Street Planning and Design Manual

‘The most comprehensive contemporary manual for the planning and design of streets in Australia’

Purpose:

(1) Provide planning and design practitioners (urban planners, civil engineers and civil design technicians) with contemporary guidelines for use in the planning and design of streets and street networks within various land-use precinct types i.e. a code of practice.

(2) Formatted as a development code or planning scheme policy, capable of being adopted in local government planning schemes and other planning frameworks.
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1.1 Background

The Institute of Public Works Engineering Australasia, Queensland (IPWEAQ) is the peak body representing those actively involved in the delivery of public works and services in Queensland. IPWEAQ produces best practice methods, manuals, templates, drawings and procedures to help improve industry standards and reduce duplication and inconsistencies across the sector including ADAC (Asset Design as Constructed), Standard Drawings, Lower Order Road Design Guidelines and Complete Streets.

IPWEAQ takes pride in the process it utilises to develop and maintain our peer reviewed Standards, publications and technical guides. Importantly, we involve industry stakeholders from across the state (and nationally where required) to ensure our manuals, Standard Drawings and guides address the needs of both regional and metropolitan communities across Queensland.

In 1993, IPWEAQ launched Queensland Streets, a design guideline for subdivisional street works. This document served the development industry well for almost 15 years and was considered the most contemporary street works design guideline available at the time.

However, public policy and debate moved rapidly towards ecological sustainability and community building giving rise to a changing environment within the urban development sector. Having regard to this and the State Government’s reform agenda for planning and development outlined in ‘Planning for a Prosperous Queensland’, IPWEAQ launched a comprehensive review of Queensland Streets involving practitioners across Queensland to ensure the revised guide incorporated current Australian and international practices.

Complete Streets was launched in 2010 offering contemporary and innovative urban street design guidelines for cost effective and sustainable urban development in Queensland. It is still referred to in many council planning schemes assisting engineers, land use planners and urban designers to plan quality liveable, functional and safe urban neighbourhoods.

In 2016, IPWEAQ undertook two surveys of its membership (professionals actively involved in the delivery of public works and services) and key stakeholders about the developing needs in our neighbourhoods, and ongoing complaints from developers who must deal with a range of different guidelines across councils. It also became apparent that in the absence of an industry Standard, councils would develop their own individual guidelines which would create further issues for developers and communities.

This led to a comprehensive Discussion Paper from John Derbyshire, FIPWEAQ and the formation of a technical steering committee of recognised leaders in urban design and planning. The Steering Committee has considered the issues to be resolved to future-proof our neighbourhoods and urban precincts and determined that the planning of street networks should be inextricably linked with the land-use planning of the precincts that they serve. Accordingly, the overarching and underlying themes for the manual will be the inter-relationship between the street and adjacent land-uses. The proposed manual will emphasise liveability and quality public realms in the development of urban precincts and can be applied to greenfield and brownfield precincts, as well as individual street development and redevelopment.
The proposed Street Planning and Design Manual will be recognised as the most comprehensive contemporary manual for the planning and design of streets in Australia.

1.2 Scope
The manual will provide contemporary good practice guidelines and codes of practice for the planning and design of streets and street networks for the following precinct types:

1. Transit-oriented Activity Centres
2. Non-transit-oriented Commercial Centres (such as District Centres)
3. Main Streets
4. Multi-use Precincts
5. Business Parks
6. Industrial Precincts
7. Rural Villages
8. Lower-density Residential Neighbourhoods
9. Rural Residential Neighbourhoods
10. Lower-density Private Residential Developments (where the internal roads are common property).

It is intended that residential precincts Nos. 8, 9 and 10 apply to neighbourhoods that are predominately residential in nature, but may also have other land-uses within the precinct such as local shops, community facilities and schools that specifically serve that neighbourhood. The buildings will generally be of low-rise construction. Residential precincts having medium-rise and high-rise construction will fall into the multi-use precinct category.

There will be separate chapters for the planning of each precinct type. Some material will be common across some precincts. Although the document may be somewhat repetitive in this regard, separate chapters for each precinct type will ensure the manual is user-friendly for practitioners.

The detailed-design aspects of street elements will generally not have to be separated into precinct type. The design of street elements will be included in a separate part of the manual.

Appendices to the manual will provide additional commentary and explanatory material not needed in the main document but of use to practitioners as supplementary guideline material. The appendices will also include typical functional layouts and cross-sections, together with suggested circumstances appropriate for their use.

It is of paramount importance that, as far as practical, that the manual be evidence-based and be supported by sound research.

1.3 Planning Stage Chapters
Separate planning principles and objectives will be defined for each of the precinct types. Some will be common across most or all precincts and some will be specific for a precinct type.

Some principles and objectives may require additional explanation by way of further commentary. Less specific commentary, if desired for inclusion as guideline material, would be included in the Appendices.

Each precinct type in the manual will then contain tables of assessment, being the performance outcomes and associated acceptable solutions, for the planning of the street network within the
precinct and the functional layout (including typical cross section) of individual streets within the precinct.

For the individual streets, the performance outcomes and acceptable solutions would also be based on the roles and functions appropriate for that street.

In the determination of the strategic role of the street within a wider street network hierarchy, the Link and Place matrix approach (now used in the United Kingdom and South Australia) should be investigated for its appropriateness. In this regard, consideration should be given to expanding the matrix at the neighbourhood and local levels.

After determining the strategic role of the street, the functions that the street will perform within that strategic role should be identified. The relative importance of a function for a street will depend, not only on its strategic role but also, on its specific street environment.

It is critical that the strategic intent of the precinct and the roles and functions of the streets within the precinct drive the decisions on the appropriate street network for that precinct.

Some roles and functions will have more importance than others for various streets within the precinct. The challenge for the professionals involved in that exercise is to find the appropriate balance with potentially competing objectives and achieve an outcome that satisfies the strategic intent without inappropriately compromising specific needs. The manual will provide guidance in processes to achieve satisfactory outcomes in this respect.

The appropriate street network should not be decided upon until that process is undertaken. The manual should therefore require that, during the planning phase, all the intended the roles and functions of each street within the precinct to be defined prior to determining the appropriate street network, the functional layouts and the typical cross-sections of the streets.

Street functions may include:

- Pedestrian traffic, including people with a disability;
- Non-motorised vehicular traffic (bicycles and scooters);
- Mobility scooters and segways;
- Motorised vehicular traffic;
- Public transport;
- Vehicular parking;
- Vehicular loading spaces;
- Refuse Collection;
- Commercial interaction;
- Pedestrian access to premises;
- Vehicular access to premises;
- Street dining;
- Community interaction;
- Seating;
- Exercise activities;
- Street entertainment;
- Play;
- Overland stormwater conveyance (the major drainage system);
- Stormwater capture and conveyance (the minor drainage system);
- Stormwater quality treatment;
- Lighting;
- Utility services (each type to be considered separately);
- Awnings/protection for pedestrians from the elements;
- Public transport shelters;
- Micro-climate mitigation measures;
- Streetscape treatment;
- Trees;
- Other planting;
- Hard landscaping;
- Street art;
- Signage; and
- Other street furniture (serving the above functions).

Sustainable development and inter-generational equity requires making provision for future generations in a way that the urban environment and its associated infrastructure readily responds to the changing needs of the future. Land-use, place utilisation and transport infrastructure must be able to change in response to changing circumstances, or organically evolve, without being constrained by earlier decisions. Some future changes are unpredictable, and this also needs to be taken into consideration in the planning process.

Flexibility for future needs should be part of the planning and design processes, particularly at the stage when the street roles and functions are defined. The manual will require the planning process addresses the likelihood of changing needs in the future and will provide guidance on how to achieve this.

### 1.4 Detailed Design Stage Chapters

For each street function and each street element, design principles and objectives should be defined.

Some principles and objectives may require additional explanation by way of further commentary. Less specific commentary, if desired for inclusion as guideline material, would be included in the Appendices.

These will then be codified into tables of assessment, containing performance outcomes and acceptable solutions.

The geometric requirements for the relevant functions and elements will be included under those functions. Where needed to be included for ease of use by practitioners, these provisions will be included in this part of the manual. Otherwise, they will be cross-referenced to other relevant standards and guidelines.

Optimum whole-of-life outcomes should be an important design objective. It is a reality that public authorities having limited funds are invariably responsible for the operation and maintenance of streets and their infrastructure. This must be a prime consideration in the design process.

Preserving the quality of the public realm over time is very dependent on the maintainability of that area and the durability of its infrastructure. Too often, quality public places quickly degrade through insufficient attention being given at the design stage to durability and maintainability. The manual will emphasise this aspect and provide appropriate guidance to these aspects in the design of every street element covered in the manual.
1.5 Appendices

The appendices will provide additional commentary and explanatory material not needed in the main document but of use to practitioners as supplementary guideline material.

It is intended that, as far as practical, that the manual be evidence-based and be supported by sound scientific principles. The basis for adoption of standards and guidelines in the manual will be included in the commentary.

The manual will be supplemented by examples of typical cross sections, together with suggested circumstances appropriate for their use. The manual will also be supplemented by examples of typical functional layouts, together with suggested circumstances appropriate for their use. These typical cross-sections and functional layouts will be particularly helpful for the planning of mixed-use streets, streets in town centres, streets in urban villages and main streets. Being non-mandatory guideline material, they will be included as an appendix.

1.6 Contents

A likely format for the manual’s contents is outlined below. The size of the document may require breaking the hard-copy into separate volumes.

Part A – Introduction

1) Purpose
2) Relationship to other manuals and guidelines
3) Strategic context for street planning and design
4) The planning and design process

Part B – Planning Phase

Separate chapters for:

1. Transit-oriented Activity Centres
2. Non-transit-oriented Commercial Centres
3. Main Streets
4. Multi-use Precincts
5. Business Parks
6. Industrial Precincts
7. Rural Villages
8. Lower-density Residential Neighbourhoods
9. Rural Residential Neighbourhoods
10. Lower-density Private Residential Developments.

For each chapter: Principles, Objectives, Commentary (if needed), Strategic Roles, Functions, Tables of Assessment - Performance Outcomes and Acceptable Solutions.

Part C – Detailed Design Phase

Separate chapters for:

a) Each street function; and
b) Each street element.
For each chapter: Principles, Objectives, Commentary (if needed), Tables of Assessment - Performance Outcomes and Acceptable Solutions.

Part D – Supplementary Information

- References
- Bibliography
- Appendices:
  - Commentaries
  - Typical Cross-section Examples
  - Functional Layout Examples.

1.7 Funding
The funding required to deliver this project is expected to be in the vicinity of $1.5 million to $2 million.

Estimated date of delivery is March 2019.

1.8 Steering Committee
Our thanks to the expertise, knowledge and skills of our steering committee:

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<tr>
<th>Name</th>
<th>Position/Role</th>
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<tbody>
<tr>
<td>Ged Brennan (Chair)</td>
<td>Immediate Past President, IPWEAQ</td>
</tr>
<tr>
<td>Andrew Ryan (Deputy Chair)</td>
<td>Principal, Sabre Management Solutions</td>
</tr>
<tr>
<td>John Derbyshire</td>
<td>Retired Local Government and Development Engineer</td>
</tr>
<tr>
<td>Steve Conner</td>
<td>Acting Deputy Director-General, DILGP</td>
</tr>
<tr>
<td>Peter Smith</td>
<td>Executive Director, Planning Services, DILGP</td>
</tr>
<tr>
<td>Mark Wyer</td>
<td>Senior Engineer, Calibre Consulting</td>
</tr>
<tr>
<td>Syd Jerram</td>
<td>Manager of Integrated Transport and Design, Moreton Bay</td>
</tr>
<tr>
<td>Stuart Doyle</td>
<td>Director and Civil Engineer, RMA Engineers</td>
</tr>
<tr>
<td>Craig Young</td>
<td>Manager Civil Asset Management, Sunshine Coast Regional Council</td>
</tr>
<tr>
<td>Greg Penhalagon</td>
<td>Local Government and Consultant Civil Engineer, GHD</td>
</tr>
<tr>
<td>Tony McDonald</td>
<td>Senior Project Manager, Harrison Infrastructure Group</td>
</tr>
<tr>
<td>Brad Carey</td>
<td>Coordinator of Development Assessment, Sunshine Coast Regional</td>
</tr>
<tr>
<td>Peter Richards</td>
<td>Director, Deicke Richards (design practice)</td>
</tr>
<tr>
<td>Leigh Cunningham</td>
<td>CEO, IPWEAQ</td>
</tr>
<tr>
<td>Ross Guppy</td>
<td>Director, Technical Products, IPWEAQ</td>
</tr>
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A special acknowledgment and thanks to John Derbyshire for preparing the Complete Streets Discussion Paper and the project scope for the Street Planning and Design Manual.