship of people and their environment, experienced as a sense of belonging.

For more information see the advisory note **Place analysis** (GANSW 2019).

**Place and Country**

Connecting with Country is an important aspect of gaining a broader understanding of place. Practitioners can learn from this cultural understanding of the interdependency between people, their environment, and wellbeing, and apply this as the primary frame through which to consider the design of the built environment.

For more information see the advisory note **Collaborating and connecting with Country** (GANSW 2020).
Who represents places?

A wide variety of people come together to make a place including the local community, businesses, residents, interest groups, and other users. Often they are engaged directly, or through their representatives including councils, chambers of commerce, precinct committees, heritage councils, land councils, and so on. Places are planned, built, managed, and coordinated by a variety of organisations working across many disciplines. This means there are often differing objectives, or lack of alignment in understanding place.

A common understanding of a place is needed to help shape its desired future and to enable places to thrive. Projects need to engage early with a range of stakeholders including:

— local communities
— authorities
— local councils
— key local institutions (e.g. schools, hospitals)
— major landholders
— businesses, industries, and special interest groups
— multiple experts.

Important stakeholders for place also include Aboriginal custodians and the Heritage Council as well as those who foster, care for, and manage places, such as town centre managers, and community service providers.

Equally important is the need to consult the right expertise at the right part of the process to deliver the best outcomes.
3.2 Understanding movement

This section of the guide explains what is meant by “movement” – and how we analyse movement – in the context of the Movement and Place Framework.

Three types of movement

Types of movement can be classified into three distinct groups:

— movement through the place
— movement to and from the place
— movement within the place.

Generally, movement through the place does not engage with the place but can impact on it such as an express bus passing by. Movement to and from the place interacts with the place and connects it to other places, and movement within the place is contained within the local catchment of the place. The factors of movement can be further considered by travel mode and time of day.

Each kind of interaction needs to be considered in relation to the importance of that kind of movement in the place, not just in volume – for example a village main street may contain all of the short trips (e.g. walking) within the village, and is therefore a primary street for movement within the village, even if those trips are low in volume. Conversely the amount of through-movement may not recognise the existence or desirability of alternative routes.

For example, a country road passing through three villages may be made up of higher volumes of mobility trips and lower volumes of local-access trips in all three cases, yet the options for improving movement within each village may be quite different depending on its importance to movement through, to and from, or within the place:

<table>
<thead>
<tr>
<th>THROUGH</th>
<th>TO/FROM</th>
<th>WITHIN</th>
<th>OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary route</td>
<td>Primary access point</td>
<td>Typical street</td>
<td>Improve access (e.g. better intersection)</td>
</tr>
<tr>
<td>Secondary route</td>
<td>Primary access point</td>
<td>School access</td>
<td>Local calming (e.g. low speed zone)</td>
</tr>
<tr>
<td>Secondary route</td>
<td>Secondary access point</td>
<td>Village main street</td>
<td>Alternative routes for through-traffic (e.g. diversion)</td>
</tr>
</tbody>
</table>

Figure 11: Three types of movement in relation to a place

Figure 12: Options informed by different profiles of movement to, through, and within three towns
These factors of movement in places can also be further split into their elements – groups of users with similar needs (which may include several modes):

— **public transport (PT)** users – on buses, light rail, both waiting and interchanging between public transport modes, and access points to ferry and rail (which have similar characteristics to interchanges)

— **active transport (AT)** users – split into:
  — people on foot (Walkers) and
  — people on bicycles (Cyclists)

— **general traffic (GT)** – split into:
  — heavy goods vehicles (HGVs, here including hazardous goods vehicles and high-productivity vehicles such as combination truck-and-trailers)
  — light vehicles (LVs including both private and shared passenger vehicles such as taxis (typically grouped as PVs) as well as light goods vehicles for deliveries and servicing such as garbage trucks (typically grouped as LGVs)).

### Aspects of movement relating to both movement and place analyses

The roles of roads and streets include mobility, local access, public space, and land-use interface. Some functions should be considered in both movement and place analyses, including:

— **public transport stops and stations**, which provide both mobility to and from places as well as being elements within a place (gateway to the place and a generator of activity, with its own spatial requirements in that place)

— **parking and loading space** (local access), although the analysis may be supply- or activity-focused for movement (end-of-journey facilities, use rates, kerbside activity) and demand-focused for place (rates of parking per resident or business customer, delivery demand)

— **major cycling and walking routes and facilities**, such as a green infrastructure route or bike hub, which caters for both strategic active transport trips and journey purposes (movement) and local walking or cycling, or for leisure (place).

Rather than adopting the traditional split between mobility and access (which does not fully describe movement to and within places), Figure 13 sets out where elements should be considered in movement and place analyses as a default unless the context suggests otherwise. A “M/P” designation indicates that these should be considered in both analyses.

<table>
<thead>
<tr>
<th>ELEMENT / FUNCTION</th>
<th>LV (PV &amp; LGV)</th>
<th>HGV</th>
<th>PT</th>
<th>C</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility through</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Mobility to and from</td>
<td>M</td>
<td>M</td>
<td>M/P</td>
<td>M/P</td>
<td>M/P</td>
</tr>
<tr>
<td>Mobility within and dwell</td>
<td>M/P</td>
<td>M/P</td>
<td>M/P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Interface with land use</td>
<td>Place (irrespective of mode)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 13: Function and role of the street environment as related to movement and place analyses**
3.3 Understanding the complementary relationship between movement and place

Movement that is planned, designed, delivered, and managed to support and enhance places can make positive contributions to the environmental, social, and economic value of those places. Not considering the side effects of movement can diminish places, for example by severing places, affecting their air quality, or generating noise or traffic speeds and volumes that affect people's comfort and safety.

Places can have a complementary relationship with movement – movement supports better places by providing connectivity and access for people and goods, and transport networks are most rational and productive where they connect and improve the places they serve. Equally land uses create demand for movement, and land use change can either leverage transport investment or drive it. Recognising complementary relationships between movement and place includes ensuring that heavy goods vehicles can still access key destinations such as intermodal hubs via suitably located links such as motorways, and last-mile deliveries and servicing of places can occur at the right time to meet businesses demand while minimising impacts on the users of the place.

Whether the two are complementary depends on the form, activity, and purpose of the movement being undertaken, and in some cases, the time of day of that movement.

Urban areas present a number of road safety challenges due to the increased presence of vulnerable road users and intersections where different users of the street cross paths. Urban areas in NSW account for approximately 88% of NSW's population and 80% of the State's serious casualty crashes, with motorcyclists, pedestrians, and cyclists involved in nearly half of those serious injury crashes. By aligning the movement function of a road or street with the surrounding place context, the risk, incidence, and severity of road crashes can be significantly reduced.

Where there is opportunity to create a new layout (such as a new development or large infill areas), the planning and urban design of the place, and the transport plan to serve the place, should be developed together to achieve this complementary relationship by design, and avoid undesirable movement (such as high volume or high speed) through the places being created.

Making trade-offs

In pursuing balance between movement and place outcomes, practitioners must recognise that, movement and place are not always able to be complementary. Balancing outcomes requires consideration of the place as a whole, and is generally considered spatially, by deciding which streets should accommodate which networks or place functions to get the best overall outcome for the place as a whole (and the wider strategic context). Each objective may have several acceptable outcomes (for example an objective of improving road safety could be achieved by reducing the exposure, or the likelihood, or the severity of a crash) and balancing may mean matching the right outcome to its context to achieve that objective. In order to determine whether a trade-off is desirable in a given circumstance, consider, in the following order:

— Do the objectives favour one outcome over another? Could the less-favoured outcome be done differently e.g. in a different location, or way that would be more aligned to the objectives?

— Which objectives does each outcome align with, and what are the networks and systems underpinning those objectives? Are there alternatives for achieving each objective or is this the only outcome?

— Consider the principles that apply to the street environment in question (in Step 4), or the relative performance against the core indicators (in Steps 5 and 6) to determine which outcome is preferable. In order to do this, options may need to be short-listed and evaluated before they can be eliminated (see Conflict, below).

— Consider the evaluation criteria used to measure the objective – does a particular outcome worsen one indicator in delivering another? Does one outcome improve multiple indicators?
Private vehicles support access to places but can also detract from them due to volume of traffic, severance, and speed.

Walking and cycling are space-efficient modes that are generally complementary to place.

Surface public transport connects people from this place to other places but can detract due to noise and speed.

Figure 14: Complementary movement and place
Benches and shading are complementary to both walking/cycling and place.

High-frequency rail service with minimal surface footprint connects places and minimises impact on place.
Street furniture and lighting contribute to local character.

End-of-trip facilities including parking support businesses.

Figure 15: Complementary movement and place
Medians support informal crossing.

Crossing build-outs for pedestrians provide opportunities for street trees.

The main street provides local services and business within walking distance of trains and buses.
Outcomes that result in no worsening of indicators and an even spread of improvements are generally favoured over outcomes that improve one indicator at the expense of others.

Outcomes that are specific to certain street environments include:

— prioritising place improvements in areas of higher place intensity (beyond arresting the decline of all places and sustaining local communities)
— improving walking connectivity and flow to and from places on strategic walking routes and within places of greater intensity
— improving air quality and reducing noise in locations where people live and congregate including local streets and high-intensity places
— limiting grade separation to high-volume and high-speed roads, or where it fits with the surrounding pedestrian environment (e.g. below-ground metro exits, sloping sites)
— prioritising non-physical interventions such as time-of-day management and speed in locations where movement and place activity both occur on the same plane
— introducing buffers where there are higher speeds or heavy goods vehicles and slower movement such as people walking and cycling. Buffers can also be used to enhance place qualities such as planted verges
— ensuring there is sufficient kerbside and off-street loading to support the servicing, growth, and success of each place, and making this as efficient as possible (consolidation centres, last-mile deliveries by cargo bike)
— dedicating space for cycling in higher movement environments where strong cycle connectivity is desired or exists, and improving shared cycle environments on quieter streets through appropriate speed zoning and design
— prioritising walking on key walking routes within 10 minutes of public spaces
— increasing the tree canopy in Greater Sydney, and maintaining trees on regional main streets and town squares
— focusing technology on efficiency and performance on high-capacity, high-speed roads, and on amenity and access on the local network, particularly delivery access
— repurposing legacy infrastructure, particularly historic bridges, to support place and local access.

See the advisory note Design considerations for street environments (GANSW 2020).

Conflict

Working together requires open, robust discussion of differing opinions. Participants in an engagement process should aim to be clear about their needs, collegiate in their attitude, willing to constructively challenge assumptions without being positional or obstructive, and aim to build on common ground – establishing agreed positions narrowing the field of differences. See Aligning Movement and Place (GANSW 2019).

A good decision-making process is one where:

— everyone has expressed their needs and viewpoints clearly
— subject matter experts have been allowed to disagree.

Where they agree, that information can be used to build a solution on common ground.

For the key stakeholder group, a good process is one where there are:

— no blocks (fundamental disagreements with the core proposal)
— limited stand-asides (neither supporting nor objecting to a proposal)
— limited reservations (qualified support for a proposal)

and where there is general consensus (support for the proposal).

In order to achieve this, participants may flag at various points in the process their disagreement or qualifications in their support, and those issues may need to be worked through. The problem definition after Step 4 should capture any issues and opportunities flagged in this manner. Where it is reasonable to do so, the short-listed options that are validated should likewise include any permutations flagged in this manner, so they can be explored and reported on when arriving at the preferred solution.

Where consensus cannot be reached at the end of a process, the fundamental disagreements should be documented and communicated to decision-makers.
3.4 Understanding how people use roads and streets

In the context of the Movement and Place Framework, “roads and streets” refers to the whole surface transport network. Both the State-owned road network and local council streets are public space used for movement and as dwell space (typically behind the kerb).

![Diagram of street environment]

**How people use roads and streets**

When considering the street environment, we need to consider how all people use that place, including those not engaging with movement.

People use and experience roads and streets in different ways for different purposes. Roads and streets need to serve people of all ages and abilities, who have many different needs. These various users can be broadly classified into two groups:

**People using the street for movement**

This group includes people using transport networks to get somewhere for a variety of purposes, such as commuting to work, school, or university; going shopping; accessing healthcare and other vital services and facilities; visiting friends; and delivering goods. This includes people walking, cycling, using public transport, and using private and commercial vehicles.

Generally, these people seek a transport network that:

- moves people and goods safely, reliably, and efficiently
- connects places and is accessible and sustainable
- supports productivity and growth
- is empowering, providing people with information and travel choices and enabling them to prioritise their needs
- contributes to creating successful places and sustainable communities.
People using the street as a place
People that live, work, and play in an area, for whom the street is their primary point of access, often interact with a street in a way that has no relationship to transport networks. For these people the concept of place extends beyond the dimensions of the road or street and includes public open spaces and other adjacent land uses.

People using the street as a place vary in how and when they move around the place – including whether they need additional assistance wayfinding, travel in different periods, or have special vulnerabilities. They may be residents or regular or occasional visitors (who often move slowly in a place), or business owners and operators, service providers, students, or tourists. Rough sleepers (40% are in regional NSW) also use streets as places; for these people safety and access to outreach services are particular needs.

People can often quickly move from one group to the other, such as residents boarding a bus, or walkers or people on bikes stopping at a shop.

Customers and deliveries can get to me.

I can safely walk around with my family.

The Levee, Maitland Image: GANSW

Figure 17: Different users of the street environment
I can get shade and sit down.

I can relax and shop.

I can work here.

I can get access and park.

I can socialise.
3.5 Evaluating performance

The built environment can be assessed in a number of ways including quantitative and qualitative comparison; gap analysis by reference to benchmarks or standards; needs assessment; an analysis of strengths, weaknesses, opportunities and threats; analysing the capacity and performance of an area; and studying its character.

Using five “built environment themes”

Qualities that contribute to a well-designed built environment can be grouped under five themes. These themes provide a framework for evaluating movement and place performance. Further detailed indicators can be developed under each theme – depending on the availability of data and resourcing available for fieldwork at a street-level scale.

| AMENITY AND USES | Places for people provide a diversity of public and private spaces to accommodate a variety of activities at different times of day and night, as well as essential and community services. Quality public space is a key component. Other components include a mix of land uses that permits daily activities to be accessed on foot (such as primary schools and local shops). |
| ACCESS AND CONNECTION | Well-connected places enable urban mobility through access to opportunity, services, and amenities at local, district, metropolitan, and regional levels. Walkable neighbourhoods, cycle routes, and public transport support equitable and accessible movement around and between places. |
| CHARACTER AND FORM | The identity of a place is perceived through its built form, landscape character, and the contributions of local people over time. Culture and histories, including Aboriginal culture and heritage, shape our everyday environments. The character of each place is different, and an authentic response to that character can contribute to the success of that place. |
| GREEN AND BLUE | Trees, landscapes, and water are critical infrastructure for greening and cooling our urban and regional places in sustainable ways. As a network they can improve people’s comfort and experience of the built environment (e.g. providing shade and connections with nature), and its functional performance (e.g. mitigating flooding), including providing open space for recreation and respite. |
| COMFORT AND SAFETY | Clear air, sun, shade, peaceful parks, and active building frontages contribute to the liveability of places through environmental comfort including feelings of safety. These qualities also indicate local place stewardship and care. Road and street environments can cater for all users, without risk of death or serious injury. |

User outcomes

Under these five themes, ten user outcomes have been identified that reflect what a person in that environment may reasonably expect as an outcome of good performance related to that theme, being:

— **Access and Connection**: mode choice, reliable transport and equity (of access)
— **Amenity and Use**: convenient facilities and local opportunities
— **Green and Blue**: a link to nature
— **Comfort and Safety**: a comfortable environment, that is low risk
— **Character and Form**: a place that is human-scaled, that celebrates its distinct features.

The built environment indicators, measures, and data sources are set out in the Appendices. These can be understood in relation to the five built environment themes above and ten user outcomes as illustrated in Figure 18.
Figure 18: The built environment performance indicators are grouped under five themes, linked to ten user outcomes.

“Core” indicators are shown in bold; the others listed are “supplementary” indicators.
Aiming for improvement

As a minimum all projects should aim to achieve a well-designed built environment by improving on each aspect of the built environment themes (or, as a minimum neither worsening any indicator nor focusing improvements solely on one indicator where more holistic outcomes have been identified).

Projects can aim for improvement by considering:

- **Access and Connection**: does the project increase sustainable mode share, contribute to freight and public transport reliability, and/or provide movement equity?

- **Amenity and Use**: does the area provide for daily needs within walking distance and/or opportunities for local employment and a mix of uses?

- **Green and Blue**: does the area contain green infrastructure, and support the Premier’s Priorities of Greening our city and Greener public spaces?

- **Comfort and Safety**: does the project incorporate safety by design (including taking a Safe System approach) and is the environment comfortable to be in and walk around?

- **Character and Form**: is the area permeable for people walking and on bicycles to move around? Has the character of the place and the needs its communities been recognised?

Why do we evaluate?

These performance indicators can be used to structure the evaluation of existing places. They can also be used to set targets or benchmarks in place-based business cases, compare options for planning and design, or for monitoring performance over time.

The core indicators (in bold, Figure 18) are the minimum data inputs for each relevant theme, contributing to a baseline for analysis once the Movement and Place approach is adopted more widely. More indicators will be included as core indicators over time, as teams become more familiar with the outputs and available data.

Larger scale projects are strongly encouraged to adopt appropriate secondary indicators (not in bold, Figure 18) to build up a more comprehensive picture of each theme. GANSW has tested composite maps for each theme using most of these indicators, and weighting of various measures, to demonstrate that using government data, all indicators can be measured and reported on consistently in a complex fashion.

When are the indicators used in the core process?

These indicators are used in Step 1 to choose the right supplementary indicators for the plan or project. A place that is vulnerable to flooding should choose the indicator “on-site water management” for example, and thresholds should be set according to the needs of the place, such as “zero discharge to X creek”, as well as considering project-specific indicators such as “risk to life” or “ease of evacuation”.

In Step 4, reporting of the existing state defines the areas of underperformance, and reporting against all selected indicators in Steps 5 and 6 shows the relative improvement of each option against the existing state, and each other, so that one of the best performing options from a built environment perspective can be selected (having regard for other validation criteria such as cost-effectiveness, equity, feasibility etc.).

Project-specific indicators

For planning and design, having metrics that indicate whether the vision is likely to be achieved in that place (beyond the general indicators of performance) makes custom indicators more desirable. For example, a vision at planning and design stage to restore a creek system may be best measured through a specific indicator such as “% of creek naturalised” (in addition to a more general measure such as canopy cover) or “average journey time between Ox and Dx” (in relation to a strategic transport corridor and key destinations, such as the Pacific Highway between Sydney and Brisbane).

Other monitoring indicators may be related to budget, such as annual grants from the Regional Visitor Economy Fund. Specific indicators for monitoring are desirable in some cases, for example “annual change in vacancies” in a main street revitalisation program.

These indicators have been mapped to demonstrate how they align with the six transport outcomes for NSW, the seven objectives under Better Placed, the regional indicators for Greater Sydney (The Pulse of Greater Sydney) and Healthy Streets indicators. For more information see the advisory note Built Environment Performance Indicators (GANSW 2020). The indicators incorporate monitoring for the Premier’s Priorities for a Better Environment – Greening our City (tree canopy) and Greener Public Spaces (access to local open space).
3.6 Classifying street environments

**Why and when do we classify roads and streets?**

Classification, as part of the Movement and Place process, involves characterising a given segment of a road or street for a specific project purpose, such as identifying priority areas or priority needs. It should focus on desired outcomes. When applied to existing conditions, the classification of a street is used to understand the gap between an existing state and the desired state. Classification can also guide the “ergonomic” design of specific streets by relating a street to design principles and standards (see for example *Urban Street Design Guide* NACTO 2013) to identify typologies (p159), and the principles (pp 3–33) and design elements (pp 33–72) that apply to those typologies.

**The four street environments**

Classification into four street environments can help to provide a quick understanding of where movement and place interact. Roads and streets are divided into segments and then each segment categorised as one of four different types of street environment.

- **Civic spaces** (was “places for people”) are streets at the heart of our communities and have a significant meaning, activity function, or built environment. They are often in our major centres, our tourist and leisure destinations, and our community hubs. These streets are often pedestrian priority, shared spaces.

- **Local streets** are the majority of streets within our transport networks and often have important local place qualities. Activity levels are less intense, however, these streets can have significant meaning for local people.

- **Main streets** (was “vibrant streets”) have both significant movement functions and place qualities. Balancing the functions of these streets is a common challenge.

- **Main roads** (were “movement corridors”, and “motorways”) are routes central to the efficient movement of people and freight. They include motorways, primary freight corridors, major public transport routes, the principal bicycle network, and key urban pedestrian corridors. Place activity levels are less intense, however, these roads and routes can have significant meaning to local people.

**Figure 19: Place intensity and movement significance help us to classify roads and streets into different types of street environment (Future Transport 2018)**

**Figure 20: Four street environments have been identified for analysing the combinations of movement and place in NSW**
Classification requires breaking roads and streets into segments to understand the variety of roles, uses, and place qualities, and the potential need and priorities for modifications and improvements. Roads and streets may change character for lengths as short as 50 m (a junction and its associated land use).

For corridor planning a segment length of 200 m is recommended.

**Using a 5 x 5 matrix**

Classification using a 5 x 5 matrix can be a helpful tool for comparing the relative significance of movement and place functions where there is more gradation in outcomes, such as at a larger (i.e. metropolitan and regional) scale. Compared to other classification tools and hierarchies, using the 5 x 5 matrix allows for the consideration of place when observing relative movement significance.

As such it provides an overall picture of movement significance and place, based on intensity of use for a single urban area (such as Greater Sydney, or Albury-Wodonga). Classification may not be comparable between different urban areas (such as between Sydney and Albury) as their network characteristics and peak place intensity will be different.

**How do we classify street segments?**

To classify each segment, we need to assess its place intensity and its movement significance.

**Place intensity**

Places where the most human activity occurs, or has the potential to occur, have the highest place intensity. In the past, transport and land-use planning has been based on population catchments and investment decisions to establish a hierarchy of urban “centres” of varying “significance”. This new approach brings together a broader set of inputs, providing a stronger evidence base to understand the movement required to serve different places.

The data used to determine place intensity accounts for the typical activities of people in places (living, working, visiting, moving to/through/within via public and active transport), the physical form and capacity of those places (density, land uses), and places that have common meaning and value (schools, hospitals, community centres, public spaces).

A larger project or study area may encompass zones of greater and lesser intensity, with their own distinct qualities and purposes. Determining intensity of places may need to be built up from individual street blocks. Current intensity can be measured and relativity compared using simple methods such as pedestrian counts, dwell time, and active frontages, although these may not always match the planning intent.

**Assessing place intensity**

The NSW Government has developed a set of measures to describe the activity, form, and meaning that best indicate a strategic desire to, or actual presence of, a place of varying intensity in our cities and towns. A place intensity map is available for Greater Sydney and can be produced with relevant data sets for regional NSW. The advisory note *Classifying Street Environments* (GANSW 2020) provides a full breakdown of how to assign a rating for each measure using the A to E scale. The highest rating factor indicating place intensity can be used to classify the segment.
<table>
<thead>
<tr>
<th>PLACE INTENSITY ASPECT/DESCRIPTION</th>
<th>MEASURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>People – living</td>
<td>Population density (ppl/ha)</td>
</tr>
<tr>
<td>Where do people live? (more/less)</td>
<td>Population projections (ppl/ha)</td>
</tr>
<tr>
<td>People – working</td>
<td>Job density (jobs/ha)</td>
</tr>
<tr>
<td>Where do people work? (more/less)</td>
<td>Job projections (jobs/ha)</td>
</tr>
<tr>
<td>People – visiting</td>
<td>Number of visitors</td>
</tr>
<tr>
<td>People – moving</td>
<td>Public transport (catchments)</td>
</tr>
<tr>
<td>People in areas most likely to use public transport</td>
<td></td>
</tr>
<tr>
<td>Density – existing</td>
<td>Building volume (footprint + height)</td>
</tr>
<tr>
<td>Potential to host activity</td>
<td></td>
</tr>
<tr>
<td>Density – possible</td>
<td>Floor space ratio (max floor area/site)</td>
</tr>
<tr>
<td>Potential to host activity</td>
<td></td>
</tr>
<tr>
<td>Street layout</td>
<td>Intersection density</td>
</tr>
<tr>
<td>Capacity to host walking</td>
<td>Average pedestrian and cycle crossing spacing</td>
</tr>
<tr>
<td>Land use – existing</td>
<td>% of single vs multiple uses by LEP zones</td>
</tr>
<tr>
<td>Where are the most vs the fewest uses?</td>
<td></td>
</tr>
<tr>
<td>Land use – proposed</td>
<td>Business zones</td>
</tr>
<tr>
<td>Where are the highest intensity uses?</td>
<td>(LEP zone areas)</td>
</tr>
<tr>
<td>Common spaces / destinations</td>
<td>Number of shops/other</td>
</tr>
<tr>
<td>Where do people go?</td>
<td></td>
</tr>
<tr>
<td>Places of common value</td>
<td>Heritage places</td>
</tr>
<tr>
<td>Where people go?</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 22: Measures of place intensity**

**Movement significance**

Movement significance refers to the type of movement that occurs within the segment being assessed. This is an important distinction from “volume”, which is only one consideration for understanding movement significance. A trunk public transport route connecting to a strategic or metropolitan centre would be an example of the top of the vertical axis on the matrix. If the street serves people and goods travelling to and from a place it is placed towards the middle of the vertical axis. If a street’s or space’s primary movement is within a place it appears at the bottom of the vertical axis.

**Assessing movement significance**

Movement significance needs to be assessed separately for each transport mode within a segment, and if these are to be grouped into a general “movement” category, the highest rating mode used to indicate the movement significance for that segment. It is preferable that the modes are kept separate throughout the process except when doing a quick sort by street environment. However, another classification method may be applicable if the movement significance of the highest rating mode is substantially greater than the other modes.
<table>
<thead>
<tr>
<th>THROUGH</th>
<th>TO/FROM</th>
<th>WITHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALKING</td>
<td>Large amounts of people walking on the street segment to a destination outside the local area</td>
<td>Presence of destinations along the street segment that are accessed by foot</td>
</tr>
<tr>
<td>CYCLING</td>
<td>On a principal bicycle route in Greater Sydney or regional bicycle route identified in a council bike plan in regional NSW</td>
<td>Centre or place that connects directly to a principal bicycle route (Greater Sydney), regional bicycle route (regional NSW) or school</td>
</tr>
<tr>
<td>PUBLIC TRANSPORT</td>
<td>City shaping, city serving or coach service — High-frequency and direct scheduled service on road segment</td>
<td>Centre serving route — Regular scheduled service with more regular stopping patterns</td>
</tr>
<tr>
<td>FREIGHT</td>
<td>On a designated strategic freight route</td>
<td>Connects to a logistics hub</td>
</tr>
<tr>
<td>PRIVATE VEHICLE</td>
<td>Majority of vehicles travel through this segment without parking or loading</td>
<td>Majority of vehicles have a destination or origin in this segment</td>
</tr>
</tbody>
</table>

**Figure 23: Measures of movement significance**

**Using local knowledge and practitioner best judgement**

These aspects and measures are a baseline for comparison to minimise subjective disagreement and to aid in setting consistent expectations in a data-driven classification exercise. In many cases, such as where classification is being used as a workshop aid, it may be equally possible for practitioners to classify both movement and place using their local knowledge and best judgment.

For example, practitioners working on a regional city may have a good common understanding of the core area of the regional city (place intensity “E”) and be able to work backwards from that to identify the periphery, similar kinds of areas, and areas of less intensity. Likewise the public transport spine may be well-understood (movement significance “1”) and the network as it branches off that spine may be easy to assign at lower levels based on routes and services.

Where the purpose is to identify focus areas only, the whole area or network may not need to be classified, only the areas of greatest or equal movement significance and place intensity (the areas that require focused attention).

For more information see the GANSW advisory note *Classifying street environments* (2020).
APPENDICES
<table>
<thead>
<tr>
<th>USER OUTCOME</th>
<th>INDICATOR</th>
<th>MEASURE</th>
<th>DESIRED OUTCOME</th>
<th>DATA SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access and Connection</td>
<td>Transport choice</td>
<td>Mode share</td>
<td>Sustainable mode share</td>
<td>Positive indicates a shift to sustainable modes</td>
</tr>
<tr>
<td>Transport choice</td>
<td>Cycling attractiveness (access to cycleways)</td>
<td>Score-based system</td>
<td>(access to quality [separated] cycleways)</td>
<td>Positive indicates a greater access to cycleways</td>
</tr>
<tr>
<td>Transport choice</td>
<td>Walking attractiveness (directness)</td>
<td>Score-based system</td>
<td>Positive indicates a more attractive walking environment</td>
<td>Under development</td>
</tr>
<tr>
<td>Transport choice</td>
<td>PT attractiveness (journey time comparability)</td>
<td>Score-based system</td>
<td>(relative speed of PT vs light private vehicle and other factors)</td>
<td>Positive indicates reduction in differential</td>
</tr>
<tr>
<td>Transport reliability</td>
<td>Journey time reliability (freight and PT)</td>
<td>Deviation from average trip time by that mode on select links by time of day</td>
<td>Positive indicates reduction in differential</td>
<td>Under development</td>
</tr>
<tr>
<td>Transport reliability</td>
<td>Public transport frequency</td>
<td>Frequency of scheduled public transport stopping within area</td>
<td>Positive indicates higher frequency</td>
<td>General transit feed specification</td>
</tr>
<tr>
<td>Equity</td>
<td>Equitable access</td>
<td>Equitable access for people with disabilities or reduced mobility (e.g. prams) in comparison to the able or unencumbered</td>
<td>Positive indicates reduced differential to reduce severance and connect communities</td>
<td>Manual assessment</td>
</tr>
<tr>
<td>Equity</td>
<td>Steepness</td>
<td>Streets with accessible slope</td>
<td>Positive indicates increase in access by streets &lt;1:7 slope</td>
<td></td>
</tr>
<tr>
<td>USER OUTCOME</td>
<td>INDICATOR</td>
<td>MEASURE</td>
<td>DESIRED OUTCOME</td>
<td>DATA SOURCE</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>---------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Amenity and Uses</td>
<td>Convenient facilities</td>
<td>Local living</td>
<td>Walkable access to local living needs</td>
<td>Positive indicates increase in access to and/or number of local living land uses</td>
</tr>
<tr>
<td></td>
<td>Convenient facilities</td>
<td>Public space</td>
<td>Access to public space</td>
<td>Positive indicates increase in number of dwellings within 10-minute catchment of public space</td>
</tr>
<tr>
<td></td>
<td>Convenient facilities</td>
<td>Primary schools</td>
<td>Walkable access to primary schools</td>
<td>Positive indicates increase in catchment</td>
</tr>
<tr>
<td></td>
<td>Convenient facilities</td>
<td>End-of-trip facilities (by mode)</td>
<td>Count of parking and loading bays, cycle racks, bus stands, freight distribution / consolidation centres</td>
<td>Provision of desired end of trip facilities and encouragement of sustainable travel modes</td>
</tr>
<tr>
<td></td>
<td>Convenient facilities</td>
<td>Places to stop and rest</td>
<td>Average distance between benches, bus stop seating, low walls</td>
<td>Positive indicates reduction in average distance</td>
</tr>
<tr>
<td>Local opportunities</td>
<td>Population density</td>
<td>People per hectare</td>
<td>Positive indicates higher density</td>
<td>ABS Census (2016)</td>
</tr>
<tr>
<td>Local opportunities</td>
<td>Local jobs</td>
<td>Employment density</td>
<td>Positive indicates higher density</td>
<td>ABS Census journey to work (by destination zone)</td>
</tr>
<tr>
<td>Local opportunities</td>
<td>Mix of uses</td>
<td>Non-residential uses to increase social capital</td>
<td>Positive indicates greater commercial or mixed use</td>
<td>Local environmental plan</td>
</tr>
<tr>
<td>Local opportunities</td>
<td>Housing diversity</td>
<td>Diversity of dwellings by number of bedrooms</td>
<td>Positive indicates higher diversity of dwelling sizes</td>
<td></td>
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<tr>
<td>Local opportunities</td>
<td>Economic development and regeneration</td>
<td>Contribution to NSW economy</td>
<td>Positive indicates greater contribution</td>
<td></td>
</tr>
<tr>
<td>USER OUTCOME</td>
<td>INDICATOR</td>
<td>MEASURE</td>
<td>DESIRED OUTCOME</td>
<td></td>
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<tr>
<td>Comfortable</td>
<td>Urban heat</td>
<td>Urban heat-island effect</td>
<td>Positive indicates reduced / anticipated reduction in urban heat</td>
<td></td>
</tr>
<tr>
<td>Comfortable</td>
<td>Solar access</td>
<td>Winter sun access to public space</td>
<td>Positive indicates increased access / anticipated increase in winter sun access</td>
<td></td>
</tr>
<tr>
<td>Comfortable</td>
<td>Environmental quality</td>
<td>Specifically noise and air pollution</td>
<td>Positive indicates reduced per capita exposure</td>
<td></td>
</tr>
<tr>
<td>Comfortable</td>
<td>Heavy vehicle separation</td>
<td>Degree to which through-freight avoids locations with place</td>
<td>Positive indicates improved environmental quality / reduction in linear metres of conflict</td>
<td></td>
</tr>
<tr>
<td>Low risk</td>
<td>Pedestrian crowding</td>
<td>Footpath crowding</td>
<td>Positive indicates reduced crowding</td>
<td></td>
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<tr>
<td>Low risk</td>
<td>Safe System assessment</td>
<td>An assessment of the streets and roads in the area for exposure, likelihood, and severity of a crash, based on volume of traffic and vulnerable road users, physical geometry of the road, and speed</td>
<td>Positive indicates greater safety</td>
<td></td>
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<tr>
<td>Low risk</td>
<td>Casualty crash rate (by degree, user, and road type)</td>
<td>Degree (fatalities and serious injuries) by road user (driver, pedestrian etc.) and type (local, regional or State road)</td>
<td>Positive indicates reduced number of serious crashes or likelihood of serious crashes due to removal of cause</td>
<td></td>
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<tr>
<td>Low risk</td>
<td>Community safety and security</td>
<td>CPTED assessment</td>
<td>Positive indicates greater perceived safety</td>
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<td>Street lighting, crime rate</td>
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<th>DATA SOURCE</th>
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Local Character and Place Guideline, NSW Department of Planning and Environment (2019)

Mobility-as-a-Service: The value proposition for the public and our urban systems, MaRS & Arup (2018)
<p>| Glossary |
|-----------------|--------------------------------------------------------------------------------------------------|
| <strong>A</strong>            | <strong>Access</strong> - The ability to reach desired goods, services, activities, and destinations – and in the case of movement, reach a given destination (trip end), and the ability to make short trips within a location – as opposed to journeys passing through a location. Access considers how people move within a place, including local walking and cycling, as well as how they get to and from the place. It also includes considering the provision of end-of-trip facilities like cycle racks, parking, and public transport routes and stops. |
| <strong>Access prioritisation plan</strong> | A strategic plan, using a Movement and Place approach, that identifies how to prioritise access to interchanges, corridors, and key places. Considerations include the need for access to be prioritised by providing high-efficiency passenger and freight services, as well as access for shared, connected, automated, and electric vehicles. |
| <strong>Accessibility (equal access)</strong> | The ability for everyone, regardless of disability, personal circumstances, or where they live, to use and benefit from the transport network. This is achieved by designing for people with mobility impairment or vulnerability. The Commonwealth Disability Discrimination Act 1992 (DDA Act) sets out guidelines on equal access and opportunity; “DDA compliant” means something is accessible. (The NSW Anti-Discrimination Act 1977 is similar to the DDA.) |
| <strong>Accessibility (connectivity)</strong> | In transport planning, a measure of the ease of reaching (and interacting with) destinations and activities distributed in space. To avoid confusion with equal access, “connectivity” or “mobility” is often used. |
| <strong>Active transport</strong> | Transport that is human-powered, such as walking or cycling. |
| <strong>Active transport sharing scheme</strong> | A sharing scheme designed to incentivise the update of an assisted mobility device (such as a bicycle, scooter, or electric bike) – typically supporting a policy and regulatory framework to increase use of those modes. |
| <strong>Automation</strong> | Use of control systems, such as computers, robots, or artificial intelligence, to undertake processes previously done by humans. Transport technology may be fully or partially automated, with the latter involving some form of human input to manage the technology. |
| <strong>B</strong>            | <strong>Built environment</strong> - Comprises the extent of our human-made environment, as distinguished from the natural environment. It includes all aspects of our surroundings made by people that provide the place for human activity. The built environment can be understood to include cities and towns, neighbourhoods, parks, roads, buildings, infrastructure, and utilities like water and electricity. |
| <strong>C</strong>            | <strong>Cars-as-guests</strong> - Describes a street environment where driving is permitted but given a lower priority than other modes, particularly walking and cycling. This is usually achieved using a combination of speed, signage, and surface treatments. |
| <strong>City / Town Planning</strong> | For the purposes of this guide refers to strategic planning of land (including layout, use, and density) by local councils and the State government that primarily resides in local environmental plans, development control plans, local strategic planning statements and so on. |
| <strong>Complete Streets</strong> | A transportation policy and design approach (originating in the United States) that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel, and to provide access for users of all ages and abilities regardless of their mode of transportation. Complete Streets allow for safe travel by those walking, cycling, driving vehicles, riding public transport, or delivering goods. Complete Streets emphasise the importance of safe access for all users, not just vehicles. |
| <strong>Congestion</strong> | For roads and streets, congestion occurs when demand for road space approaches road capacity. It can be recurrent (predictable, for example due to more people driving in peak hours), or non-recurrent (due to crashes or bad weather). In transport planning, congestion is generally identified as a problem (poor level of service), but can also be neutral (slow movement in shared street environments) and even an operational tool (to discourage further car use, encourage compact development) – in which case the terms “bad” and “good” congestion are sometimes used. |
| <strong>Country</strong> | Relates not only to the nation or cultural groups Aboriginal peoples belong to, but also the lands which they yearn for, find healing from, and will return to. It is their place of origin in cultural, spiritual, and literal terms, and includes not only the land but the waters and sky. Country incorporates both the tangible and intangible, knowledges and cultural practices, belonging and identity, wellbeing, and relationships. |
| <strong>Creating value</strong> | Conceiving and designing in new opportunities for a building, place, or space to increase social, economic, or environmental benefits to the community. |
| <strong>F</strong> | The redesign of roads and streets in a neighbourhood or precinct to discourage through-trips by vehicles, while permitting walking and cycling, such as street closures and one-way sections that permit cyclists and walkers but not vehicles. A Sydney example is Turner Street, Redfern. |
| <strong>G</strong> | The network of green spaces (including “blue” water systems) that deliver multiple environmental, economic, and social values and benefits to urban communities. This network includes parks and reserves, backyards and gardens, waterways and wetlands, drainage corridors, streets and transport corridors, pathways and greenways, squares and plazas, roof gardens and “living” walls, sports fields, and cemeteries. For communication purposes, this is referred to in the built environment themes as “green and blue”. |
| <strong>H</strong> | A transportation policy and design approach originating in London, United Kingdom, that aims to improve the public health of citizens through the planning and design of streets to prioritise walking, cycling, and public transport (and to reduce the dominance of cars). The policy uses 10 indicators: pedestrians from all walks of life; easy to cross; shade and shelter; places to stop and rest; not too noisy; people choose to walk, cycle and use public transport; people feel safe; things to see and do; people feel relaxed; clean air. Streets can be audited against these indicators using a Healthy Street Check. The Healthy Streets approach and framework underpins the Mayor’s Transport Strategy (Greater London Authority 2018). |
| <strong>I</strong> | An unintended negative consequence of improvements to movement capacity to reduce congestion, where new trips are made as a result of freed-up capacity, that would otherwise be made by more efficient modes or not at all. This can be expressed as “traffic expands to meet the available road space” (the “Lewis-Mogridge position”). Three main causes have been identified – traffic rerouting, traffic retiming, and shift from public transport to cars. Induced demand can also come from other sources, such as expanding the catchment within 35 minutes of a destination (based on an accepted “budget” for commuting of 70 minutes a day, referred to as “Marchetti’s constant”). |
| <strong>Interchange</strong>&lt;br&gt;(verb) | The process of moving from one public transport vehicle to another, such as bus to bus, or rail to bus. Walking to a destination or changing from a public to a personal mode (say, to cycling or a private car) are not generally considered “interchange”. Describing the quality of interchange relates to the user experience of moving between those vehicles (for example, whether the route between the two vehicles or stops is direct, seamless, level, within line of sight and within 100 m), as opposed to, say, the physical condition of the relevant stops. |
| <strong>Interchange</strong>&lt;br&gt;(noun) | In public transport, the physical space where interchange between many vehicles or modes occurs, or where there is a large number of trip-ends, such as Sydney Central, or Chatswood Interchange. The plural “interchanges”, or “interchange facility”, is often used to distinguish from the process of interchange. Describing the quality of an interchange facility includes both user experience and physical qualities of the building, and may include other criteria such as value for money, or asset life cycle. While a transport interchange may be a facility, the area of interchange often extends beyond the asset (e.g. to include Eddy Avenue and Elizabeth Street in the case of Sydney Central, and Victoria Avenue in Chatswood). An interchange may also include public space where no asset is located. A road interchange refers to a connection between two roads that allows continuous flow of traffic, generally provided between motorways via ramps and over- or underpasses. |
| L | Local access | Generally the start or end of a journey, or series of short trips within a place, often on foot. Examples of local access include walking or driving to a train station as part of a journey to work by train, or a last-mile delivery to a premises. |
| Local living needs | For the purposes of this guide this refers to childcare centres, community facilities, medical centres, post offices, preschools, and grocery stores/shopping centres. |
| M | Mobility | Movement of people and goods from place to place – used to refer to connectivity to destinations and activities (in lieu of “accessibility”). This is usually determined by the main mode (or modes) of transport and their catchments – e.g. a measure of mobility from a suburb to a centre may be the frequency and reliability of a given bus service passing through the suburb and centre. Mobility does not generally take into account local access. |
| Movement | Movement of people and goods by any mode whether on foot, pram, wheelchair, bicycle, car, truck, bus, tram, or train – considering both mobility and local access. The total movement in a place is made up of trips through that place, to and from that place, and within that place. Movement generally occurs along dedicated “ways”, such as roads, rail corridors, or footpaths. Movement facilitates the transport of goods, services, and people between urban settlements. |
| Movement significance | Movement significance refers to the relative level of importance of the movement function. This is an important distinction from “volume”, which is only one consideration for understanding movement significance. Understanding movement significance requires considering both the place context and network context. |
| O | Options | Solutions / interventions – See the ATAP Guidelines O8 – Real Options Assessment (Transport and Infrastructure Council, draft, January 2020) |
| P | Parklet | A small public space created out of a temporary kerb buildout, typically replacing a car parking space, in order to facilitate the place functions of a street. Examples of parklets are found in Spring Street, Bondi Junction, and Curlewis Street, Bondi Beach. |
| Public space | Public space includes public land and publicly accessible spaces, buildings, and facilities. It consists of many elements, including spaces, connections, and edges. It includes public open spaces like streets, squares, and parks, and public facilities like transport stops, sports facilities, libraries, community centres, galleries, museums, hospitals, and places of worship. |
| Place | An identifiable geographic area or location, which is a social and physical concept – a physical setting, point, or area in space conceived and designated by people and communities. In relation to “successful places”, the quality of the built environment of a geographic spatial area, and its contribution to how people can use that area. |
| Place making | A multifaceted approach to the planning, design, and management of public spaces. Successful place making is measured in terms of “authenticity” of the response – an understanding of the local community and the creation, curation, or maintenance of public spaces that promote activity to support that community, such as their health and wellbeing, social interaction, and economic vibrancy. Place making can involve physical form (design, property development), but centres on activity (governance, curation, management and maintenance, activation and programming), to enhance meaning (common value, social engagement). |
| Place-based | A plan (or approach) for a specific spatial area and a plan to increase certain qualities of place through working together. Place-based planning involves a holistic understanding of context and the people who populate places to support the long-term needs of the wider community. It acknowledges a place's local knowledge, its unique history, culture, environment, and economy. |</p>
<table>
<thead>
<tr>
<th>Place qualities</th>
<th>The physical form, activities, and meanings associated with an identifiable place.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precinct</td>
<td>A designated area, within real or perceived boundaries, of a specific building, space, or place. A precinct can be of various scales and often relates to a study area of a particular location.</td>
</tr>
<tr>
<td>Problem definition</td>
<td>Takes into account both issues and opportunities, as they relate to the vision and objective and any identified gaps in performance.</td>
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| Public space   | The collective, communal areas, with access for all people. These are public gathering spaces such as parks, connecting spaces such as streets and includes the space of movement, recreation, gathering, events, contemplation and relaxation. Public space is made of:  
  — **public domain**: land owned and controlled by the local, State, or Federal government  
  — **public realm**: any publicly owned streets, pathways, parks, open space, and any public or civic buildings. |
| Public urban facilities | Local community facilities including libraries, local council chambers, museums, swimming pools, and may include large transport stations and interchanges. |
| Q Environmental quality | In this context primarily refers to air quality, noise, and particulates which for roads and streets generally has an inverse correlation to volume of traffic. |
| R Roads and streets | The whole surface transport network. |
| S Safe System | An approach that acknowledges that road users make mistakes and advocates designing the street environment to not result in death or serious injury when users make mistakes. Street design, speed, and vehicle design all contribute to avoiding a crash or reducing its impact. |
| Scenarios | External factors influencing future outcomes or informing sensitivities. Refer to [ATAP Guideline O8 – Real Options Assessment](#). |
| Street users | All users of a road or street, from property line to property line. |
| T Transport network | The network of infrastructure and services that support movement of people and goods. |
| Tree bank | A plant nursery set up for a specific project or program. Tree banks are generally adjacent to, or with similar site conditions to, the project (such as on a vacant lot or within a corridor setback). The purpose of the plant nursery is to allow the maturation and acclimatisation of tree and plant species during early stages of a project, prior to planting, to achieve greater canopy cover and survival rates at project completion. |
| Trip chain | A preferred series of journeys that are made in sequence, e.g. accompanying a child to school before continuing to work, or visiting shops before returning home. The journey purposes and modes may be different for each journey in a trip chain. Consideration of likely trip chains helps identify opportunities for better integration of movement and place – for example locating bus stops close to primary schools can support adults making a journey to work by public transport after dropping off children on foot. |
About GANSW and TfNSW

About GANSW
GANSW provides strategic design leadership in architecture, urban design, and landscape architecture, supporting the NSW Government in delivering quality, managing risk, and fostering innovation to maximise public value in the built environment.

Through a strategic advisory and integrated approach, GANSW advocates for shared accountability to foster a well-designed built environment.

About TfNSW
TfNSW leads the development of a safe, efficient, integrated transport system that keeps people and goods moving, connects communities, and shapes the future of our cities, centres, and regions.

TfNSW is responsible for strategy, planning, policy, regulation, funding allocation, service delivery, and operational functions for all modes of transport in NSW including road, rail, ferry, light rail, point-to-point transport, regional air, cycling, and walking.
The Practitioner’s Guide to Movement and Place has been produced as a collaboration between Government Architect NSW (GANSW) and Transport for NSW (TfNSW).

This document explains why and how we need to collaborate on strategies, plans, and projects, across all stages of design and delivery of our street environment, major projects and the places they serve to achieve a better built environment.