GOVERNMENT OF WESTERN AUSTRALIA

Department of **Planning, Lands and Heritage**

Western Australian Planning Commission

State Planning Policy 7.2

Precinct Design Guidelines

December 2020

The Department of Planning, Lands and Heritage acknowledges the traditional owners and custodians of this land. We pay our respect to Elders past and present, their descendants who are with us today, and those who will follow in their footsteps.

Disclaimer

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State Planning Policy 7.2

Precinct Design Guidelines

December 2020

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INTRODUCTION

1.0 INTRODUCTION

1.1 THE PURPOSE OF THE GUIDELINES

The State Planning Policy 7.2 Precinct Design Guidelines (the Guidelines) provide supporting information for communities, decision-making authorities, landowners, proponents, referral agencies and practitioners to implement State Planning Policy 7.2 Precinct Design (SPP 7.2). Specifically, they assist in:

- appropriate land use planning and design outcomes in relation to precincts across the State
- ensuring that appropriate standards of design are met in the implementation of land use and development within precincts
- outlining a process for the preparation of precinct structure plans and local development plans in a precinct context (precinct plans).

The Guidelines should be read in conjunction with SPP 7.2 Precinct Design and the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations).

The Guidelines have been developed to:

- guide planners, urban designers, architects, landscape architects, builders and other professionals when planning for and designing precincts, and preparing a precinct plan for approval
- assist planning and design professionals in local and State government with strategic planning and in the preparation, assessment and review of precinct plans
- inform the community on the principles of good design practice for precincts and how they can contribute to the process.

The Guidelines, along with State Planning Policy 7.0 *Design of the Built Environment* (WAPC, 2019) (SPP 7.0), draft State Planning Policy 4.2 Activity Centres (WAPC, 2020) (SPP 4.2), and the local planning framework, are the predominant documents relating to precinct design for use by decision-making authorities and referral agencies during the consideration of strategic and statutory planning proposals, subdivisions and development applications.

1.2 THE APPROACH OF THE GUIDELINES

The Guidelines set out a process to prepare a precinct plan. A performance-based approach is applied through a set of interrelated design elements to enable precinct-specific design outcomes to be achieved. This reflects that every precinct is different and allows designs to be tailored to the specific needs and characteristics of each precinct.


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1.3 PRECINCTS IN THE CONTEXT OF SPP 7.0 DESIGN OF THE BUILT ENVIRONMENT

Meeting the objectives of SPP 7.2 shall satisfy the Objectives and Design Principles of SPP 7.0 being:

Objectives:

1. A consistent framework to define the desired design quality outcomes from the planning and design of built environment projects across the State.
2. A coordinated strategy of design quality mechanisms to achieve design outcomes that meet government and community expectations, including:
   - design principles – performance based approach to policy
   - design review – skilled evaluation expertise
   - design skills – skilled design expertise
3. Timely and efficient review of planning and development proposals against the Design Principles.

Design Principles:

1. **Context and character** Good design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place.
2. **Landscape quality** Good design recognises that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.
3. **Built form and scale** Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.
4. **Functionality and build quality** Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.
5. **Sustainability** Good design optimises the sustainability of the built environment, delivering positive environmental, social and economic outcomes.
6. **Amenity** Good design provides successful places that offer a variety of uses and activities while optimising internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.
7. **Legibility** Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.
8. **Safety** Good design optimises safety and security, minimising the risk of personal harm and supporting safe behaviour and use.
9. **Community** Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.
10. **Aesthetics** Good design is the product of a skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.

SPP 7.2 Policy Outcomes in Table 1 represent how the Objectives and Design Principles of SPP 7.0 relate specifically to a precinct context. These outcomes have been captured and expressed in the Design Elements, Objectives and Considerations in Part 3. Table 1 indicates where key linkages generally apply (dark shading), though linkages may still apply beyond those indicated, based upon the individual nature of each precinct proposal.

Refer to SPP 7.0 for the full details of the Design Principles.

Table 1. SPP 7.2 Policy Outcomes relate to the Design Elements and SPP 7.0 Design Principles

SPP 7.0 Design Principles	Design Elements						SPP 7.2 Policy Outcomes
	1. Urban Ecology	2. Urban Structure	3. Public Realm	4. Movement	5. Land Use	6. Built Form	
Context and character							The precinct design responds to and enhances the distinctive characteristics of a local area, contributing to a sense of place. New development is integrated into its setting and is shown to respond positively to the intended future character of an area.
Landscape quality							Development within precincts integrates landscape design that enhances sustainability outcomes and contributes to community wellbeing. The local environment is enhanced through the: – protection of water and soil resources – retention and/or enhancement of the green network – protection and/or restoration of fauna habitat, where appropriate – consideration of microclimate and urban heat island impacts.
Built form and scale							Built form height and massing (bulk and scale) across the precinct is responsive to existing built form, topography, key views and landmarks, and the intended future character of the area. Buildings are suited to their purpose, contribute positively to the character of the public realm, and provide good amenity at ground level.
Functionality and build quality							The precinct design facilitates development that meets the needs and expectations of the community and provides for change over time. Required services infrastructure is integrated in a manner that mitigates amenity impacts. Development considers the intended full lifecycle and is robust, resilient to wear and easy to maintain over time.
Sustainability							Planning and development of precincts delivers a sustainable built environment through: – passive environmental design measures – water sensitive urban design – enhancement of the green network – harnessing opportunities for renewable energy sources and precinct-wide energy savings – adaptive reuse of existing structures where feasible – promotion of active and public transport modes.
Amenity							The precinct design provides comfortable public spaces that encourage physical activity, enable a range of uses and are accessible to all.
Legibility							The precinct design provides for places that are easy to navigate, with clear connections, good lines of sight to key locations and a logical, intuitive layout.
Safety							Planning and development optimises safety and security within precincts by: – maximising opportunities for passive surveillance – integrating safety requirements in manner that does not compromise intended uses – following Crime Prevention through Environmental Design (CPTED) design principles.
Community							The precinct design provides for development that responds to local community needs and the wider social context by delivering an appropriate mix of land uses, dwelling types and public spaces.
Aesthetics							The precinct is attractive and inviting, with a coherent identity and cultural relevance. The scale, arrangement, articulation and material quality of buildings and spaces together create a high level of amenity.

1.4 APPLICATION OF THE GUIDELINES

SPP 7.2 and the Guidelines apply to precincts throughout Western Australia and guide the preparation, assessment and implementation of precinct structure plans, local development plans; and subdivision and development applications within precincts.

The way precinct design interrelates with the wider planning framework is illustrated in Figures 1 and 2. Where a precinct plan is proposed for an activity centre identified in SPP 4.2, the precinct plan is to address the Guidelines as well as SPP 4.2.

In preparing and assessing precinct structure plans, local development plans and other relevant proposals against SPP 7.2 and the Guidelines, the proponents and decision-makers shall have regard to the:

- SPP 7.0 Design Principles
- SPP 7.2 Objectives and Outcomes
- Element Objectives and Considerations provided in Part 3 of the Guidelines
- Objectives provided in the relevant local planning framework.

SPP 7.2 and the Guidelines may apply to subdivision and development over land identified as a precinct where a precinct plan is not in place. This is because in such circumstances, proponents must demonstrate that future precinct design would not be compromised by subdivision and/or development.

Figure 1. Precinct design in policy context

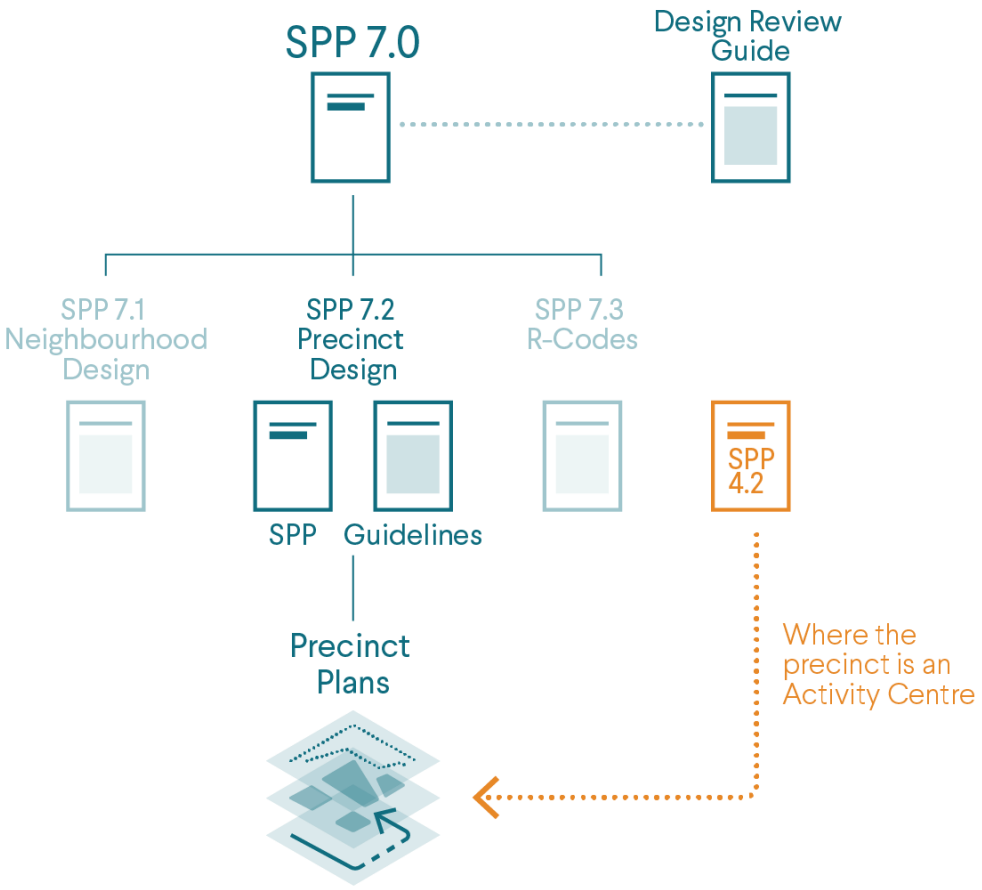
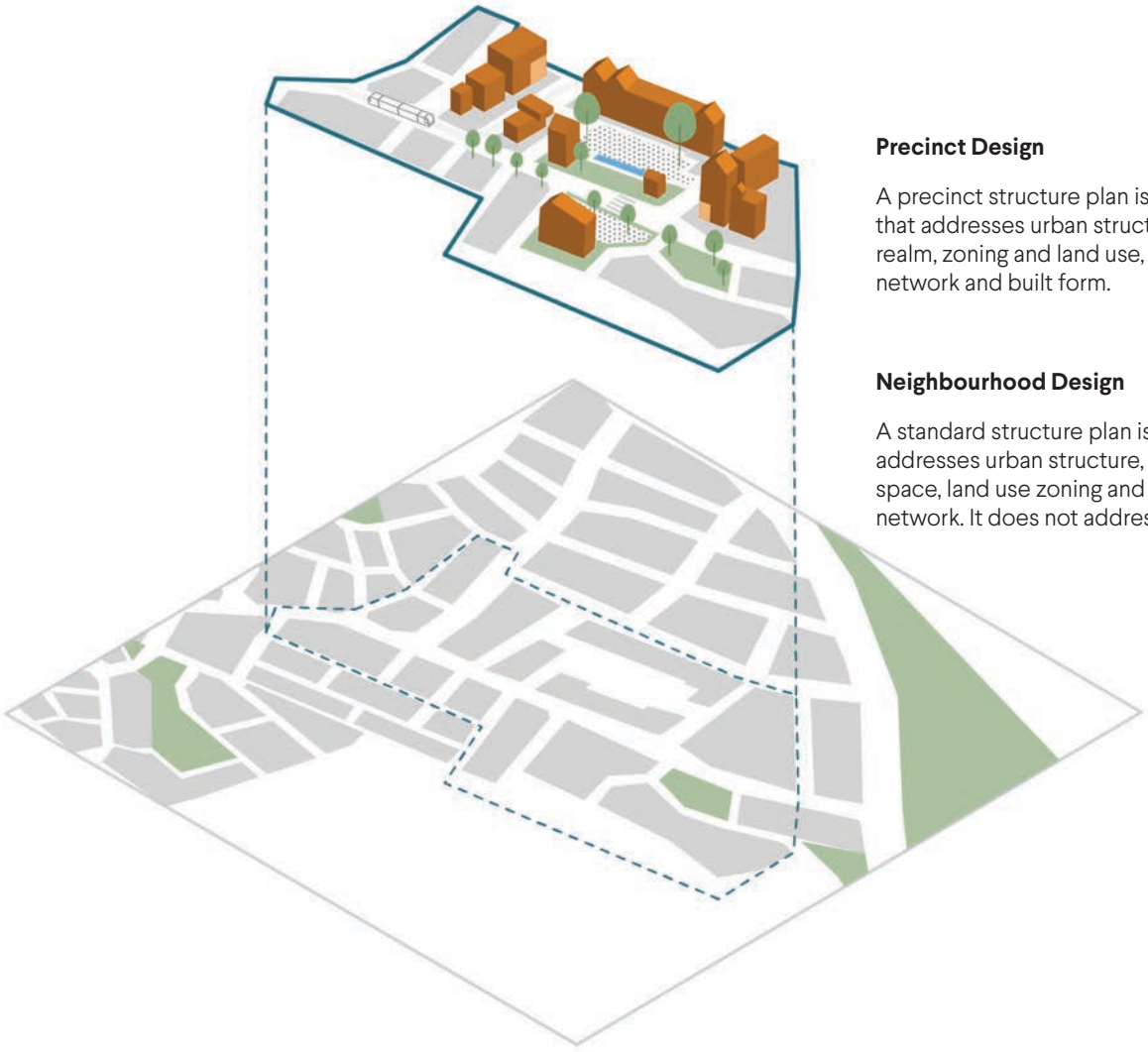


Figure 2. The relationship between precinct design and neighbourhood design

Precinct design addresses the more detailed 2-dimensional and 3-dimensional aspects of identified areas within neighbourhoods that require complex consideration.



Precinct Design

A precinct structure plan is prepared that addresses urban structure, public realm, zoning and land use, the movement network and built form.

Neighbourhood Design

A standard structure plan is prepared that addresses urban structure, public open space, land use zoning and the movement network. It does not address built form.

1.4.1 THE STRUCTURE OF THE GUIDELINES

The Guidelines are divided into four parts:

1 – Introduction

Part 1 establishes the purpose and application of the Guidelines. The relationship with the SPP 7.0 Design Principles and other State and local planning frameworks is set out.

2 – Prepare

Part 2 outlines the process for preparing a precinct plan. It includes analysis and response to site and context, methods for stakeholder and community participation, guidance on establishing a precinct boundary, and setting a precinct vision. It is to be used by all parties designing, submitting or assessing precinct proposals.

3 – Design

Part 3 is presented as a series of Design Elements, each dealing with a different aspect of precinct planning and design.

Each Design Element is supported by an explanatory Intent along with Element Objectives, Considerations and Guidance.

Intent explains the intended outcome and why it is important.

Element Objectives state the aim and/or purpose to achieve the desired outcomes.

Considerations are how the Element Objectives may be achieved through appropriate design responses.

Guidance is also included on how each Consideration might be addressed.

The Element Objectives should be achieved through the flexible application of the Considerations. This will depend on precinct context, purpose, complexity and scale. Where a Consideration is not deemed applicable to a particular precinct, this should be justified in consultation with the relevant decision-maker.

Each Element provides a list of suggested **Precinct Plan Outputs** that may be required. The outputs will vary depending on the precinct type and complexity. Not all outputs will be relevant to every precinct. Agreement should be reached between proponents and the relevant decision-maker as to the outputs and level of detail that will be required as part of the precinct plan reporting.

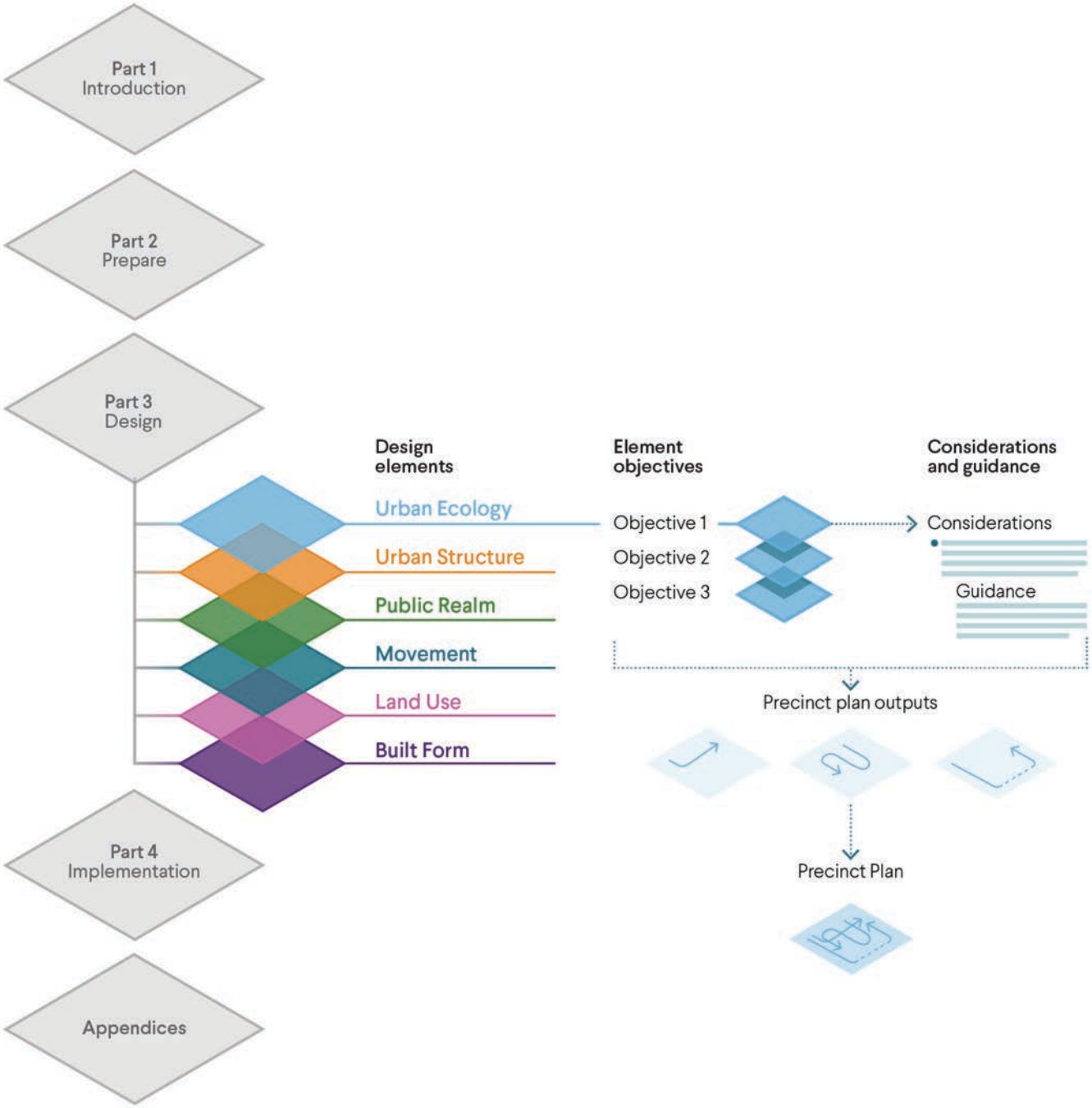
4 - Implementation

Part 4 provides guidance and example outputs that may be included in an implementation section for precinct plans.

Appendix A3 contains a sample assessment template recommended for submission with precinct plans to assist assessment by decision-makers.

An illustration of the Guidelines structure is shown in Figure 3.

Figure 3. Guidelines Structure



1.4.2 DESIGN REVIEW

Where available, design review benefits precinct planning by providing expert, objective, independent advice regarding the design quality of a precinct proposal and the interpretation and application of the Guidelines. Design review can be particularly helpful where precincts are unique or complex.

Design review is carried out against the Design Principles contained within SPP 7.0 or the applicable local planning scheme. Consideration should also be given to the Objectives outlined within the Guidelines, noting that these align with the SPP 7.0 Design Principles.

Design review should be scaled according to the complexity or significance of a proposal and generally follow the methodology outlined in the *Design Review Guide* (WAPC, 2019) to achieve consistency across jurisdictions. It is expected that decision-makers give due regard to the advice and any recommendations provided.

For those precinct plans considered suitable for design review, it is recommended where a Design Review Panel is available that at least two reviews are carried out, one at each of the following stages of precinct plan development:

1. Concept stage is when the project team prepares initial concept layouts for their precinct. This should be carried out soon after the context and site analysis stage, to allow design review feedback to inform the development of the precinct vision and supporting principles. Plans at this stage are typically unresolved sketches with basic street networks and uses indicated along with rough ideas of built form scale and location. Information regarding the surrounding context, and how the concept proposals respond to this, is essential. Multiple precinct design options may be useful where this is appropriate.

2. Design development stage is when the project team responds to feedback and analysis of the precinct concepts to develop a more detailed proposal. Information provided for review will be further refined, presenting a developed precinct proposal. Information regarding the surrounding context, and how the precinct proposal responds to this, is essential.

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PREPARE

2.0 PREPARE

2.1 KNOWING YOUR PRECINCT TYPE

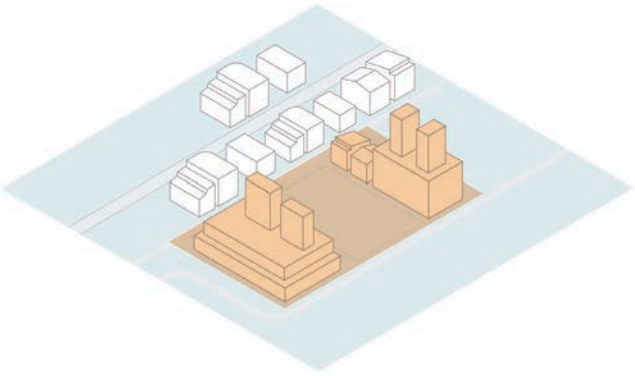
This section outlines the precinct types identified in SPP 7.2 alongside key areas of planning and design focus typically associated with creating a precinct plan for each type of precinct.

The identification of the precinct type prior to the development of a precinct plan, will enable a suitable planning and design response when applying the policy and guidelines.

Each precinct is different, with a unique role and context. Some precincts will be located in well-established urban areas, that are in transition. Others may be in new development areas, requiring a long-term plan for staged development over time.

A precinct could be part of, or an entire activity centre; could be focused on a significant transport hub or a transport corridor; or a location identified as requiring detailed planning to facilitate increased residential density.

ACTIVITY CENTRE PRECINCT

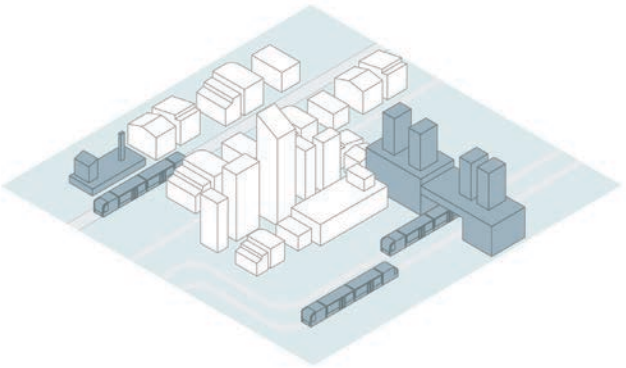


Activity centres (as identified in draft SPP 4.2 Activity Centres, WAPC 2020) are community focal points and typically include activities such as commercial, retail, food and hospitality, higher-density housing, entertainment, tourism, civic/community, education, and medical services. Activity centres vary in size and function and are well-serviced by transport networks.

PLANNING AND DESIGN FOCUS

- Providing an appropriate mix of land uses to enable business activity, service provision and employment opportunities.
- Guiding zoning and subdivision to achieve desired densities and land use mix to support well located and designed higher-density residential and commercial development.
- Integrating local and regional transport infrastructure and networks to ensure strong linkages between the activity centre and surrounding areas.
- Incorporating a network of streets and public spaces in a compact urban form defined by a pedestrian-dominant streetscape where the primary focus of activity is on key public streets.

STATION PRECINCT



Station precincts are areas with the potential to accommodate transit-oriented development (TOD) surrounding stations and other transport interchanges. These precincts range from major centres of transit and urban activity, to smaller centres focused around a local station.

PLANNING AND DESIGN FOCUS

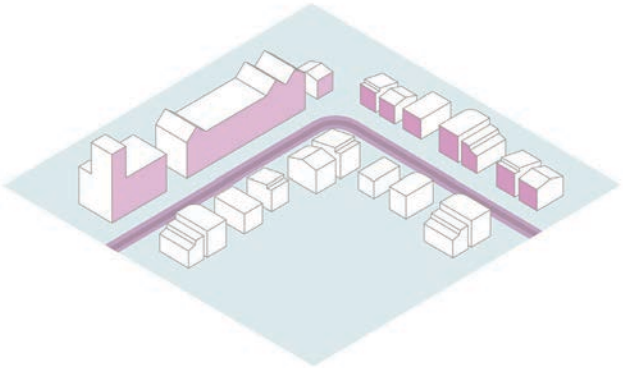
- Facilitating public transport use by ensuring transit infrastructure within the precinct is integrated with surrounding development and promotes ease of access for residents and visitors.
- Guiding zoning and subdivision to achieve desired residential density, land use mix and an intensity of activity to support public transport use.
- Designing the movement network, streetscape and public realm to ensure safe and inviting linkages by all modes between the surrounding precinct and public transport infrastructure.
- Improving the public realm and its interface with transit infrastructure in support of the green network and enhanced amenity.

A precinct may be a mix of different types: it may be an activity centre, which includes a train station, or an urban corridor that includes an activity centre.

A precinct may also be an area identified as a precinct by the WAPC or local government for purposes of orderly and proper planning.

The planning and design focus information provided here is intended to highlight critical issues to consider when planning for each precinct type, to ensure that the design response is appropriately tailored to the purpose, characteristics, complexity and scale of the precinct being designed and planned for.

URBAN CORRIDOR PRECINCT

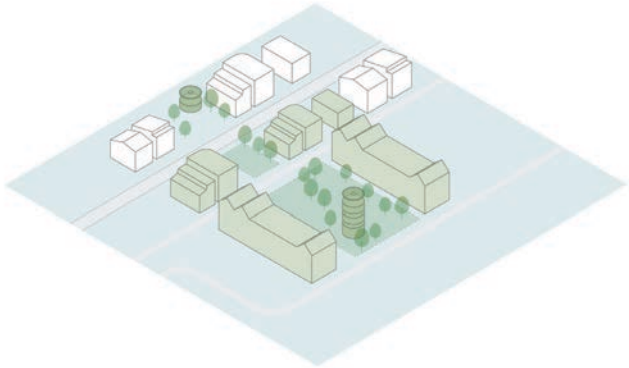


Urban corridors provide connections between activity centres and maximise the use of high-frequency and priority public transport. Urban corridors represent significant opportunities to accommodate nodes of increased higher density residential and mixed use development near good quality, high frequency public transport.

PLANNING AND DESIGN FOCUS

- Understanding the existing and future function of the corridor from both a transport and land use perspective, to guide development outcomes that support the intended vision of the corridor.
- Examining opportunities to increase residential density and promote mixed use development where appropriate.
- Ensuring safe access and movement for all transport modes through the design of appropriate infrastructure with a focus on vulnerable road users.
- Creating a pleasant urban environment through good streetscape design and improving built form to enhance amenity at street level.

RESIDENTIAL/MIXED USE PRECINCT



A residential/mixed use precinct is an area identified as suitable for increased residential density and/or mixed use development, that is not an identified activity centre, station precinct or urban corridor, and requires a plan to coordinate infrastructure, guide subdivision or land assembly, and direct built form outcomes.

PLANNING AND DESIGN FOCUS

- Guiding subdivision/amalgamation and development to support increased residential density and high quality built form outcomes.
- Enhancing urban amenity by detailing lot/building orientation and lot access arrangements that support the future residential character of the precinct.
- Strengthening green networks through the enhancement of the urban tree canopy and improved interfaces between the public realm and private property.
- Ensuring street design supports safe access and movement, public transport use, walking and cycling.

2.2 PRECINCT PLAN FORM

Precinct plans are an integral part of the planning system. They are an important tool to assist planning authorities and local communities identify and plan for areas suitable for urban consolidation, access improvement, mixed use development and higher density housing. Precinct plans can inform changes to zoning, influence subdivision and amalgamation of land, and guide built form outcomes and the design of public spaces.

For statutory planning purposes, a precinct plan may be prepared as either a **precinct structure plan** or **local development plan** (LDP).

A precinct structure plan may typically be required where planning and design guidance is needed in relation to zoning (including residential density), subdivision, and types of land uses and overall development (including built form) that is intended to occur.

A local development plan (LDP) is a mechanism that may be used in limited situations to facilitate the design and coordination of development where detailed built form, public realm and access guidance is needed, but is not to be used to guide subdivision, land use change or density increases.

The Guidelines may also be used to inform the preparation of masterplans, guide plans and other non-statutory documents to guide the planning and design of precincts in Western Australia.

Table 2 outlines the plan components and key design elements that precinct structure plans and LDPs should consider.

Table 2. Precinct plan components and design elements

Precinct Structure Plan	Local Development Plan
Precinct Plan Components	
Zoning and land use	Built form
Subdivision and amalgamation	Movement network design
Public realm design	Public realm design
Movement network design	
Built form	
Infrastructure coordination	
Key SPP 7.2 Design Elements	
Urban Ecology	Public Realm
Urban Structure	Movement
Public Realm	Built form
Movement	
Land Use	
Built Form	

2.3 SITE AND CONTEXT ANALYSIS

This section identifies the key information and process that decision-makers, stakeholders and assessors must use to make an informed decision on proposed precinct plans.

Preparation of a precinct plan requires consideration of the specific site and the wider surrounding context of the area it is located in. Context is a combination of the physical and non-physical characteristics that work together to create a distinct place. A thorough analysis of the site and its context is the starting point for designing a precinct.

Site and context analysis identifies opportunities and constraints. It demonstrates what attributes of the site and its surrounds are interrelated and how they can be addressed. The analysis should be communicated in a clear, easy to understand manner that informs the vision and principles guiding the design of the precinct.

The detail of the site and context analysis needs to reflect the scale of application of the precinct plan, the complexity of the precinct design and the extent of pre-existing information.

Site and context analysis should address the following topics/components (further detail is provided in Appendix A1).

Physical Context

The physical context is the place, landscape and environmental factors of an area as well as the connections within and between a site and its surroundings. Understanding the physical geography of an area is important so the design of a precinct is distinctive and responsive to the site's unique context and character.

The physical context includes an understanding of the following:

- location
- land use
- tenure and ownership
- topography
- vegetation
- soils
- total water cycle
- open space and
- physical infrastructure.

It also includes understanding existing built form and local character (including identified built heritage) as well as the factors that have shaped them.

Community Context

Good precinct design is often reliant on understanding the human/social aspects of the area. Places need to be responsive to the needs of the people who use them. It is essential to include the local community in the design and development process to understand local needs and respond appropriately.

The community context includes an understanding of social factors:

- patterns, customs and habits of local people
- household types
- cultural makeup
- demographics
- visitation
- values
- social infrastructure and services
- future community needs.

Economic factors can include historical and current development patterns, property sector market conditions and outlook, as well as employment and business activity.

Governance Context

When considering the governance context, it is important to understand the processes, policies, institutions and management arrangements that affect or are relevant to a precinct. Understanding the governance context can help deliver more sustainable development outcomes and assist in implementation.

The governance context includes an understanding of the following:

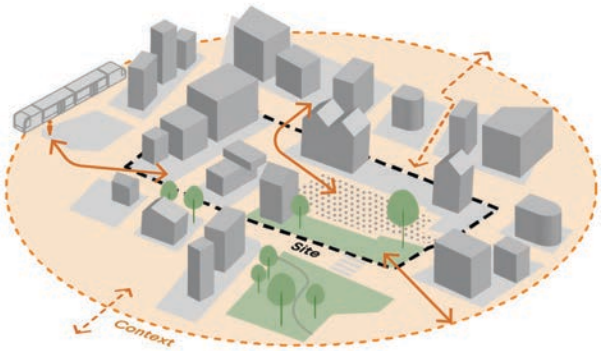
- state planning policies and frameworks
- local planning schemes, strategies and policies
- density targets
- environmental policies, statutes and controls
- economic strategies and plans
- local government strategic community plans
- infrastructure strategies and plans
- sustainability policies and targets.

2.3.1 PROCESS OF SITE AND CONTEXT ANALYSIS

The process of site and context analysis provides an opportunity for practitioners to demonstrate how the design of the precinct engages with and responds to its location and surrounding context.

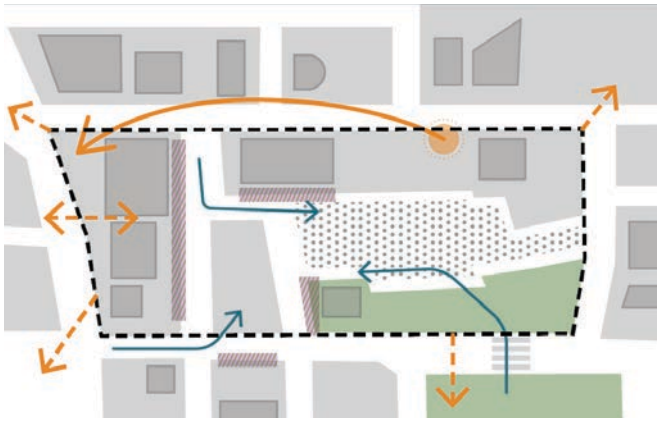
1. Identify

Define the site itself and its surrounding context. Once the site is defined, the features within it can be identified and described. The context description is a summary of the features of the site and its surrounding context, both physical and non-physical.



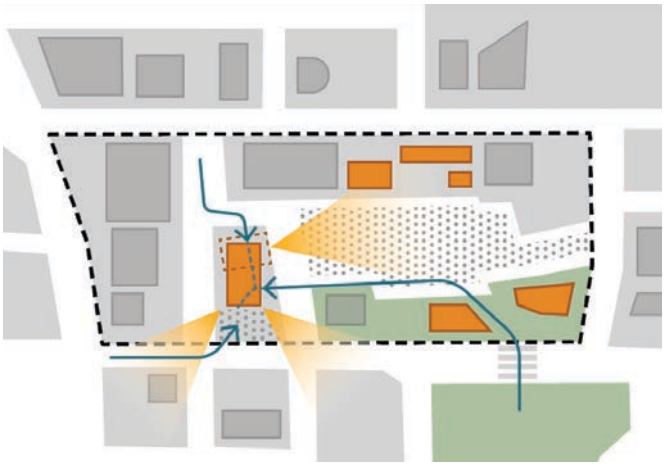
2. Analyse

Analysis uses the information gathered to assess the attributes of the site and surrounding context and clarify how the opportunities and constraints inform the design of the precinct. Is the design of the precinct likely to have a major impact on the context of the area? What are the implications for the design?



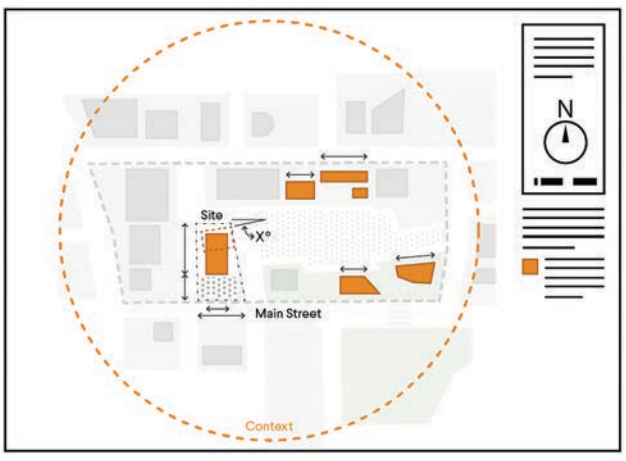
3. Respond

Decide how the design of the precinct will respond to the site and its surrounding context. A clear and considered design concept should be prepared that shows how the design responds to the opportunities and constraints. It can be useful to prepare options in response to different priorities and factors that emerge from context analysis.



4. Document

It is important to explain and document how the precinct design responds to the site and context analysis findings. The documentation must demonstrate that the design response is a genuine result of analysis of the site and its context.



2.4 STAKEHOLDER AND COMMUNITY PARTICIPATION

The community and other stakeholders are a rich source of information and knowledge. Meaningful engagement enables better outcomes, can test design responses and validate context analysis. Communities should have the opportunity to participate in relevant, appropriate and well-timed engagement that allows for their views to be considered in a manner commensurate to the scope and scale of the proposal, and the potential level of community impact and interest.

Effective community and stakeholder engagement (including early local government engagement where the local government is not the proponent) that prioritises consideration of local context enables better outcomes for the community, private developers and government. It allows parties to identify concerns, risks, opportunities, options and potential solutions that surround an issue or plan. This leads to more informed decision-making and mutual benefits for proponents and the broader community.

The Guidelines advocate early and continuous engagement in precinct planning consistent with International Association of Public Participation (IAP2) principles*. These principles promote the values and leading practices associated with involving the community in decisions that impact their lives.

**These principles are guidance only and practitioners can use other public participation techniques if they desire.*

They include:

- **Inclusiveness**: inclusive processes and practices to increase access to information and broaden involvement in planning and decision-making.
- **Reaching out**: new and more effective ways to involve community in planning and decision-making processes will assist in capturing the significant knowledge and expertise residing within communities.
- **Mutual respect**: listening to and understanding the views, concerns and experiences of the community will lead to better decisions and strengthened government/ community relationships.
- **Integrity**: open and accountable engagement practices and processes that genuinely inform decision-making will increase community trust and confidence.
- **Affirming diversity**: incorporating diverse opinions and perspectives into planning, design and decision-making will help achieve effective and sustainable outcomes.
- **Adding value**: government, education, community and stakeholders working productively together will add value to the project delivery process.

While the level and type of engagement will vary depending on the precinct being designed, practitioners are encouraged to engage more broadly than the statutory advertising period when undertaking precinct plans for more complex precincts.

It is important that the decision-maker is informed of engagement processes and timing outside of statutory advertising requirements, as they are often the recipient of community inquiries.

2.4.1 IDENTIFICATION OF STAKEHOLDERS

Stakeholders may include State or local government authorities, the business and local/surrounding resident community. Early understanding of the key stakeholders who may have an interest in a proposal is essential, so too is determining the likely interests of each stakeholder. Both will confirm the most appropriate engagement techniques.

Stakeholders commonly consulted on precinct planning projects include (but are not limited to) the list in Table 3 below.

Identifying groups and individuals who find it difficult to engage due to real or perceived barriers is important to ensure a broad cross-section of views are heard. These groups can differ from project to project but could include:

- children and young people
- disadvantaged and homeless
- people with disability
- aged persons
- Aboriginal and Torres Strait Islander people
- culturally and linguistically-diverse people.

Engagement with these groups should be flexible and adaptable. It should consider communication style, language and the format of such engagement (for example, individual rather than group meetings).

2.4.2 ENGAGEMENT STRATEGY

An engagement strategy should be prepared in consultation with the local government early in the precinct design process, and allow for contingency to adapt and change over time depending on the nature and complexity of issues that arise. It should set out the following:

- the engagement scope, objectives, anticipated benefits, risks and mitigation strategies for those risks
- the local context to be investigated
- who should be consulted, via what mechanism and what issues may arise
- the stages at which engagement should be carried out
- who will be responsible for facilitating the engagement
- the key messages to be communicated in the engagement process
- how the outcomes of engagement should be communicated to stakeholders
- what strategies will be put in place following the engagement to ensure feedback is considered/actioned and stakeholders are kept informed
- how community participation will occur post-approval of the precinct plan in a manner that does not erode certainty of approvals and agreed outcomes.

Table 3. Potential Stakeholders

Government authorities	Private interests	Community interests
State government agencies	Landowners	Residents
Local governments	Investors	Local residents/community groups
Service providers	Developers	Local business and business groups
		Local employers and employees
		Local elected members
		Visitors to an area

2.4.3 ENGAGEMENT METHODS

The level and type of engagement should always be relative to the scale of the precinct and the potential level of community impact it may generate.

Table 4 below indicates example techniques and recommended facilitators for particular levels of precinct planning, depending on the level of impact and complexity. Engagement methods and techniques may be undertaken with reference to the International Association of Public Participation (IAP2) guide.

Note that a project can change in scale throughout the course of the project, depending on the issues that arise.

Table 4. Potential Engagement Techniques

Scale/Impact of Precinct Planning	Example Proposal	Example Techniques	Facilitation of Engagement
LOW IMPACT			
A proposal consistent with the planning framework and unlikely to result in significant community impact	A precinct plan that is consistent with the planning framework – i.e. local development plan	Statutory advertising only Resident/stakeholder door knocks Letter drops and surveys One-on-one stakeholder meetings	Local government
MEDIUM IMPACT			
A proposal which may result in some impact however is generally consistent with the planning framework and can be appropriately managed	A precinct plan that may result in moderate level of community impact – i.e. increased density, traffic impacts	Inclusive of low impact strategies above, plus the following: – community information/open days – expert speaker series/panels – interactive design workshops – focus groups – community reference group or working group – online engagement platforms – surveys or polls – social media tools	Local government Engagement specialist
COMPLEX/HIGH IMPACT			
A proposal which could lead to potentially significant changes to the area	A precinct plan that proposes significant change or is highly contentious – i.e. increased density and building heights, changes to land uses and major infrastructure upgrades	Inclusive of low and moderate impact strategies above, plus the following: – community open days – enquiry-by-design workshops – charrettes – visioning workshops – citizens' jury – field trips/walking tours – digital mapping tools – digital collaborative planning tools	Local government State government Engagement specialist

2.5 PRECINCT BOUNDARY

A comprehensive understanding of a precinct's site and context is necessary to determine the boundary of a precinct. The identification of the precinct boundary is undertaken with consideration of the strengths, opportunities and challenges identified in the context analysis. The precinct boundary should be appropriately defined to support robust analysis, stakeholder coordination and good planning and built environment outcomes.

There are a range of factors that should be considered when determining a precinct boundary and these are outlined in Appendix A2. It should be noted that the factors and examples included in Appendix A2 are not a complete list and there may be other relevant factors that warrant consideration. Early engagement with stakeholders will assist in the identification of additional factors.

Appendix A2 is intended to be used by assessors and proponents where relevant, to guide the process of assessing and determining a suitable precinct boundary. The process should be consultative and justified, based on the information relevant to the circumstance.

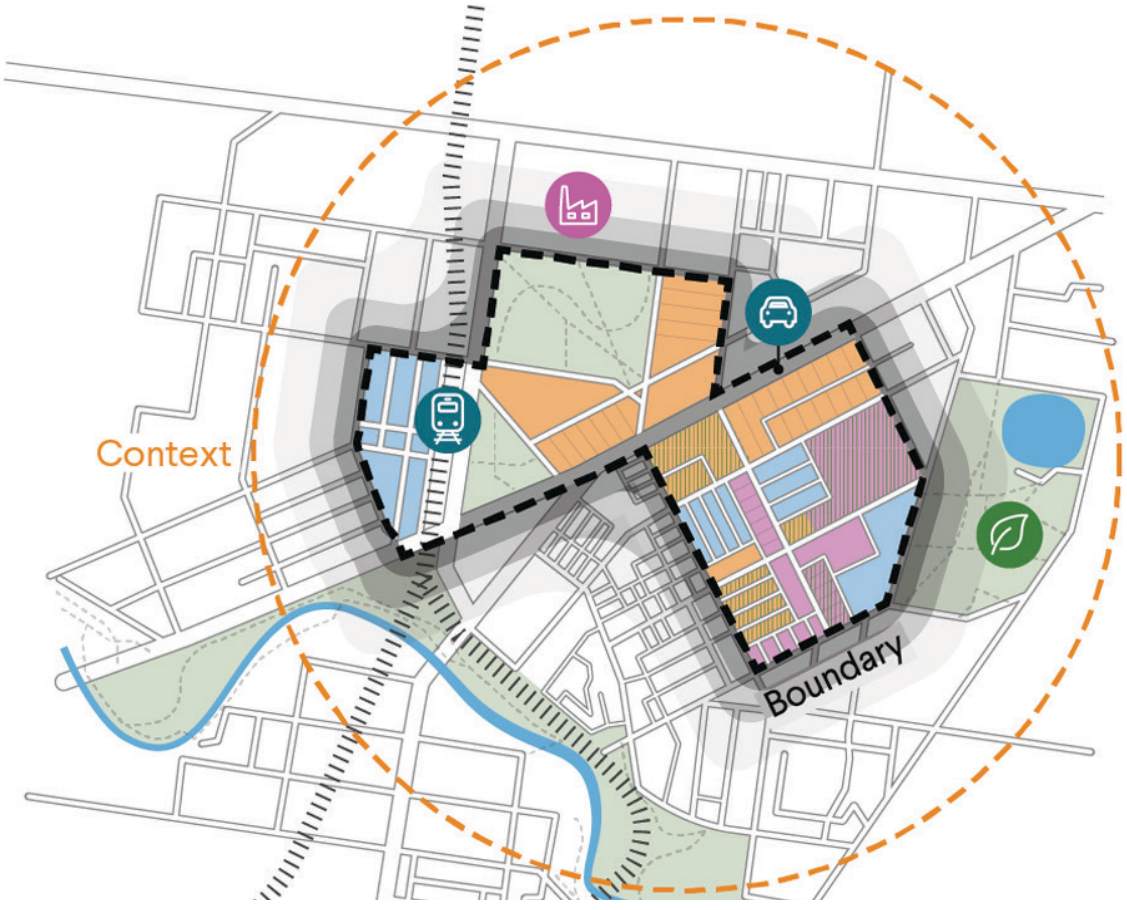
Determining a precinct boundary is an iterative process, refined as contextual analysis proceeds and planning investigations occur. It may also be appropriate for precinct boundaries to adapt in response to community feedback, advice from agencies and/or as an outcome of the assessment process.

It is anticipated that precinct boundaries will be less rigidly defined at the higher order strategic planning levels. Precinct boundaries can be refined at subsequent stages of the planning process as more detailed work is undertaken and context specific investigations and discussions are progressed.

For statutory planning purposes, precinct boundaries will need to be specific in nature, delineating an edge or transition between a precinct and its surrounding area. The identification of a precinct 'core' and 'frame' can be useful if there are transition issues to manage.

Importantly, planning authorities and proponents, should be able to clearly demonstrate the way in which a precinct boundary has been defined and justify why the proposed boundary is suitable.

Figure 4. Determining a precinct boundary



2.6 VISION

Precinct plans should be framed around an agreed vision. The vision must be specific to the precinct being designed and have a strong linkage to place as expressed in site and context analysis, community participation and strategic objectives.

2.6.1 WHAT IS A VISION?

A vision articulates the future role and function of the precinct as a unique place, around which design decisions and outcomes can be based and measured against.

A vision is critical because it ensures alignment of outcomes with the agreed purpose of a precinct. The vision should explain how the precinct design contributes to character and sense of place. It explains how residents, workers and visitors will experience the precinct, and should define the future role, function and composition of the precinct in the short and longer term.

The vision should be aspirational but achievable and capable of expression in detailed design and planning phases. It should address both qualitative (such as connection to place and community wellbeing) and quantitative (such as physical buildings and spaces) outcomes.

It is important to test the precinct plan against the vision to ensure local aspirations are being met. Equally, the vision will be tested and refined through the plan preparation process to ensure the aspirations for the precinct are achievable.

2.7 FEASIBILITY

Precinct plan development should be based upon a clear understanding of the overall feasibility of delivering the envisaged development proposed. An understanding of the likely scale and intensity of the range of uses that will be ultimately delivered within the precinct should be demonstrated, considering viability through development stages.

The feasibility of a new or redeveloped precinct is responsive to the site and context analysis, precinct vision and stakeholder expectations as outlined in the previous sections of Part 2. The feasibility appraisal should not be limited to financial viability, but consider social and environmental parameters as part of the site and context analysis process.

Feasibility should be a continuous consideration throughout the development of the precinct plan, as a filter for decision-making. The precinct plan also needs to test and validate fundamentals before operation. Considerations may include:

- suitability of the precinct plan to accommodate future development opportunities and subsequent investment to achieve the intended future character of the area
- identification of issues associated with coordination between land holdings, tenure and assembly
- engineering, development and construction costs
- sharing of expenses to apportion cost and benefit appropriately
- infrastructure contributions consistent with draft State Planning Policy 3.6 Infrastructure Contributions (WAPC, 2020)
- potential community benefits linked to development incentives
- the need for interim uses, development staging and downstream impacts.

It is also important that there is a balance between the long-term vision of the precinct plan and the economic reality of the desired outcomes. If a large area of land is to be set aside for a long-term purpose, there needs to be consideration of what interim solutions might be needed to avoid the sterilisation of the land or gain interim benefit prior the intended development becoming viable.

Table 5. Feasibility considerations

Example feasibility appraisal list	
Subject area	**Considerations**
Market	Existing feasibility studies Land ownership and tenure Current development proposals and influences Socio-economic factors Land and development costs Funding sources (public/private)
Physical	Existing services and utilities Infrastructure constraints Physical or geographical constraints Site contamination and remediation Drainage

2.8 GUIDANCE ON INCENTIVES AND COMMUNITY BENEFIT

This section provides guidance for proponents and local government on relevant considerations to establish development incentives that may be provided in exchange for community benefit in nominated areas.

Development incentives are a method through which additional development potential or flexibility (such as additional plot ratio and/or building height) is offered in exchange for tangible community benefit, such as public amenities, culture and recreation facilities or affordable and/or accessible housing.

It is important that development incentives are informed by the site and context analysis, led by the local government, do not become 'default' development standards, and are intrinsically linked to design excellence and achieving net community benefit.

Community benefit is the public good that a proposal delivers as indicated by (but not limited to) the following:

Productivity – does the proposal contribute to increasing and or/diversifying employment and the local economy and improving equal opportunity?

Quality of life – does the proposal provide new, or improve on existing services like education, healthcare, community facilities that could improve quality of life for community members?

Environmental sustainability – does the proposal contribute to a sustainable urban environment through improvements to air and water quality, reduced emissions or protecting/enhancing vegetation?

Infrastructure development – does the proposal provide needed, or improve on existing infrastructure such as transport, utilities and recreation that benefits the local area?

Equity and social inclusion – does the proposal help address issues of poverty, social isolation and contribute towards the creation of equitable communities through improved opportunities for minority and vulnerable groups?

The cost and value of community benefit derived must be able to be objectively assessed as the decision-maker will need to:

- determine whether the incentive is enough to attract the desired community benefit
- demonstrate that the value of the community benefit is proportionate with any additional development entitlement.

When articulating community benefit, it is important to detail:

- **What** benefit will occur and how important the benefit will be?
- **Who** in the community are expected to experience the benefit?
- **How** much benefit is expected?

Precinct plans should:

- define the community benefits that might justify greater development potential
- consider the relative weight that may be applied to those community benefits – are some more important than others?
- define an 'upper cap' for allowable additional development
- outline the process for demonstrating community benefit.

When considering the type and scope of incentive to apply within a precinct, precinct plans should reflect the following:

- mechanisms should be chosen and weighted to reflect priorities identified through site and context analysis
- development incentives are to be applied in a responsible and accountable manner to avoid the expectation that they become the 'default' development standard
- mechanisms should be weighted so that community outcomes are balanced with the benefit the developer achieves from the additional development allowed through varying the relevant development standard
- management responsibilities and whole-of-life costs, including operations and maintenance, should be considered where public facilities are proposed
- application of mechanisms should not result in adverse impacts on adjoining properties or the desired future character of the precinct. Where available, Design Review Panel advice should be provided to ensure that high quality design outcomes are achievable and are appropriate to local context.

Incentives may be considered when defining built form envelopes. Possible incentives include:

- increased height
- bonus plot ratio
- relevant local government incentives.

2.8.1 EXAMPLES OF COMMUNITY BENEFIT

The following is a list of community benefit examples that may be considered in exchange for additional development potential or flexibility via a precinct plan:

Affordable housing: where development delivers affordable dwellings in partnership with an approved housing provider or not-for-profit organisation recognised by the Department of Communities.

Dwelling diversity: where development provides a dwelling type agreed as a priority by the decision-maker, such as aged and dependent dwellings, universal access dwellings, one-bedroom apartments, key-worker dwellings or other innovative housing models.

Heritage: where a proposal delivers an exceptional outcome with regard to conserving and/or enhancing a place listed on the State Register of Heritage Places, a local planning scheme heritage list or a place that is located within a designated Heritage Area under a local planning scheme.

Retention and restoration or improvement of vegetation: where significant mature or native vegetation is retained or enhanced within a development site, with provisions to ensure its long-term sustainability.

Economic development: where development results in significant opportunities for the economy of the precinct. It may be a significant uplift in economic activity, a catalyst for further business, increased local employment and/or training, or space for business to locate and incubate.

Public facilities: where development results in the provision of, or improvement to, public facilities or amenities (such as schools, early childhood, community hubs, libraries, health centres and recreation facilities) agreed as a priority by the decision-maker.

Water conservation: where the proposal demonstrates water conservation and management that significantly reduces scheme water use.

Energy efficient design: where a proposal demonstrates energy efficient design and a significant reduction in energy consumption.

Spaces and places: an exceptional contribution to the public realm and/or areas that support social interaction and community engagement. This may include new, or improvements to, infrastructure for recreation purposes and/or enhancements to public spaces that improve amenity and connectivity.

Community development: where proponents seek to deliver processes, activities and structures to support and enhance the community in and surrounding the precinct. This may include partnerships between the proponent and local organisations, and the provision of public art and venues supporting cultural practice and expression.

Precinct plans may also facilitate trade-offs that provide for a 'balancing' benefit in exchange for some precinct plan standards not being met by future development.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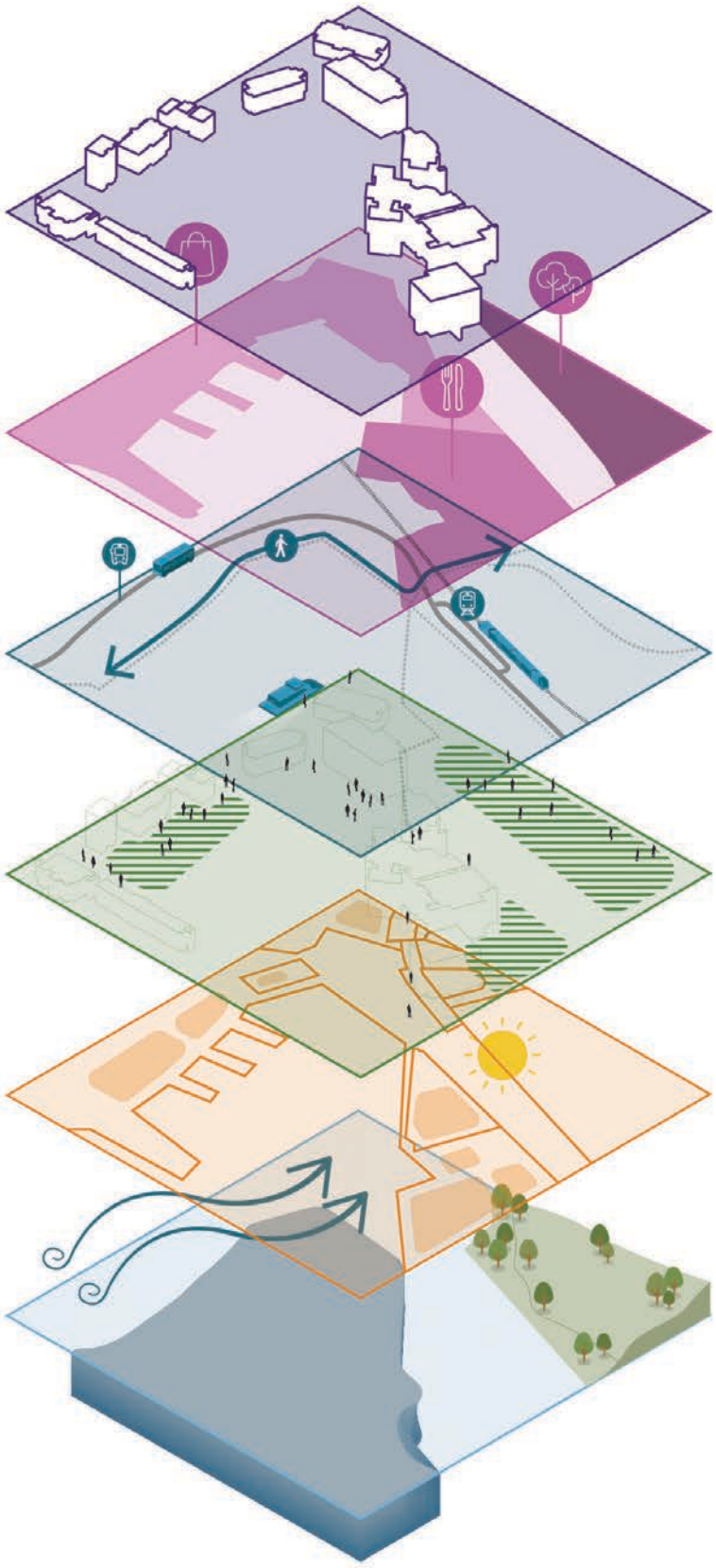


3

DESIGN

3.0 DESIGN

3.1 WHY IS GOOD DESIGN IMPORTANT?

A focus on design quality within the planning system provides the opportunity for innovative and creative solutions to the complex social, economic and environmental challenges of the future. This includes the need to adapt development patterns to limit urban sprawl, reduce pressure on the environment and promote more equitable access to housing, job opportunities and social infrastructure.

Good precinct design is integral to the delivery of these required changes.

Well-designed precincts contribute to the overall social, economic and environmental wellbeing of communities. They enable the successful integration of higher-density development into cities and towns; balance the needs and expectations of existing communities with that of a growing and changing population; optimise the efficiency of supporting infrastructure; enable the delivery of places that are accessible and welcoming to all; and create a diverse range of opportunities for living and working.

Achieving good precinct design requires reconciling a vast range of different, and often competing objectives. These will vary according to the type of precinct, and its scale, complexity and context. As such, good precinct design requires application of design-thinking to broad urban development challenges as well as a performance-based approach to planning assessment.

3.2 PRECINCT DESIGN ELEMENTS

Part 3 contains the Design Elements and their Intent, Objectives, Considerations and Guidance.

1: Urban Ecology

This Element considers the interrelationship of the built, cultural and natural components of the urban environment. It is a holistic consideration that aims to create healthy relationships between people, the built environment and ecological systems.

2: Urban Structure

This Element considers the physical framework of a precinct – the pattern and scale of street blocks, lots and public spaces, and the organisation and scale of streets, roads and paths.

3: Public Realm

This Element considers all public spaces including streets, plazas, civic squares and other areas used by and accessible to the community.

4: Movement

This Element considers the network and services that facilitate movement and access of people and goods within, to and from precincts; including roads, streets, paths, public transport and parking.

5: Land Use

This Element considers the economic, social and civic functions of the precinct and how they relate to its immediate context and surrounding areas.

6: Built Form

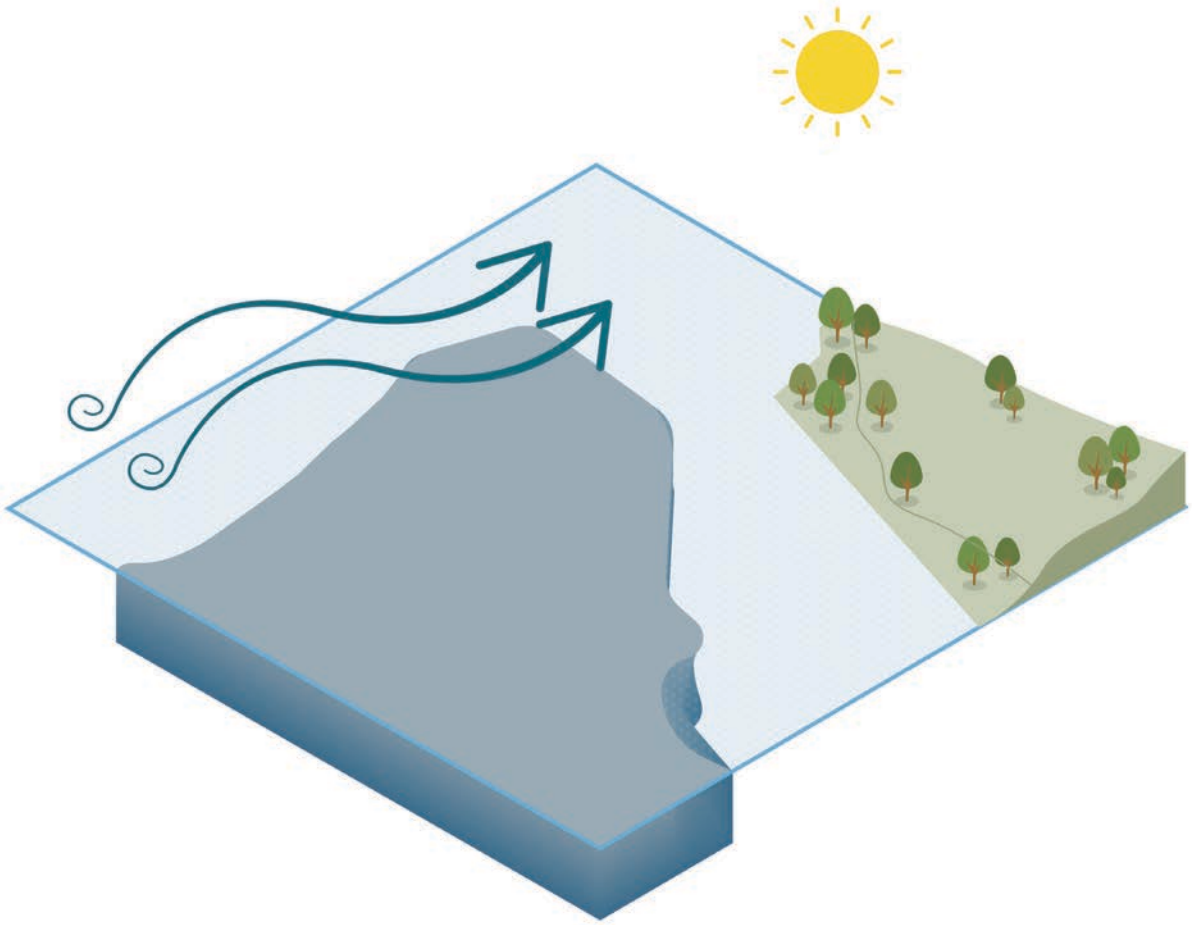
This Element considers built form and scale and the relationships between buildings, and between buildings and the public realm.

DESIGN ELEMENT 1: URBAN ECOLOGY

INTENT

Early consideration of urban ecology can support protection and enhancement of ecological systems with integrated, place-responsive precinct design. This involves developing a holistic understanding of the built and natural environment of the precinct and its wider context.

This approach can deliver significant place, community and environmental benefits contributing to the development of good quality, sustainable urban environments.



DESIGN ELEMENT 1: URBAN ECOLOGY

OBJECTIVE

O1.1 To protect, enhance and respond to the ecological systems of the precinct.

CONSIDERATIONS

C1.1.1 Identify and respond to the topography and landscape of the precinct and its surrounding area.

GUIDANCE

Working with the topographical and landscape attributes (including soils, vegetation and water) will ensure that the urban structure, movement network, public realm and built form integrates successfully with the ecological systems of the area.

Unique topographical and landscape features can contribute to the precinct's place and landscape character. For example, a unique feature such as a significant natural ridgeline or stand of trees, can be incorporated into the precinct design to become a defining focal point.

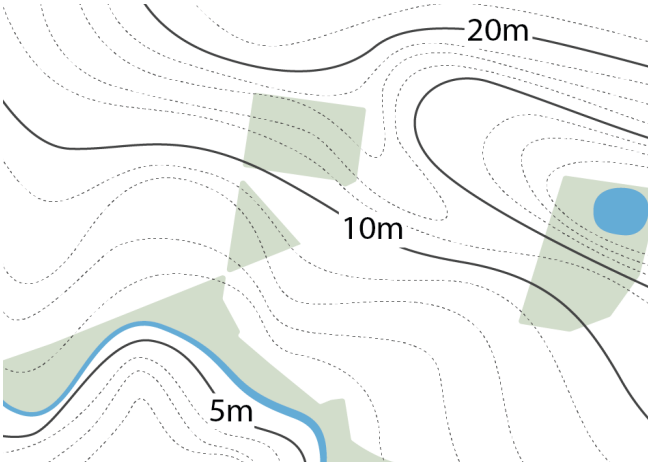


Figure 5. Identify and work with the natural contours and landscape features of the area.

C1.1.2 Identify opportunities to develop and/or enhance the extent, connectivity and quality of the green network.

GUIDANCE

The green network is an important component of the urban structure of cities and towns, and a key factor for sustainable urban development.

Opportunities to expand the extent and improve the quality and connectivity of the natural environment should be considered early in the precinct design process. This includes how existing ecological systems can be supported and protected within urban environments.

Providing green network links through streetscapes, trails, cycle paths and pedestrian footpaths maintains and supports urban habitat corridors and allows communities to be connected to nature to improve liveability, quality of life and wellbeing.

Regional variations in terms of the local climate, natural environment and community needs should be accounted for when developing and/or enhancing green networks.

Figure 6. Identify green network links within and beyond the precinct.

C1.1.3 Consider the total water cycle and how any proposed management responds to the hydrological system, the site and its development context.

GUIDANCE

Consideration should be given to the total water cycle at each stage of the planning process to better facilitate use and management of urban water resources, relevant to the context and scale of the precinct. Depending on the extent of water issues identified in the precinct, it may be appropriate to prepare a water management plan or strategy. Refer to *Better Urban Water Management* (WAPC, 2008) and State Planning Policy 2.9 *Water Resources* (WAPC, 2006) for further information and guidance.

A water management plan or strategy should:

- identify hydrological features (existing drainage, groundwater levels and quality, surface water quality, flood risk areas, waterways and wetlands)
- determine the proposed drainage and existing flood capacity of the precinct
- present water sensitive design options that would apply to the precinct including management of water quality
- consider potable and non-potable water needs, including for irrigation, and optimise reuse opportunities
- address the precinct in its entirety through total water cycle management and demonstrate that the proposed water management strategies are feasible.

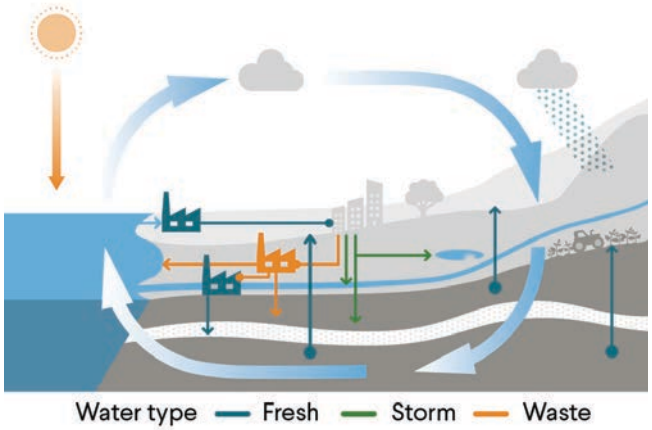


Figure 7. The total water cycle in an urban context.

C1.1.4 Identify opportunities to support habitat protection and enhancement in the precinct.

GUIDANCE

Establish green linkages within the precinct and to the wider ecological network to provide more sustainable habitats.

Provide tree planting, revegetation and/or retention of existing trees and vegetation to help re-establish habitats that have been lost through urbanisation. Reintroduce and/or protect plant species native to the local area where possible.

Provide appropriate transitions and buffers between areas of conservation value and urban land uses.

Figure 8. The Perth Cultural Centre Native Wetland is a re-established wetland habitat within a highly urbanised environment.

DESIGN ELEMENT 1: URBAN ECOLOGY

OBJECTIVE

O1.2 To enhance sense of place by recognising and responding to Aboriginal, cultural and built heritage.

CONSIDERATIONS

C1.2.1 Acknowledge and incorporate local Aboriginal knowledge, concepts and stories of place.

GUIDANCE

Local Aboriginal cultural heritage, including history, stories and a shared understanding of the significance of the landscape and place can contribute to the design and development of the precinct where culturally appropriate. An engagement process involving the Aboriginal community and local knowledge holders should inform the vision and precinct design responses to create places of shared cultural and heritage significance.

The Australian Indigenous Design Charter outlines a protocol that can assist with ensuring Aboriginal cultural expression is appropriately addressed.

C1.2.2 Consider and integrate the cultural heritage of the area into the precinct design.

GUIDANCE

Understanding the social history and stories of place, as well as patterns of use and the cultural significance of existing built form can provide a rich source of inspiration for the precinct vision and design response.

The cultural heritage of an area should be considered as an opportunity to embellish local histories through the precinct design to help create a distinct identity and sense of place.

The Burra Charter provides guidance for the conservation and management of places of cultural significance (cultural heritage places) in Australia.

Figure 9. 'First Contact' sculpture by renowned Aboriginal artist Laurel Nannup, tells how local Noongar people believed the arrival of European ships were their past ancestors returning from sea.

Figure 10. Bathers Beach in Fremantle celebrates the local history of the area by incorporating stories of place into the precinct design.

C1.2.3 Identify and incorporate unique built features, including built heritage, into precinct design.

GUIDANCE

The built heritage and other built features of the precinct contribute to the area's character and identity.

Built heritage and/or character studies can inform the design response for urban structure, built form and streetscape design. This may include identification of character or heritage areas within the precinct that require a particularly sensitive design response.

Figure 11. Railway Square in Midland is a public space that uses built heritage and other features to define a unique identity.

DESIGN ELEMENT 1: URBAN ECOLOGY

OBJECTIVE

O1.3 To reduce the environmental and climate change impacts of the precinct development.

CONSIDERATIONS

C1.3.1 Identify opportunities to retain existing trees and enhance the tree canopy through new planting.

GUIDANCE

Retaining trees and increasing the extent of the urban tree canopy is important for mitigating urban heat island effects. This issue is increasingly important due to current patterns of tree canopy loss and forecast temperature increases due to climate change.

Improving tree canopy also supports habitat protection, provides cleaner air, stormwater infiltration, and reduces energy use for cooling. Tree lined streets encourage walking and cycling by providing shade and also contribute to the green network.

Undertaking a tree survey (and assessment) will inform which trees are suitable for retention and an appropriate design response.

Refer to *Better Urban Forest Planning for Perth and Peel* (WAPC, 2018) for further information and guidance; and to the relevant local government urban forest strategy where available.

Figure 12. Tree lined streets provide shade and contribute to the green network.

C1.3.2 Consider the influence of the precinct design on energy demand and review the potential for precinct scale energy generation, distribution and storage.

GUIDANCE

Designing at a precinct scale provides unique opportunities to significantly reduce energy demand.

Designing the urban structure and lot configurations to accommodate climate-responsive building design can assist in reducing energy demand across a precinct.

Strategies to reduce energy demand and promote a shift to renewable sources and storage of energy can also help lower carbon emissions. These strategies should be tailored to suit the scale, function and complexity of the precinct.

Opportunities for distributed energy systems should be investigated, including on-site renewable electricity generation, co-generation, smart micro-grid infrastructure and battery storage, where appropriate. Consult with Western Power early in the planning phase regarding the implementation of these technologies.

Refer to national and state resources and policies that provide best-practice guidance. For example: *National Carbon Offset Standard for Precincts* (Commonwealth of Australia, 2017) and *Guide to Low Carbon Precincts* (Cooperative Research Centre for Low Carbon Living, 2019).

C1.3.3 Prioritise consideration of waste management at the relevant scale in line with low-waste, circular economy objectives.

GUIDANCE

Depending on the scale and type of precinct, it may be appropriate to develop a waste management plan to consider strategies to divert waste from landfill including waste composting, nutrient capture, recycling schemes and identified waste management and monitoring responsibilities.

Minimising waste should also include transitioning to a material efficiency approach for development. Precinct design should consider how to encourage recycled materials and to minimise demolition and construction waste in new development.

Refer to *Waste Avoidance and Resource Recovery Strategy 2030* (Waste Authority, 2012) for further guidance.

Figure 13. Circular economy and the concepts of life-cycle thinking and resource efficiency.

C1.3.4 Promote water conservation including water reuse and recycling.

GUIDANCE

To reduce groundwater use and improve water use efficiency in a changing climate, opportunities for alternative potable and non-potable water supplies should be considered.

Where possible use alternative water supplies such as recycled stormwater, harvested rainwater and recycled wastewater. For public spaces use alternative water supplies for irrigation systems along with planting waterwise species.

For further information regarding these practices, refer to the Department of Water and Environmental Regulation, Water Corporation and Department of Health.

Figure 14. Hartfield Park Stormwater Capture and Reuse Scheme is an award-winning project that harvests valuable stormwater recycled for irrigation purposes.

C1.3.5 Evaluate the performance of precinct development proposals against leading Australian sustainability performance standards.

GUIDANCE

Sustainability evaluation can be tailored to suit the scale and complexity of the precinct, and is key to tracking and communicating the sustainability performance of a precinct from the initial design to completion and operation.

The Green Building Council's *Green Star Communities* provides a nationally recognised framework performance evaluation.

The *One Planet Living Framework* is also recognised in Western Australia by several local governments and sets clear performance standards.

These frameworks can be used independently or in unison to enhance development outcomes, however, performance evaluation should be undertaken against one standard.

Figure 15. Curtin University's Greater Curtin Master Plan is an example of a 6 Star Green Star – Communities certification.

PRECINCT PLAN OUTPUTS

The precinct plan outputs will vary depending on precinct type and complexity. Not all outputs will be relevant to every precinct.

Site assessment: identification of landscape and topographical features (natural and cultural)

Biodiversity and/or environmental assessment: including threatened ecological communities and fauna habitat identification

Heritage and/or place character study: including Aboriginal, cultural and built heritage interpretation plan

A **water management plan or strategy:** as per *Better Urban Water Management* (WAPC, 2008) for the management of urban water resources relevant to the context and scale of the precinct

Energy and greenhouse gas emissions statement: to demonstrate how the precinct has reduced emissions and incorporated renewable energy sources

Waste management plan/strategy: where identified as appropriate

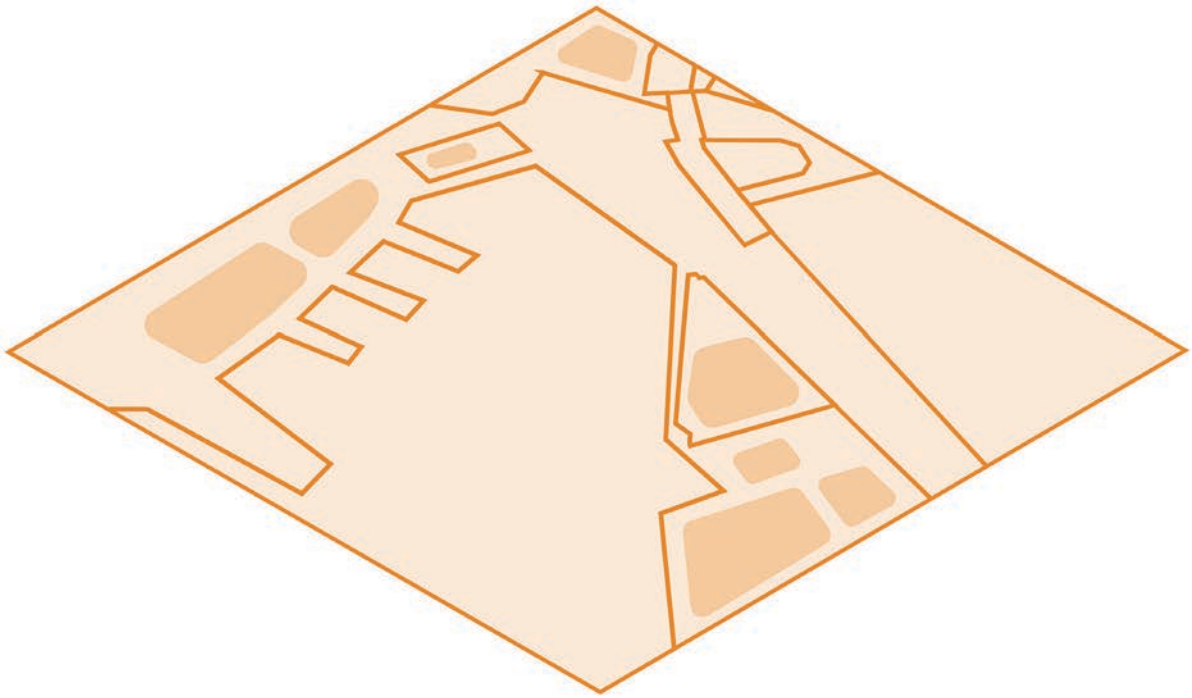
Tree survey (and assessment)

DESIGN ELEMENT 2: URBAN STRUCTURE

INTENT

A well-considered urban structure will be place-responsive: that is, developed with careful consideration of its physical, cultural and economic context to integrate with the surrounding urban fabric and landscape of the area.

The urban structure should be robust, flexible and legible, and designed to support the intended function and built form of the precinct.



DESIGN ELEMENT 2: URBAN STRUCTURE

OBJECTIVE

O2.1 To ensure the pattern of blocks, streets, buildings and open space responds and contributes to a distinct, legible precinct character.

CONSIDERATIONS

C2.1.1 Design the urban structure in response to the existing or intended future precinct character.

GUIDANCE

For infill precincts – the existing urban structure should be assessed and potentially reconsidered to ensure that it is responsive to major structuring elements, such as nodes of activity, the movement network, public spaces, block and lot patterns, street layout, landscape features, existing heritage and any other factors which contribute to the precinct's significance, character and sense of place.

For greenfield precincts – design the urban structure to be site responsive in consideration of the existing topography, hydrology, remnant vegetation and other natural and historical features; and to be well connected to the surrounding area.

C2.1.2 Create blocks and lots of the appropriate size, proportion and orientation to support the intended character and functions of the precinct.

GUIDANCE

Consideration of block and lot orientation can enable more efficient land use and built form. Block and lot sizes should support the intended land uses, built form typology and function of the precinct.

For example, a precinct (or nodes within a precinct) with a commercial/mixed use focus will have different block and lot orientation and size requirements compared to a predominantly residential infill precinct. Smaller blocks are appropriate in urban centres to enable a permeable, walkable urban form, with larger blocks appropriate for fringe or transition zones.

A block perimeter of around 600m provides for a good balance of pedestrian and vehicular access and enables an efficient subdivision pattern.

Figure 16. Consider all relevant factors when designing the urban structure.

C2.1.3 Identify existing key landmarks to create view corridors and highlight destinations and focal points within the urban structure.

GUIDANCE

Developing the urban structure with reference to key sightlines and visual links within and beyond the precinct can create view corridors that enhance the distinct character of an area and aid in wayfinding.

Streets and paths laid out to take advantage of existing key buildings and/or natural landmarks can provide visual interest and make it easier for people to orientate themselves and navigate the precinct.

Figure 17. The Roundhouse in Fremantle is a visual anchor for wayfinding through the city, reflected in view corridors.

DESIGN ELEMENT 2: URBAN STRUCTURE

OBJECTIVE

O2.2 To promote an urban structure that supports accessibility and connectivity within and outside the precinct.

CONSIDERATIONS

C2.2.1 Design a legible, interconnected and functional urban structure that supports ease of movement to and through the precinct.

GUIDANCE

A grid network achieves efficient connections by providing a choice of routes. Straight streets and clear sightlines are easier to navigate and safer for pedestrians.

Consider the following when defining the appropriate grid structure for the precinct:

- topography – align streets to follow contours for flatter paths of travel
- orientation – consider street orientation to support connectivity and legibility
- development context – respond to desire-lines to important destinations such as transit stops and major trip-generating land uses.

Figure 18. With the proper block size, the grid provides an inherently walkable street network.

C2.2.2 Develop an urban structure that gives priority to safe walking and cycling, with a focus on achieving 400m and 800m walkable catchments around nodes of activity and public transport hubs.

GUIDANCE

Street and block layout should support the provision of an active transport network that provides connections from dwellings to activity centres, public spaces and public transport services.

The urban structure should be easily and safely traversable for pedestrians and cyclists, with direct routes between major destinations to encourage walking and cycling.

Figure 19. A 400m and 800m radius represents a five and ten-minute walking distance.

C2.2.3 Identify opportunities to create new or enhance existing connections to and through the precinct.

GUIDANCE

The provision of direct, cross streets or pedestrian paths through existing street blocks can improve accessibility and legibility.

Where block lengths exceed 120m, providing high quality mid-block pedestrian and cycle connections can encourage active transport and improve linkages between key destinations.

Figure 20. Washing Lane in Northbridge is an example of an improved linkage that enhances accessibility.

DESIGN ELEMENT 2: URBAN STRUCTURE

OBJECTIVE

O2.3 To ensure the urban structure supports the built form, public realm and activity intended for the precinct.

CONSIDERATIONS

C2.3.1 Provide block configurations that support the function and amenity of the precinct.

GUIDANCE

Determining appropriate block sizes is important as it sets up the foundation for the movement network and built form. Block size is a trade-off between access, adaptability and the ability to accommodate a variety of building types and sizes.

Block shape and proportions should be designed with consideration to the intended urban intensity (including residential density), built form and land uses. It is appropriate for there to be some variation in block sizes across the precinct to accommodate the range of built form and land uses expected.

C2.3.2 Design lots (size and configuration) that can support intended retail, commercial and mixed use development.

GUIDANCE

Lot sizes and proportions for retail, commercial and mixed use areas should support a varied built form and the intended land use mix.

Smaller lots with narrow frontages and direct access to pedestrian footpaths can encourage a diversity of uses and tenures and are appropriate in activity centres of various scales.

Some mixed use/commercial buildings will require larger lots and wider frontages. Planning for these areas should carefully consider the layout of the lots with regard to walkability, land use and relationship to the public realm.

Figure 21. Block dimensions from 120m - 240m long and 60m - 120m wide can provide a range of block sizes to promote building variety.

C2.3.3 Design lot layouts to respond to local climate, topography and existing natural features, while supporting intended built form.

GUIDANCE

Lots should be shaped and orientated to respond to the following:

- facilitate climate-responsive and energy efficient development
- address site constraints including topography, water management, vegetation retention, noise issues and bushfire risk
- minimise earthworks and retaining walls
- capitalise on key views where possible.

Lots located in climate zones 4, 5 and 6 (hot dry summers/ cool winters/warm to mild temperate) should be shaped and oriented to capture winter sun and minimise direct summer sun. Lots located in climate zones 1 and 3 (high humidity/ hot dry summers and warm winters) should be shaped and oriented to maximise shading and the effect of prevailing breezes and minimise exposure of areas to direct sunlight.

Regardless of location, lots may be climate-responsive if orientating streets within 15 degrees of north-south and/or east-west and lot shape is square or rectangular.

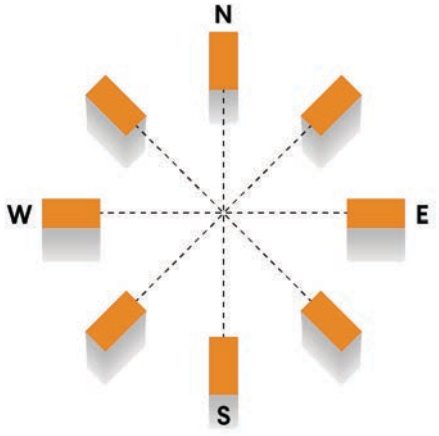


Figure 22. Lot orientation should respond to climate and facilitate energy efficient development.

C2.3.4 Design an urban structure that can accommodate lots for large format uses outside the precinct core where desired.

GUIDANCE

Land uses that occupy large land parcels (including large format retail, civic and some commercial uses) can create a barrier to movement through a precinct.

These uses can also generate significant vehicle traffic and where they need to be accommodated, they are more appropriately located at the edge of precincts that have an urban core, with good access to major roads.

When planning for these sites, prioritise provision of direct pedestrian links within the larger blocks to improve walkability.

Provide for a transition or delineation from large development sites to finer grained adjacent areas through considerations of existing and intended scale, built form, land uses and street design.

Figure 23. Locate lots for land uses that take up large areas at the edge of precincts.

DESIGN ELEMENT 2: URBAN STRUCTURE

C2.3.5 Create an urban structure that contributes to the development of accessible, safe and well located public spaces.

GUIDANCE

A place-responsive urban structure can contribute to the development of a public realm that includes a diverse range of public spaces within easy walking distance of homes and workplaces. When designing the urban structure, consider opportunities to link public spaces with pedestrian and cycle paths.

Figure 24. Linked public spaces contribute to the green network and create a pleasant urban environment.

OBJECTIVE

O2.4 To ensure an adaptable urban structure that can respond to and facilitate change within a precinct.

CONSIDERATIONS

C2.4.1 Develop a street block pattern that can accommodate change over time.

GUIDANCE

Providing regular block and lot patterns within the precinct enables future subdivision or amalgamation to accommodate increased land-use intensities, residential densities and/or worker population growth.

This may involve reconsidering the lot size, proportion and frontage widths for both residential and commercial lots, in consideration of the intended built form outcome. A mix of lot sizes will help support built form housing diversity, and a range of options for commercial development.

Wider, shallower lots with appropriate orientation may be suitable for subdivision into terrace house lots, maintaining street frontage to dwellings and supporting a high-quality streetscape. Where the existing block pattern has deep lots, it may be appropriate to consider new laneways within the urban structure. Laneway access can also be beneficial for mixed use areas and centres, where servicing and deliveries can be easily accommodated and separated from the active public realm of main streets.

C2.4.2 Identify long-term strategic opportunity/catalyst sites and detail how they are to be protected from under-development.

GUIDANCE

Strategic opportunity/catalyst sites are those that will have a significant impact on the activity, character and function of the precinct. They can also function as a trigger for further development.

Delivering the intended land use and built form outcome for strategic opportunity or catalyst sites can be critical to a precinct's long-term success. This will require detailed implementation planning and may involve short-term strategies for development sites to prevent under-development. This could include transitional or interim uses for these sites to allow for activation in the short to medium term.

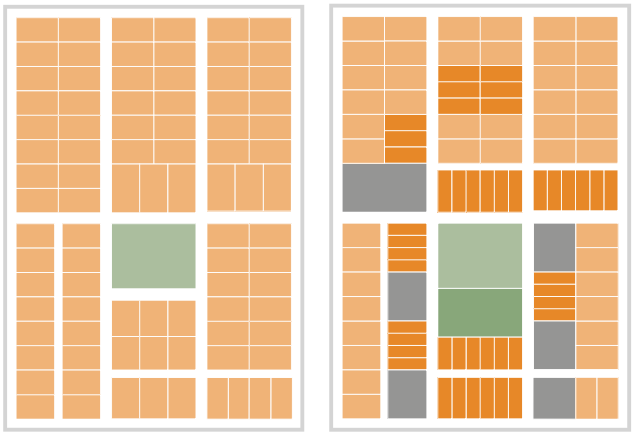


Figure 25. A regular block and lot pattern provides opportunities for future subdivision and new access routes.

C2.4.3 Illustrate the relationship between the proposed urban structure and precinct staging.

GUIDANCE

Developing a staging plan can demonstrate how the urban structure can evolve over an extended timeframe consistent with the precinct vision and considering short, medium and long-term objectives.

This should include any associated adjustment or changes planned for the urban structure, including amalgamation of smaller irregular blocks or lots into a more useful arrangement, formalising private right-of-way into public accessways, laneways or roads, or reorientating roads or streets to better respond to a natural feature or landmark.

PRECINCT PLAN OUTPUTS

The precinct plan outputs will vary depending on precinct type and complexity. Not all outputs will be relevant to every precinct.

Urban structuring plan showing:

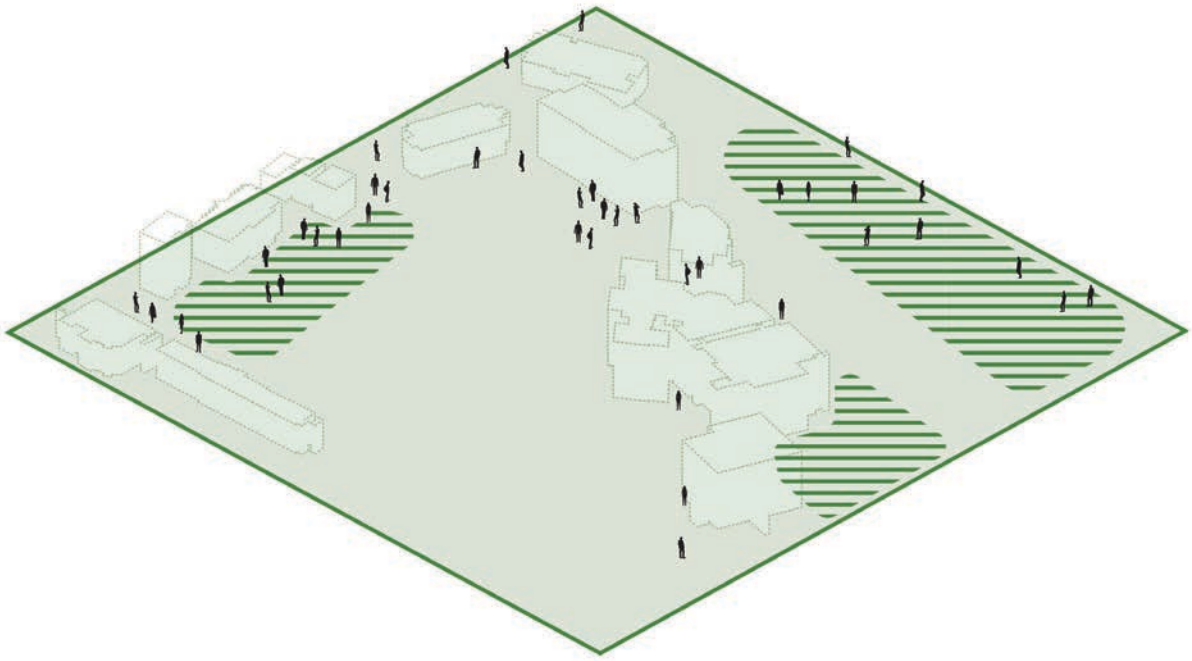
- existing and proposed block and street structure
- existing/proposed lot layout
- 400/800m walkable catchments
- intention in relation to vacant or underutilised land
- key public spaces (existing and proposed)
- significant waterways and drainage corridors (including buffers)
- movement network – streets, paths, transit corridors
- response to key views and landmarks
- staging of urban structure and development/change where appropriate

DESIGN ELEMENT 3: PUBLIC REALM

INTENT

A well-designed public realm supports community wellbeing. It provides spaces and opportunities for relaxation, recreation, contemplation and connection to nature, and can promote the use of walking and cycling.

The public realm should provide a range of well-connected, functional and enriching places, appropriate to the function, scale and character of the precinct.



DESIGN ELEMENT 3: **PUBLIC REALM**

OBJECTIVE

O3.1 To ensure the public realm is designed to promote community health and wellbeing.

CONSIDERATIONS

C3.1.1 Provide a range of public spaces that support and contribute to the community's health and wellbeing, in response to identified community need.

GUIDANCE

A well-considered public realm can promote community interaction, social cohesion and opportunities for relaxation and recreation.

Undertaking a public space audit and community needs assessment can assist in establishing priorities for action, from small upgrades to redevelopment, or the creation of new public spaces. Findings from these assessments can inform the types of public spaces needed in an area, such as spaces for civic, recreation, nature, sporting and multi-functional spaces.

C3.1.2 Design public spaces for multiple uses, to efficiently accommodate a range of functions and activities.

GUIDANCE

Multiple-use public spaces can provide a range of activities for the community such as recreation, sport and nature functions, as well as serving for purposes such as urban water management (through water sensitive urban design), nature conservation and integration of utilities where appropriate.

The benefit of making public spaces flexible, shared, mixed use and available to a range of users is significant, including encouraging activity for extended hours and reducing the need for duplication of facilities. For example, co-locating sports ground facilities with schools (where relevant/ appropriate) allows for community access within a precinct through a shared-use agreement.

Figure 26. The public realm should be responsive to community need and provide opportunities for recreation and relaxation.

Figure 27. The Scarborough Beach Redevelopment creates a vibrant public realm with a range of functions, activities and events for people of all ages to enjoy.

C3.1.3 Consider year-round user comfort in the design of the public realm.

GUIDANCE

Plan and design the public realm to address user comfort in relation to the local climate of the area.

Spaces that are appropriately shaded in summer and that maximise solar access during winter, will be able to be used all year round – this is relevant to climate zones 4, 5 and 6 (hot dry summers/cool winters/warm to mild temperate).

Climate zones 1 and 3 (hot/humid/dry summers and warm winters) will require local climate-specific designs to ensure user comfort is achieved in the public realm (namely cooling and shading).

Also consider how landscape treatments can be used to minimise the effect of strong winds and to provide rain protection, where required. Making provision for trees with sufficient shade canopy along streets and pedestrian paths will encourage walking and cycling and reduce the urban heat island effect.

Figure 28. The public realm should provide user comfort all year-round where possible.

DESIGN ELEMENT 3: **PUBLIC REALM**

OBJECTIVE

O3.2 To enable local character and identity to be expressed in public realm design to enhance sense of place.

CONSIDERATIONS

C3.2.1 Public realm design should incorporate local natural topography, habitats and vegetation to enhance sense of place.

GUIDANCE

Retaining and integrating natural features into public realm design contributes to the local character and identity of the precinct. It also contributes to conservation objectives and can strengthen a community's connection to nature for enhanced wellbeing and quality of life.

Examples of retaining and integrating natural features into the public realm include:

- street tree retention and planting
- retention and enhancement of vegetation
- wetlands and waterways
- topographic features
- landscape treatments.

Figure 29. Public realm design integrating the natural feature of a wetland to strengthen connection to nature.

C3.2.2 Demonstrate appropriate interpretation of Aboriginal knowledge, history and heritage within public realm design.

GUIDANCE

The design of the public realm presents a significant opportunity for recognition of Aboriginal knowledge and connection to place, that can contribute to a unique sense of place, character and identity for a precinct.

Undertaking early and appropriate cultural input and collaboration is encouraged to provide a culturally informed and unique design response.

C3.2.3 Design the public realm to reflect the heritage significance of the precinct and support the precinct's intended character and identity.

GUIDANCE

Considering and incorporating layers of cultural experience can help build place character and identity. This can include specific responses in public space, streetscape and landscape design to reflect the cultural and built heritage of the area. Incorporation of public art throughout a precinct can also contribute to local place meaning.

Undertaking heritage and place studies with community input can ensure that the public realm is valued and well used by the community.

Figure 30. Incorporating and adapting cultural and built heritage features into public realm design can enhance sense of place.

DESIGN ELEMENT 3: **PUBLIC REALM**

OBJECTIVE

O3.3 To ensure that key environmental attributes are protected and enhanced within the public realm.

CONSIDERATIONS

C3.3.1 Integrate environmental features of the precinct within the public realm.

GUIDANCE

Significant environmental features such as topography, waterways and vegetation (including habitat areas) can be incorporated into the public realm design to support the urban ecology and enhance the sustainability of the precinct.

The design of the public realm should consider all opportunities to incorporate environmental features identified in the assessment of the precinct's urban ecology. This could include re-establishment of a significant habitat area at the edge of an urban park or providing an ecological linkage between sports fields with local native trees and landscaping.

Figure 31. New street planting can be used to link important environmental features of the public realm.

C3.3.2 Ensure the public realm contributes to creating and/or improving the urban tree canopy within the precinct and its surrounds.

GUIDANCE

The public realm has a significant role in supporting the urban tree canopy.

Strategies for effective tree management should be considered as part of precinct design to promote tree retention and the integration of new trees into the public realm. Strategies to increase urban tree canopy may include:

- planning, design and construction of the development (including roads and streets) to prioritise the retention and enhancement of trees where possible
- retain trees with mature canopies
- appropriate tree species selection
- provision of deep soil zones and root protection areas
- canopy targets (dependent upon the relevant local government's physical attributes, resources and community stakeholders).

Refer to *Better Urban Forest Planning for Perth and Peel* (WAPC, 2018) for further information; and to the relevant local government urban forest strategy (where available) for guidance on local approaches for increasing the tree canopy and tree planting in the public realm.

Figure 32. Tree canopy in the public realm, including along streets, provides many benefits.

C3.3.3 Incorporate waterwise species into the green network and public realm where appropriate.

GUIDANCE

Use local native plant species where possible as they are generally waterwise, low maintenance, more likely to thrive once established and can support rebuilding of habitats.

A mix of native and non-native species of trees and vegetation may be appropriate for streetscape planting to improve resilience, increase shade canopy and contribute to local biodiversity.

Refer to the relevant local government urban forest strategy (where available) for guidance.

Figure 33. Native species are often waterwise, low maintenance and suitable for rebuilding habitats.

C3.3.4 Incorporate water sensitive urban design into the public realm.

GUIDANCE

The design of the public realm should be responsive to limited groundwater availability and needs to achieve optimal site useability; while considering natural landscape, hydrology and ecosystem functions. This can be achieved through the implementation of water sensitive urban design (WSUD).

WSUD strategies for the public realm should respond to local climate, ground conditions, the type of space and its intended functions. The strategies should also integrate with water management plans or strategies as per *Better Urban Water Management* (WAPC, 2008) depending on the precinct scale and context.

Where appropriate, WSUD should be incorporated into the public realm design to manage site-specific water issues (for example, water quality and stormwater management) while retaining the functions of the public space for its intended community use.

Public realm landscape design should respond to the availability of water resources for irrigation and maximise water conservation by using recycled stormwater, hydrozoning and xeriscaping where appropriate. Refer to *Better Urban Water Management* (WAPC, 2008) and the Department of Water and Environmental Regulation for further information.

Figure 34. Residential development in White Gum Valley has incorporated water sensitive urban design into the precinct.

DESIGN ELEMENT 3: **PUBLIC REALM**

C3.3.5 Provide opportunities for urban greening, such as community gardens and rooftop gardens.

GUIDANCE

Urban greening such as rooftop gardens, vertical gardens and green walls (where climatically appropriate) can reduce energy consumption, stormwater runoff and air pollution. Green roofs in high density urban areas can provide respite and enhance community wellbeing.

Benefits of community gardens include improved social connection, production of local food and learning new skills such as living sustainably and caring for the local environment.

Space for community gardens should be located, sized and designed to be functional, safe and well connected with public streets or public open space. Consider climate and aspect including solar access, wind effects, noise and odours.

Figure 35. The Joondanna Community Food Garden provides social connection and food produce for the local community.

OBJECTIVE

O3.4 To ensure the public realm is designed to be inclusive, safe and accessible for different users and people of all ages and abilities.

CONSIDERATIONS

C3.4.1 Develop legible routes and intersections, connected by identifiable landmarks to aid navigation through the public realm.

GUIDANCE

Public realm design, including streetscape should consider the provision of visual cues to assist navigation. For example, a landmark or feature, streets, signage or entry statements.

C3.4.2 Accommodate and promote inclusion and accessibility for people of all ages and abilities in the public realm.

GUIDANCE

Designing the public realm to appeal to users with varying interests, cultural needs and abilities will provide the most benefit to the community.

Using universal design principles in public realm design ensures that streets and public spaces are accessible to everyone, regardless of their ability.

Accessibility can be enhanced by ensuring pathways are well lit, wide and obstacle free, and by demarcating different levels of movement and activity using surface treatments, including colour and texture, and plants to define edges of spaces.

Figure 36. Landmarks and signage can assist with navigation and wayfinding in a busy urban environment.

Figure 37. The Fremantle Esplanade Youth Plaza is a public space accessible by all ages and abilities.

DESIGN ELEMENT 3: **PUBLIC REALM**

C3.4.3 Design the public realm according to the principles of Crime Prevention through Environmental Design (CPTED).

GUIDANCE

CPTED or Crime Prevention through Environmental Design is based on the idea that peoples' behaviour within the urban environment is influenced by the design of that environment. Public realm affects both the likelihood of crime occurring in the area, as well as community perception about their safety and security.

Some CPTED principles that apply to the public realm include:

- ensure clear sightlines to public realm spaces and streets from adjacent buildings
- strategic footpaths and cycleways to be in view of adjacent land uses
- ensure primary activity areas and pedestrian routes are well-lit
- locate land uses that can promote passive surveillance wherever possible.

Refer to *Designing out Crime Planning Guidelines* (WAPC, 2006).

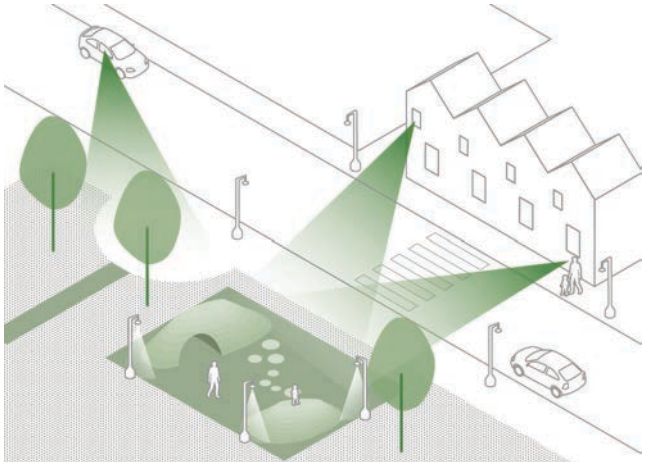


Figure 38. Passive and active surveillance of the public realm improves safety and can deter crime.

OBJECTIVE

O3.5 To ensure public realm design is integrated with the built form, movement network and landscape of the precinct.

CONSIDERATIONS

C3.5.1 Design well-proportioned and appropriately scaled public spaces and streets.

GUIDANCE

Public spaces should be proportioned and scaled to fit with the urban context of the location and precinct type, and be appropriate for the function of the space.

Smaller public spaces can feel more intimate than large open areas and may provide the opportunity for respite from busy streets and public spaces. Bigger spaces allow for larger group gatherings and activities, and may require internal definition of activity zones to retain human scale.

Street widths should be determined relative to intended building height and street function to ensure human scale.

C3.5.2 Consider and enhance relationships between the public realm and surrounding land uses and activities to create mutual benefit.

GUIDANCE

A well-considered relationship between built form and land uses, development intensity and the adjacent public realm can bring significant co-benefits. A high-quality public realm that incorporates walkable streets and public spaces has measurable economic, social and safety value.

To take full advantage of investment in the public realm, an assessment of the type of land uses and intensity of development nearby is required, along with consideration of how the public realm should be designed to support the intended activity and function of the precinct.

For example, a public plaza or square will be well used when surrounded by active retail, food and beverage outlets and community services such as a library, while providing an appealing outlook for the cafes and restaurants.

It is important to also consider the relationship between the public realm and intended built form, to ensure the public space is proportionate in size and that appropriate space is provided for pedestrian movement and landscaping on street frontages.

Figure 39. Mary Street Piazza is an example of a small public space that creates an active hub for the community.

DESIGN ELEMENT 3: **PUBLIC REALM**

CONSIDERATIONS

C3.5.3 Design the public realm as a series of well-connected, legible spaces.

GUIDANCE

Establishing well-connected public spaces is a way of integrating the public realm with the landscape, movement network and built form of the precinct.

When undertaking review and needs assessment for the public realm consider it holistically as a network of linked public spaces, and identify opportunities to provide high quality connections between public spaces, and with privately provided communal or open space.

This approach can identify opportunities for linked walking and cycling routes that incorporate the green network and movement network by promoting active transport to and through the precinct.

C3.5.4 Integrate services and utilities to minimise impact on function and amenity of public spaces, streets and surrounding built form.

GUIDANCE

The location, design and management of services and utilities in the public realm should complement the activities, function and place character of the location.

Where possible, services, utilities and other infrastructure should be integrated with the public realm design to minimise possible impacts; and ensure the intended function of the space is not compromised.

Early engagement with relevant utility and service providers is recommended to establish requirements for the precinct.

Figure 40. Walking and cycling routes that incorporate the green network can provide comfortable and enjoyable experiences.

Figure 41. This services cabinet at RAC Arena has been designed to reference the adjacent building and landscape design.

PRECINCT PLAN OUTPUTS

The precinct plan outputs will vary depending on precinct type and complexity. Not all outputs will be relevant to every precinct.

Public realm landscape plan showing type and hierarchy of open and public spaces (existing and proposed) including:

- outcomes of a public space audit/ community needs assessment
- conceptual illustrations showing design of public open spaces, including streetscapes, civic squares and paved open pedestrian spaces
- the green network and streetscape cross-sections inclusive of landscaping detail.

Tree management strategies documenting retention of mature trees, new tree planting (including tree species) and required deep soil areas

A **water management plan or strategy** (if relevant) or **Water Sensitive Urban Design strategies** that:

- demonstrate stormwater management through water sensitive urban design within the green network, public open spaces and street reserves
- consider sustainable options for landscape irrigation, including using waterwise plant species and urban water reuse

Diagram illustrating solar access and weather protection (sun, rain and wind) responses within the public realm.

Street/road cross sections that illustrate the incorporation of utilities and services into the public realm while retaining the functions of surrounding public spaces, streets and built form.

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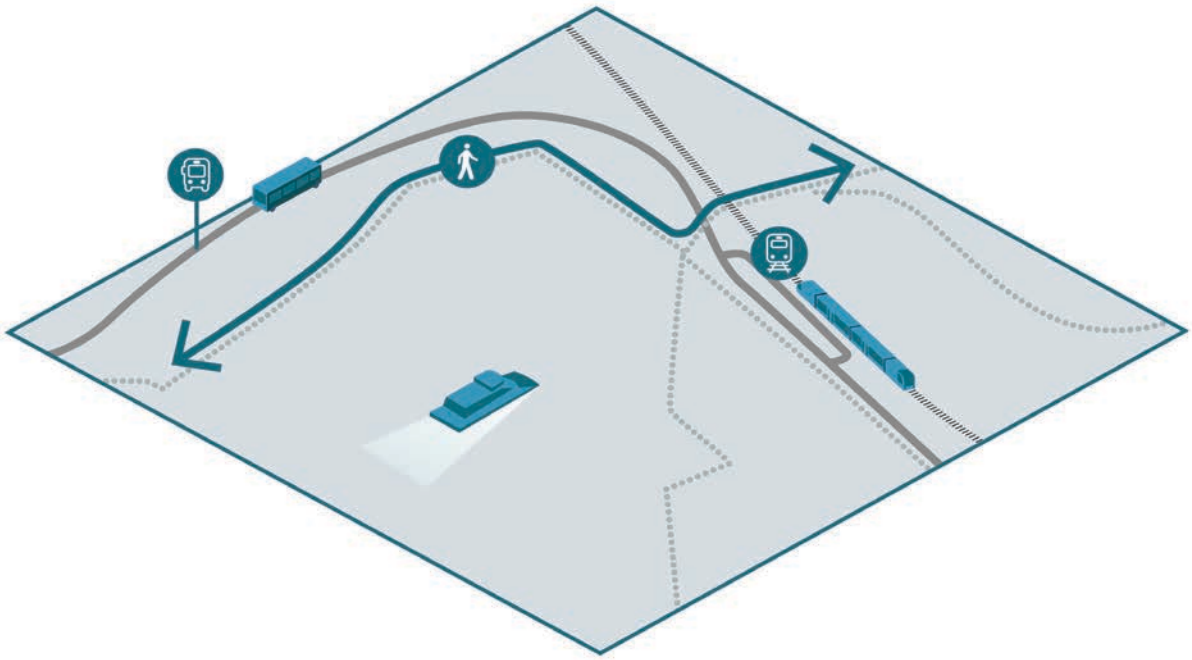
DESIGN ELEMENT 4: MOVEMENT

INTENT

A well-integrated movement network should be developed that responds to the identified movement and place function of the precinct and that provides for a range of transport modes including walking, cycling, public transport, on-demand services, cars and delivery vehicles.



DESIGN ELEMENT 4: **MOVEMENT**

OBJECTIVE

O4.1 To ensure the movement network supports the function and ongoing development of the precinct.

CONSIDERATIONS

C4.1.1 Address the current and future access needs of the precinct through an integrated transport planning and land use assessment process.

GUIDANCE

Understand the access needs of the precinct. Assess the existing and proposed transport network within the precinct to meet those needs with respect to accessibility, movement and safety for all modes.

Engage with road and transport agencies as early as possible to identify the strategic context and evaluate the level of transport integration between the precinct plan area and the surrounding area.

Refer to *Guidelines for preparation of integrated transport plans* (WAPC, 2012) and *Transport Impact Assessment (TIA) Guidelines* (WAPC, 2016) for further information.

Figure 42. Consider the access needs of all modes when planning the movement network of a precinct.

C4.1.2 Design the movement network in balance with place considerations, local access and neighbourhood/district/regional access requirements for travel to, through and around the precinct.

GUIDANCE

Identify and establish the hierarchy of functional transport routes: for example, arterial, primary and secondary distributor, and local access roads; and primary, secondary, local, training and tourist cycle routes appropriate to the function and character of the place.

Consider the movement network of the precinct using Movement and Place principles:

- The movement role of a street or road aims to provide a through path with minimum disruption and a seamless connection from the beginning to the end of the journey that is designed to minimise travel time.
- The place role recognises that streets and roads are places and destinations in their own right: locations where activities occur on, or adjacent to, the street. They often have significant foot traffic where pedestrians are not just passing through but are spending time engaging in a wide variety of activities.
- Movement and Place principles seek to agree the appropriate balance between the movement aim ('minimising travel time') and the place aim ('stay to spend time') in order to contribute to overall positive outcomes for the precinct.

C4.1.3 Develop a movement network that enables convenient and comfortable travel and access for users of all ages and abilities.

GUIDANCE

The movement network should be designed according to universal design principles and be safe and convenient for all users. Undertaking an accessibility audit of existing roads and streets will help identify priority locations for infrastructure upgrades required to meet acceptable standards of accessibility. This should consider users of all ages and abilities (for example, children, seniors, cyclists) and support the long-term vision for the precinct.

Consider 'self-explaining' street design, to assist users understand different types of roads and streets, what speeds are appropriate, and which transport modes have priority within each route. This approach promotes safer behaviour and fosters more liveable communities.

The Safe Active Streets program is part of promoting safer speeds via street design in residential areas to ensure safety for pedestrians and cyclists.

Figure 43. Safe Active Streets are designed to promote low vehicle speeds, prioritise cycling and enhance safety.

C4.1.4 Design transport infrastructure that provides a safe network for all users.

GUIDANCE

Incorporate Safe System principles into the planning and design of transport infrastructure. Street design and operation should ensure that safe vehicle speeds are achieved. Refer to Road Safety Commission: https://www.rsc.wa.gov.au/Safe-System for further information.

The transport network within precincts should be designed in accordance with Crime Prevention through Environmental Design (CPTED) principles.

Figure 44. The Safe System Approach is based on four guiding principles to ultimately eliminate road deaths and serious injuries.

DESIGN ELEMENT 4: **MOVEMENT**

OBJECTIVE

O4.2 To ensure a resilient movement network that prioritises affordable, efficient, sustainable and healthy modes of transport.

CONSIDERATIONS

C4.2.1 Prioritise walking, cycling, public transport and shared mobility, to minimise car dependency.

GUIDANCE

The movement network should be planned and designed in consideration of the following priorities:

1. Walking

Promoting walking as a key mode of transport requires strategies to improve walkability on priority walking routes (refer to C4.3.1).

2. Cycling

Promotion of cycling as a key mode of transport, as well as supporting opportunities for exercise and recreation, requires the provision of safe and connected cycle infrastructure that meets the needs of users of all ages and abilities (experienced, less-confident, and inexperienced cyclists) (refer to C4.3.2).

3. Public transport

The design of the precinct should provide ease of public transport access between homes, workplaces and other key locations. Good pedestrian links should be provided to bus stops and train stations located within and near the precinct (refer C4.3.3 and C4.3.4).

4. Delivery and service vehicles

Providing appropriate access for delivery and service vehicles is critical to the function and safety of the precinct, and must balance the potential impact on amenity and safety with service efficiency (refer C4.3.5).

5. On-demand transport

Facilities to support on-demand transport such as taxis, app-based booking service providers, charter buses or vehicles should be considered and appropriately located within the precinct.

6. Private vehicle

Designing the movement network for private vehicles should consider appropriate speeds and access requirements, with a focus on protecting vulnerable road users (refer C4.3.6).

C4.2.2 Establish mode share targets for the precinct.

GUIDANCE

Identify the existing/predicted mode share for the precinct (based on the current and planned capacity of the movement network) and a desired mode share based on the vision for the precinct. Where there is misalignment between the forecast and desired mode share, develop targets and strategies to deliver the preferred mode share.

It is critical to remember that the movement network is multi-modal. A focus on facilitating private vehicles can marginalise the provision for other modes, limiting their uptake and increasing the difficulty of meeting mode share targets. Adopting a 'vision and validate' methodology for all transport modes can assist in providing a more balanced system that will encourage the adoption of preferred modes.

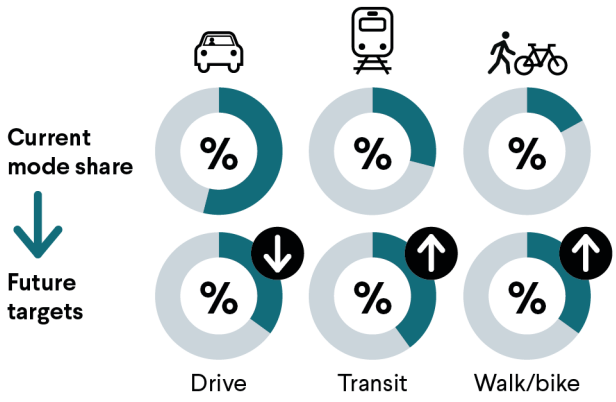


Figure 45. Mode share targets and strategies should be developed to deliver the preferred mode share.

OBJECTIVE

O4.3 To enable a range of transport choices that meet the needs of residents, workers and visitors.

CONSIDERATIONS

C4.3.1 Prioritise provision of direct and legible pedestrian routes within the precinct and to adjacent areas.

GUIDANCE

Pedestrian networks should be planned to:

- provide safe and convenient access
- minimise walking distances between key locations and public transport nodes
- provide appropriate pedestrian crossing facilities on busy roads
- provide shaded footpaths on most streets, preferably on both sides.

Where pedestrian movement is a priority, consider the provision of:

- wide paths without obstructions
- conveniently located crossing points
- short crossing distances at intersections which also slow down turning vehicles
- traffic calming to reduce vehicle numbers and speeds
- shade and weather protection.

Where there are high numbers of pedestrians and low vehicle movements (for example ‹3500 vpd) and speeds, consider creating a 'Shared Zone'.

Figure 46. A pedestrian-friendly space for cars, cyclists and people to share has been created in Leederville.

C4.3.2 Provide a bicycle network within the precinct that integrates with the broader cycle network and connects safely and conveniently to key destinations.

GUIDANCE

Providing a high-quality, well-integrated and safe bicycle network promotes the choice of cycling as a mode of transport, in addition to supporting cycling for exercise and/or recreation.

It is important that cycle infrastructure design caters for users of all ages and abilities from beginners through to experienced cyclists.

A place-appropriate cycle network should be developed that connects to the wider network and prioritises routes to key destinations.

Where high levels of pedestrian and cycle activity are predicted, install separated paths for each of the pedestrian and bicycle movements.

Engagement with the Department of Transport early in the planning process is recommended.

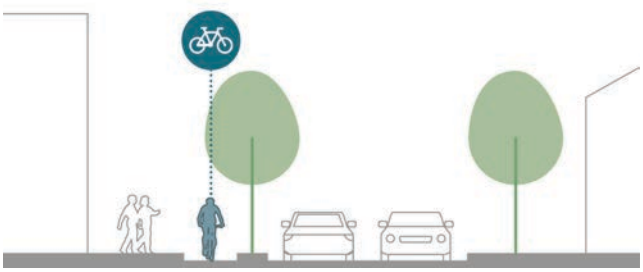


Figure 47. Design cycling infrastructure to be safe and appropriate for the precinct type.

DESIGN ELEMENT 4: **MOVEMENT**

C4.3.3 Identify public transport services and infrastructure to be upgraded or established to improve coverage, frequency, connection and user choice.

GUIDANCE

Consultation and engagement with the Public Transport Authority (PTA) early in the planning process is recommended to enable effective establishment, modification or upgrading of the public transport network. This may include liaising with PTA to identify or relocate bus stop locations, services, and/or routes, or planning for station precinct public transport integration.

Use mode share targets to inform potential public transport requirements for the precinct.

C4.3.4 Design public transport infrastructure to integrate with and be appropriate for the intended mode share, patronage and place character of the precinct.

GUIDANCE

Public transport infrastructure design should support the precinct vision and function. Different approaches will be appropriate for different precinct types and for the location and role of the station/stop on the network. Engagement with PTA to plan for appropriate integration is required from the early stages in the process.

Depending on their strategic importance in the network, entries to railway stations, bus stations and transport interchanges should be designed as a key part of the public realm and movement network. This includes the potential opportunity for community involvement with public art, landscape design and place planning to ensure these public spaces reflect the precinct's character.

Figure 48. Public transport services and infrastructure may need to be upgraded to adequately serve the precinct.

Figure 49. The entrance to Wellard Station is a key feature of the public realm and provides easy access to and from the surrounding precinct.

C4.3.5 Consider access requirements for service vehicles and logistical freight movements within the precinct.

GUIDANCE

The design of the movement network should ensure that service and freight vehicles can enter and exit the precinct appropriately, and potentially only along the appropriate nominated routes.

Consideration is to be given to the quantity, type and size of vehicles required to service the land uses in the precinct and their potential impact on local community amenity, pedestrians and cyclists. This could include delivery vehicles, waste vehicles and other utility vehicles.

C4.3.6 Design the movement network to allow for private vehicle access and movement that is appropriate to the precinct function.

GUIDANCE

Within the core of precincts and other appropriate locations such as main street environments, vehicles should be slowed or discouraged from entering to create a safer and more pleasant environment for pedestrians and cyclists.

This could include 'low traffic precinct' design interventions, such as:

- Modal filters (filtered permeability) which limit vehicular access but still permit pedestrians and cyclists through, and potentially delivery or service vehicles
- Slowing traffic speeds through street design treatments, indirect street links, priority pedestrian crossings, protected on-road cycle lanes, parklets, pavement/material choice and place activation.

Figure 50. Street design treatments can be effective in slowing traffic speeds and creating pleasant main street environments.

DESIGN ELEMENT 4: **MOVEMENT**

OBJECTIVE

O4.4 To ensure the quantity, location, management and design of parking supports the vision of the precinct.

CONSIDERATIONS

C4.4.1 Provide the minimum amount of car parking appropriate for the precinct.

GUIDANCE

The amount of car parking provided should be determined in consideration of the mode share target, and modal hierarchy to support the function of the precinct.

Undertake an audit of the existing parking supply, occupancy rates and patterns of use, and use the findings to identify opportunities for more efficient use. Where appropriate, consider a parking strategy for the precinct that enforces upper limits on parking.

C4.4.2 Manage and locate car parking to prioritise access according to the needs of different user groups.

GUIDANCE

Consider reciprocal car parking opportunities where different land uses have differing parking patterns of use. This should be reviewed individually in the context of the precinct and the target mode share to identify whether parking is required, and if so, how much and in what form.

Locate and consolidate parking to enable 'park once' precincts where drivers can park once to access multiple locations on foot. Shared off-street parking provided on the periphery of walkable precincts can assist.

Manage the on-street parking within the precinct. Consider the provision of 'short stay parking' bays and accessible parking bays (available for ACROD parking permits) in convenient locations. Provide a safe space for passenger drop-off and pick-up, including coach parking, where appropriate. These bays should be carefully planned with regard to number and location.

Figure 51. The amount, location and management of car parking can have a significant influence on the design of a precinct.

C4.4.3 Design parking to be integrated with the urban form.

GUIDANCE

Consider the location and quantity of on and off-street parking within the precinct and how it can contribute to or detract from the urban form.

Parking facilities should be located, designed and/or landscaped so that they do not visually dominate frontages to streets or other public spaces. Investigate locating parking at the rear of commercial and mixed use lots to allow buildings to front and address the streetscape.

Access to, from and within car parks should be safe, direct, and well-lit with passive surveillance such as windows from buildings overlooking car parks, in accordance with CPTED principles.

C4.4.4 Design parking for adaptability over time to accommodate potential future change of use.

GUIDANCE

Parking demand assessment should consider emerging technologies and required supporting services such as demand for electric vehicle charging stations.

When locating parking facilities, consider how potential future adaptation might be integrated into the public realm. Examples of repurposing car parking can include replacing car parking bays as parklets, seating and local planting spaces, while larger scale off-street car parks can be transitioned into community focussed green spaces, social spaces and community hubs.

Consolidated parking can make future adaptation easier to achieve.

Figure 52. Car parking should be well-landscaped, accessible and contribute to a pleasant urban environment.

Figure 53. On-street parking bays can be repurposed, either temporarily or permanently, for seating, dining and other uses.

C4.4.5 Consider parking requirements and end of trip facilities for other transport modes.

GUIDANCE

Parking for bicycles, motorcycles, scooters, ride sharing, mobility scooters and other vehicles should all be considered in the context of the precinct's environment, character, purpose and mode share targets.

End of trip facilities should be provided to cater for and promote cycling within commercial/mixed use, residential and community developments such as showers, change rooms and lockers.

Figure 54. Secure cycling parking at a residential train station.

PRECINCT PLAN OUTPUTS

The precinct plan outputs will vary depending on precinct type and complexity. Not all outputs will be relevant to every precinct.

Transport Assessment including an analysis of the performance of the local street and district/regional network that identifies capacity/surplus and maps main points of arrival and key sites

Modal Hierarchy plan noting the vehicular, walking, cycling and public transport network (Metropolitan Long-Term Cycle Network or Regional Cycle Strategy and PTA planned public transport network) and form and function of each part of the network

Develop **mode share targets** and a strategy to achieve a desired mode share for the precinct

Parking supply and management plan that considers a range of policy options such as parking caps or time restrictions and includes efficiency measures such as reciprocal/common user parking and the location and management of parking supply

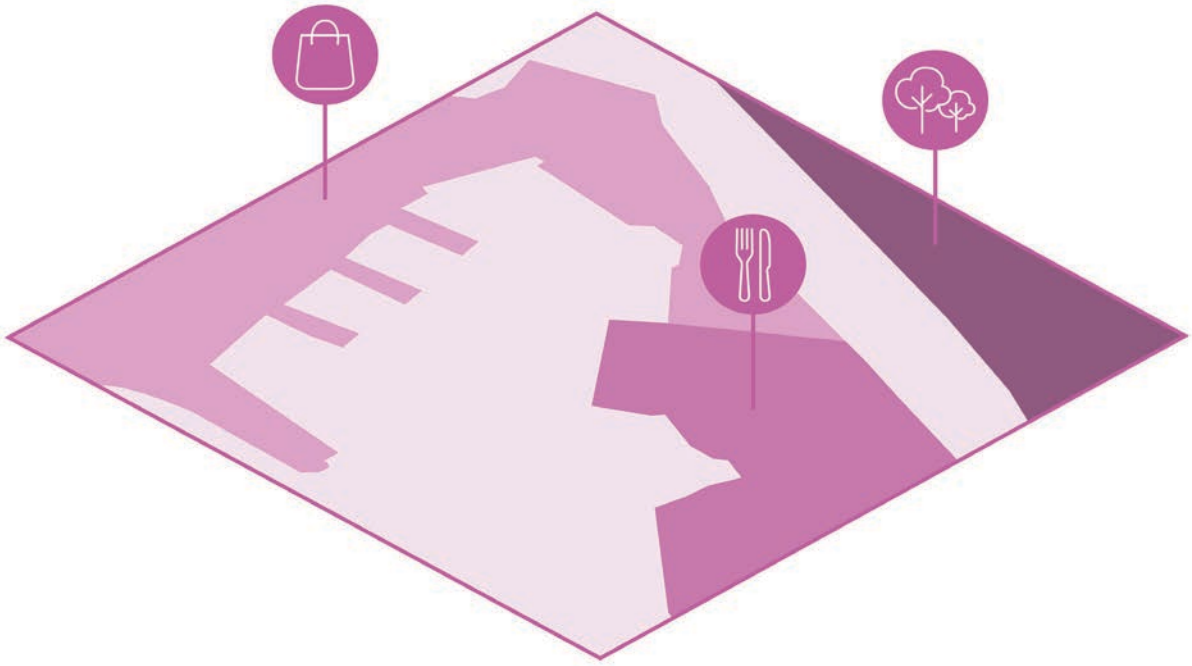
Prepare **street/road cross sections** and **intersection upgrades/treatments** that show how street reserves and intersections will accommodate movement for all modes appropriate to the street/road function, together with on-street parking (where relevant), utility services and street trees

DESIGN ELEMENT 5: LAND USE

INTENT

Land use planning should reflect the role of the precinct in its wider context. Land use type, proportion, mix and location should respond to community needs; current and intended future activities and functions, alongside broader trends.

Diverse and adaptable land uses will support improved place outcomes, social interaction, civic engagement and access to goods, services and employment.



DESIGN ELEMENT 5: LAND USE

OBJECTIVE

O5.1 To ensure current and planned land uses respond to the needs and expectations of the community.

CONSIDERATIONS

C5.1.1 Review existing zonings and land uses within and adjacent to the precinct to identify gaps and determine the appropriate zones and land use mix.

GUIDANCE

Precincts should have appropriate zonings and a mix of uses to encourage vibrant, diverse, interactive and safe places. The diversity and mix of land uses will vary from precinct to precinct.

Identification of appropriate land uses may require a Needs Assessment (refer to draft SPP 4.2 Activity Centres, WAPC 2020).

C5.1.2 Consider the current and future need for services, utilities and social infrastructure, including community, civic and cultural facilities.

GUIDANCE

Identify land requirements of services and utilities to meet the needs of the community over time and support the intended development intensity of the precinct.

An assessment of existing social infrastructure, for example: schools, community facilities and libraries in the locality/ neighbourhood, can help identify the need and appropriate location for new infrastructure or enhancements to existing facilities relative to the scale and type of precinct.

Figure 55. Zoning and land use mix should be appropriate to the intended precinct character and function.

Figure 56. Community facilities provide important services and may need to be upgraded as part of precinct development.

C5.1.3 Identify locations for staged land use transition to meet changing community needs.

GUIDANCE

Existing zoning may include land uses that will be incompatible with the future intent of the precinct. Planning for change in these areas is important to ensure a smooth transition.

Some development sites within precincts may need interim land uses and transitional activities to support staged implementation. In the short term, key strategic sites could be developed for other interim uses that do not preclude redevelopment for higher densities or other uses in the future.

DESIGN ELEMENT 5: LAND USE

OBJECTIVE

O5.2 To ensure the planned land use types contribute positively to the precinct character and amenity.

CONSIDERATIONS

C5.2.1 Co-locate land uses that have a mutual, positive benefit.

GUIDANCE

Apply zoning and land use controls that are compatible with the precinct type. Depending on the precinct type, it may be appropriate to identify character areas (or sub-precincts) with a mix of complementary land uses.

C5.2.2 Locate and distribute land uses to manage amenity impacts such as noise, visual and air pollution.

GUIDANCE

Sites and land use zones with potential for land uses that result in adverse amenity impacts should be identified and addressed to avoid conflict. Introduce appropriate interfaces, transition zones or buffers where required.

Figure 57. Northbridge has a mix of land uses that contribute to a specific identity and character.

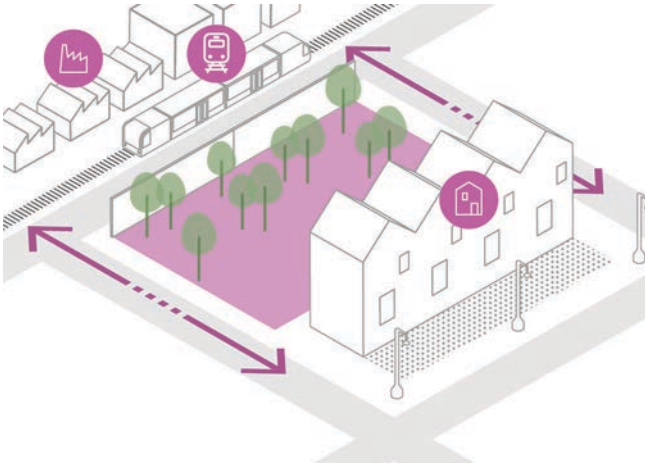


Figure 58. A transition zone or buffer can avoid potential land use conflict.

C5.2.3 Distribute land uses across the precinct to support and benefit from the movement network.

GUIDANCE

Major trip-generating land uses (such as major retail, office and other employment land) should be in locations that are most accessible by walking, cycling and public transport.

Create points of interest and establish activities along key pedestrian routes to facilitate ease of wayfinding within the precinct.

Co-locate public transport nodes with active uses and public spaces to help increase public transport patronage and improve safety.

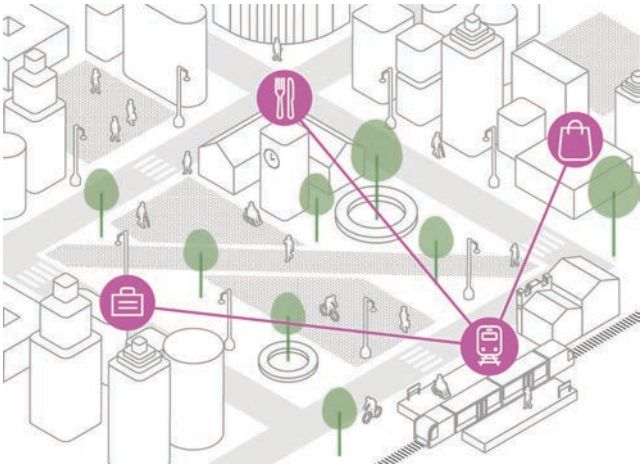


Figure 59. Land uses should support and benefit from the existing and planned movement network.

DESIGN ELEMENT 5: LAND USE

OBJECTIVE

O5.3 To achieve a mix of land uses and activity that supports the precinct vision.

CONSIDERATIONS

C5.3.1 Determine the appropriate land use mix for the precinct.

GUIDANCE

Identify the mix of land uses (both land use type and spatial arrangement) that will best support and complement the character, diversity and intended activity of the precinct.

A mix of uses such as various housing types, community facilities, commercial and business uses, as well as public spaces can encourage community diversity, social interaction and walking and cycling.

Consider land use mix horizontally and vertically across the precinct. Precinct vibrancy can be promoted by prescribing a vertical and horizontal mix of compatible land uses, including placing active uses at ground level to activate the public realm.

Figure 60. A mix of land uses at ground level and in upper stories of buildings can contribute to precinct diversity.

C5.3.2 Determine the appropriate distribution of residential density to support the intended character and function of the precinct.

GUIDANCE

Locate higher residential densities within and adjacent to activity centres, along key public transport routes, and near places of high amenity. Provide for a transition between areas of high residential density and low density areas.

For activity centre precincts, assess the housing densities required within the walkable catchment to meet the residential density targets in draft SPP 4.2 Activity Centres (WAPC, 2020).

Figure 61. Identify and distribute residential densities to support the precinct function.

DESIGN ELEMENT 5: **LAND USE**

C5.3.3 Provide for land uses that appropriately activate and promote safety in the public realm.

C5.3.4 Identify a land use mix that supports local employment and the local economy.

GUIDANCE

Concentrating active uses into continuous frontages at ground level helps build centres of activity and vibrancy, and creates safe, active streets.

Locating retail and services along human-scale streets facilitates social interaction and enhances safety with natural surveillance.

GUIDANCE

For activity centre precincts, identify employment sectors and estimate the number and types of jobs provided to help determine zoning and land use requirements.

Supporting opportunities for small-scale and home-based businesses and live-work housing can build local economies and reduce the need to travel for work.

Figure 62. Retail and services businesses along pedestrian-friendly streets facilitates interaction and creates vibrancy.

PRECINCT PLAN OUTPUTS

The precinct plan outputs will vary depending on precinct type and complexity. Not all outputs will be relevant to every precinct.

Zoning and land use map identifying and mapping:

- existing and proposed land use zones and preferred land uses (including vertical zoning where applicable)
- potential land use compatibility, including any interface/buffers required

Density plan identifying and mapping opportunities for:

- higher-density residential development
- variety of housing typologies; and
- mixed use development

Staging plan for proposed land use showing short, medium and long-term development outcomes. Identify any catalyst projects and how they contribute to the development of the precinct over time

Spatial economic and employment plan detailing:

- existing and planned economic drivers
- the location of employment provided across the precinct
- employment table setting out the expected job yield in the precinct, space requirements for different employment types and the number of expected jobs to be generated

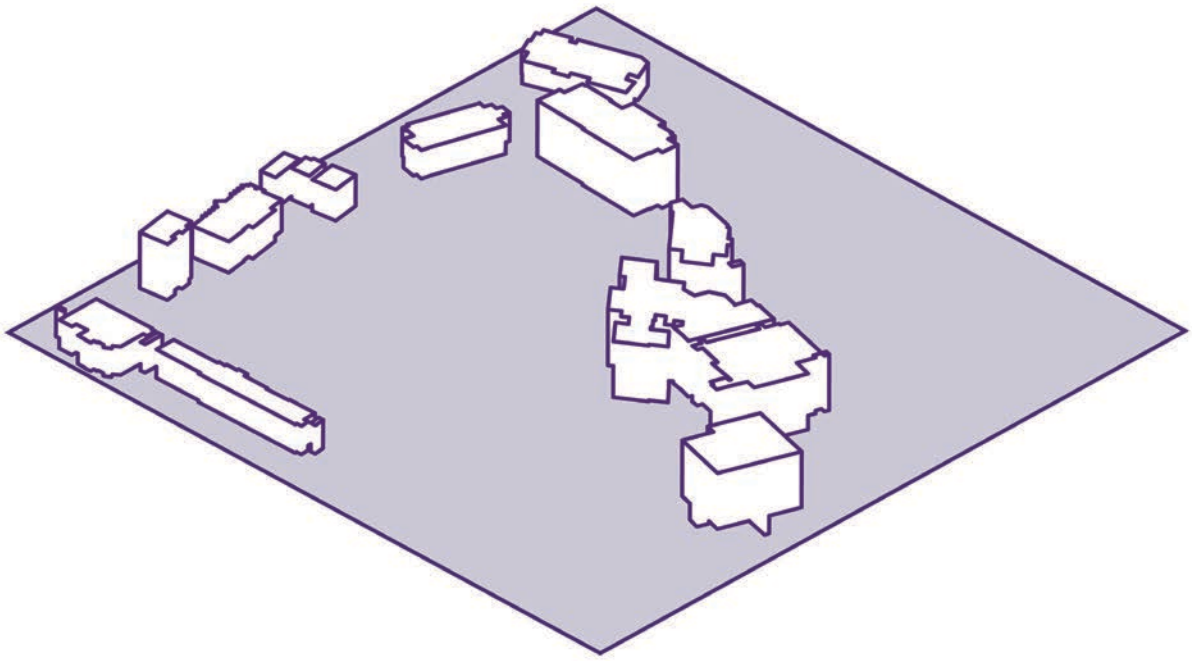
Community facilities and services report identifying required community and services (existing and proposed) and the residential catchment they will service

DESIGN ELEMENT 6: BUILT FORM

INTENT

The built form should be developed to support a precinct environment that is place and functionally appropriate in character, intensity, bulk and scale.

The built form should provide choice and affordability in housing; and support the critical mass of residents, workers and visitors required to sustain thriving local businesses and required service delivery, including public transport.



DESIGN ELEMENT 6: **BUILT FORM**

OBJECTIVE

O6.1 To ensure that the built form is responsive to the purpose, context and intended character of the precinct.

CONSIDERATIONS

C6.1.1 Address how the precinct built form will respond to the physical and cultural characteristics of the precinct.

GUIDANCE

The built form should be appropriate to the scale, function and context of the precinct in consideration of:

- topography and important views
- the local urban morphology (pattern of streets and blocks)
- building proportions, scale and heights
- intended future precinct character
- scale and design of the public realm (including streets).

Use high-quality built form precedents as benchmarks for guiding future development. Referring to local or other appropriate built form precedents, can assist in the development of place-responsive design.

C6.1.2 Manage the built form transitions between and within the precinct.

GUIDANCE

It is generally appropriate to provide a transition in scale from larger-scale built form to adjacent areas of smaller scale built form (particularly residential areas) by stepping buildings down towards interfaces. Planning for transition areas should recognise the future intended built form in the interface zone, not just existing development.

Figure 63. Design for built form transitions within the precinct and between the precinct and adjacent areas.

C6.1.3 Promote a diversity of built form types appropriate to the precinct.

GUIDANCE

Providing a diversity of built form types across a precinct has many benefits. It can bring visual variety and interest with the opportunity to frame streets with more substantial buildings and stepping down to lower height buildings or open spaces where appropriate. It also ensures that different built form types are available to suit land use requirements, functions and activities.

For residential areas, a diversity of built form types (for example, single detached houses, terraces, apartment houses and apartment buildings) can support housing choice and affordability. The range of built form types required for the area should be determined according to the intended development intensity and character of the area, and be supported by appropriate block and lot sizes.

Figure 64. A diversity of built form types can provide choice and affordability in housing.

C6.1.4 Identify buildings with potential for retention and adaptive resuse (including temporary use) with a priority on heritage buildings and buildings that contribute to place character.

GUIDANCE

Undertaking a heritage and/or built character audit with a focus on potential for adaptive reuse is recommended for identifying a range of opportunities to enhance the place character of the precinct. Consider how existing buildings and/or structures contribute to the character of a precinct and how these may be maintained, rehabilitated and adapted for reuse consistent with the precinct vision.

Figure 65. This old service station has been retained and converted for food and beverage uses.

DESIGN ELEMENT 6: **BUILT FORM**

OBJECTIVE

O6.2 To ensure building placement, scale and massing is appropriate for the intended precinct and streetscape character.

CONSIDERATIONS

C6.2.1 Set height controls to ensure buildings within a precinct have a positive impact on the surrounding streetscape and public spaces.

GUIDANCE

Building height controls guide the intended scale of streetscapes, moderate impacts on microclimate (such as overshadowing and wind tunnels) and establish the relationship with other buildings and the street.

Determining the appropriate building heights for a precinct requires careful consideration. Heights will vary according to the place type and urban context, with heights generally decreasing as the streetscape character changes from urban to suburban.

When setting height controls, consider:

- testing height in tandem with plot ratio to ensure the settings are well aligned
- relating height to features within the existing streetscape or locality such as topography or heritage places
- whether a built form transition is appropriate along the interface edges of the precinct
- potential impact on local amenity, including overshadowing and wind tunnel effect.

Heights should be expressed in storeys relative to natural ground level.

C6.2.2 Develop setback controls in consideration of the intended relationship between buildings, and between buildings and the street.

GUIDANCE

Setback controls are the other primary planning mechanism used to control the bulk and scale of new development.

The way that buildings relate to the street and other buildings will vary according to the place type and urban context, with setbacks generally increasing as the character changes from urban to suburban.

Setback controls should be established to:

- help define the intended future streetscape character
- align with existing development where appropriate (for example, to suit existing heritage character)
- facilitate adequate separation between neighbouring properties
- maintain views and curtilage to significant buildings or public spaces
- retain significant trees
- provide articulation of building frontages where needed to avoid visual monotony and create interest.

Consider deeper setbacks for upper levels of tall buildings to create a pedestrian scale at street level.

Figure 66. Building heights have a significant influence on the character and function of a precinct.

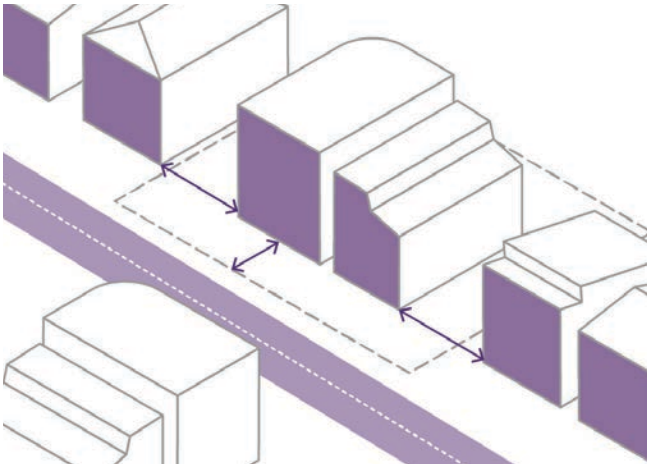


Figure 67. Setbacks are an important part of defining precinct character.

C6.2.3 Apply built form envelopes to define the streetscape and reinforce the precinct character.

GUIDANCE

Built form envelopes are a three-dimensional representation of height and setback controls that illustrate the maximum allowable development extent on a site.

Built form envelopes are defined by building height limits, and setbacks from the street, and side and rear boundaries. They should be developed in consideration of:

- landscape character and tree protection
- stormwater management requirements
- desired streetscape and place character
- significant views and sightlines
- solar access and natural ventilation
- transition between different land uses or intensity of use
- proposed lot sizes and configuration.

Site or lot specific building envelopes within a precinct may be refined at more detailed planning and design stages – for example, as part of a local development plan or during the design development phase (prior to lodgement of a development application).

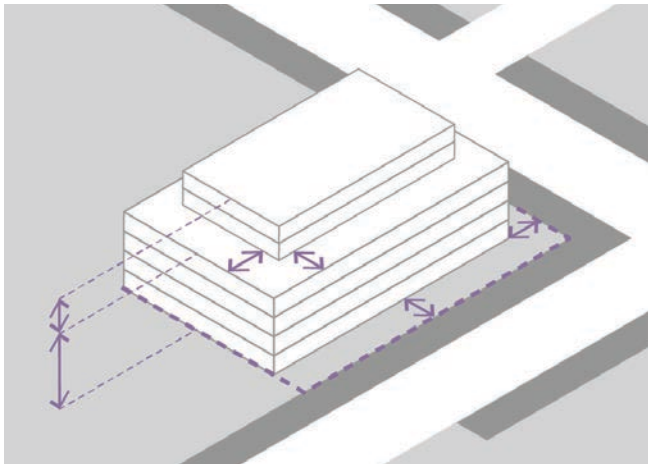


Figure 68. The built form envelope establishes a three-dimensional boundary within which development may occur.

C6.2.4 Determine plot ratio controls appropriate for the existing or intended future character of the precinct, where relevant.

GUIDANCE

Plot ratio establishes an allowable volume of development within the 'container' of the building envelope. It sets the building massing for development by site and across the precinct.

Consider how plot ratio is applied across individual sites and the precinct. Test desired built form outcomes against the proposed plot ratio to ensure it is coordinated with the building envelope, height, setbacks and other site requirements.

Where both residential and non-residential uses are proposed, develop plot ratio controls that consider the distinct plot ratio definitions and requirements for each use.

DESIGN ELEMENT 6: **BUILT FORM**

OBJECTIVE

O6.3 To ensure that built form design reduces energy demand across the precinct by facilitating climate-responsive design.

CONSIDERATIONS

C6.3.1 Locate and arrange buildings to optimise solar access to buildings and the public realm.

GUIDANCE

Appropriate consideration of building orientation, layout and siting can directly affect the thermal performance, comfort and amenity of the building, and have an impact on neighbouring buildings and spaces.

Buildings should be sited to balance optimum solar orientation for the building with streetscape and character requirements and to limit overlooking, overshadowing and significant amenity impacts on neighbouring properties where required.

Providing adequate building separation will allow for daylight and solar access for neighbouring buildings and spaces. Built form envelopes can illustrate how overshadowing of public spaces and nearby development has been considered.

C6.3.2 Consider the placement and layout of buildings to optimise natural ventilation and minimise wind impact at street level and on adjoining properties and public spaces and streets.

GUIDANCE

Consider the interaction between buildings and prevailing winds to optimise natural ventilation within and around buildings for occupant comfort and amenity. Building placement, orientation and separation can influence air movement and natural ventilation within and between buildings and adjacent spaces, and should be determined in consideration of the climate, microclimate and local site conditions.

The size, shape, surface treatment and articulation of buildings can also have an impact on influence wind effects at street level. An analysis of the airflow impact of tall buildings on public spaces and streets should be used when appropriate to inform the design of building envelopes and guide detailed building design.

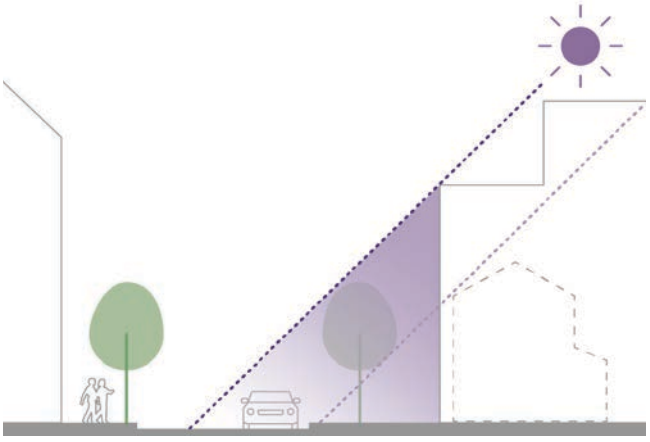


Figure 69. Building placement and orientation should optimise solar access and limit overshadowing for the public realm.

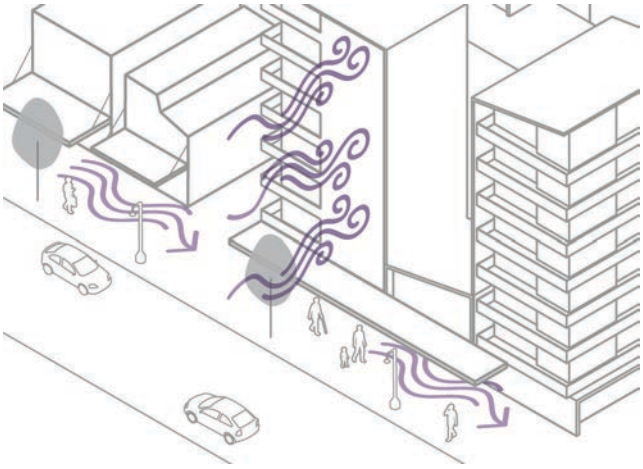


Figure 70. Consider prevailing wind direction in relation to the placement, size and shape of buildings.

OBJECTIVE

O6.4 To ensure that built form design is responsive to the streetscape and contributes to a safe and comfortable public realm.

C6.4.1 Design and setback buildings to enable passive surveillance and outlook to the street.

GUIDANCE

Indicate active frontages of buildings and how entries and windows of buildings could overlook adjacent streets and public spaces to establish an active and attractive street edge.

The precinct built form should be designed in accordance with Crime Prevention through Environmental Design (CPTED) principles.

C6.4.2 Design for weather protection for pedestrian priority streets and public spaces, where appropriate.

GUIDANCE

Indicate where weather protection may be needed on existing and proposed buildings within the precinct, and for priority locations within public spaces. Awnings can provide protection from sun, wind and rain at street level. Where shelters are being considered in public spaces, consider the prevailing wind direction, solar access and shade, as well as outlook and accessibility in detail design and siting.

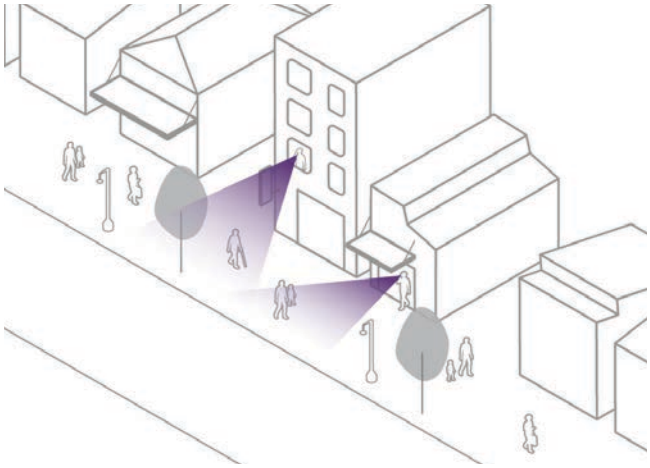


Figure 71. Passive surveillance and outlook to the street from buildings contributes to a safe public realm.

Figure 72. Awnings can provide protection from sun, wind and rain at street level.

PRECINCT PLAN OUTPUTS

The precinct plan outputs will vary depending on precinct type and complexity. Not all outputs will be relevant to every precinct.

Identification of **key development sites**

Built form design guidelines at the precinct or sub-precinct scale detailing:

- built form envelopes
- primary building controls relating to height, setbacks, building separation, orientation and plot ratio
- built form character
- materials and colour

Road/streetscape cross sections showing:

- relationship between built form and street width
- interface with the public realm
- solar access and overshadowing

Assessment against **Crime Prevention through Environmental Design** (CPTED) principles and design response. Refer to *Designing Out Crime Planning Guidelines* (WAPC, 2006)

Built form heritage and character study to show adaptive reuse and reactivation of heritage assets. This may be incorporated as part of **heritage and/or place character study.** Refer to Urban Ecology Precinct Plan Outputs

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4

IMPLEMENTATION

4.0 IMPLEMENTATION

Table 6 below outlines the types of strategic actions and statutory planning tools to support the timely delivery of a precinct plan. Implementation processes will vary according to the type of precinct, its contextual issues and the type of plan being prepared (precinct structure plan or local development plan).

Table 6. Factors in precinct plan implementation

Factor	Purpose	Example Output
Adherence to precinct plan vision	To ensure the precinct vision, as agreed between stakeholders, is maintained during all stages of implementation.	Identify a list of actions that are required to achieve the vision and precinct objectives. Each action should be assigned a timeframe and clearly articulate an intended outcome. Actions and outcomes can be high-level and somewhat flexible or mandated for greater certainty. The main consideration is that they are tailored to the precinct vision and objectives. For precinct plans with lengthy implementation frameworks, it will be necessary to regularly review the list of actions, timeframes and responsibilities to ensure they remain appropriate for achieving the precinct vision and objectives.
Collaboration	Ensure agencies and other relevant stakeholders are ready for implementation and demonstrate servicing capacity and timing of delivery.	Outline required interagency coordination and agreements to ensure the timely delivery of outcomes. Confirm participation of State and local government agencies, community groups and the private sector. Define the governance arrangements between these entities, including anticipated roles, responsibilities and agreements for implementation of the precinct plan. Illustrate how the community will remain active participants – such as ongoing consultation and engagement, community reference groups and boards.
Coordination and delivery	Identify the various factors that will impact on the implementation of the precinct plan over time.	**Incentive and trade-offs** - to achieve good design, such as development bonuses, to allow for alternative results that will benefit the precinct where original design outcomes/ targets cannot be met. **Staging** – a clearly defined staging strategy will facilitate delivery of the plan by identifying tasks and responsibilities matched to a manageable and realistic timeframe. Detail how the precinct will likely develop over time including in the context of major infrastructure, site works and other works. **Interim uses** – identify how and where short-medium term land use and development will be facilitated. **Land assembly** – provide a framework for coordination of land assembly to achieve the precinct vision. Identify potential incentives to promote coordinated land assembly between affected land owners.

Factor	Purpose	Example Output
		Servicing and infrastructure – the coordinated delivery of critical infrastructure is key to the successful delivery of a precinct. Specify the strategic and local infrastructure and services required and explain how they will be provided in an integrated, staged and timely manner. Involving agencies and service providers early and throughout the process will help to resolve any issues. Refer to draft SPP 3.6 Infrastructure Contributions (WAPC, 2020) for guidance on Development Contribution Plans (DCPs). **Public realm implementation** – identify an implementation framework for proposed upgrades and improvements to the public realm, including land requirement for new spaces, staging of public realm upgrades, and required development contributions. Refer to draft SPP 3.6 Infrastructure Contributions (WAPC, 2020) for guidance on Development Contribution Plans (DCPs). **Statutory application** – identify resultant planning scheme amendments including zoning and design standards to be incorporated into the planning scheme. Comment on the scope and timing of the amendments.
Case studies	Learn from the success of comparable projects that assist understanding of desired outcomes.	Consider benchmarking from comparable projects and precinct developments to establish design aspirations, management/governance strategies, commercial models, and areas of innovation.
Catalyst projects	Improve project viability by creating catalytic projects, including those that are transitional/interim in nature.	Identify key development projects that may be needed to advance precinct development. State and local government agreements and committed timeframes should be referred to where possible.
Monitoring and review	Precinct plans should be reviewed regularly to ensure the adopted vision and objectives are being met and remain relevant. Local governments should periodically assess the impact of policies and development applications on precinct development, vitality and viability.	Measure delivery progress against predetermined metrics. Agreed benchmarks and success factors should be measurable, achievable and associated with a timeframe. They should relate to both qualitative and quantitative measures. The capacity for the precinct to respond and adapt should be demonstrated. Explain to stakeholders, including affected landowners, the review process including how and when it will occur and over what timeframes. Responsiveness – describe the mechanisms in place to enable the precinct to change over time, both organically and in response to performance measurement.
Other/Future reporting	Identify additional investigations and future actions to ensure the ongoing viability of the precinct.	Identify gaps that require additional consideration and guidance that should not result in delay to the approval of the precinct plan.


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A

APPENDICES

A1 - SITE AND CONTEXT ANALYSIS

PHYSICAL CONTEXT:

TOPIC	PURPOSE
Location	Understand where the precinct is situated, highlighting key features and showing the broad community context. To be used to help establish a precinct boundary.
Surrounding area and land use	Understand relationships to the surrounding area including other precincts, centres, features and key infrastructure.
Tenure, ownership and buildings	Review the functions of buildings and land use in and around the precinct. Identify the scale, height and density of surrounding development and how it may guide future development. Analyse land assembly opportunities and constraints to identify influence on development potential.
Environment	Understand environmental conditions, including climate, soils, vegetation, topography, total water cycle, landscape features, key views and local character. Analyse environmental opportunities and constraints to identify influence on the development.
Physical infrastructure and services	Identify and describe existing and planned infrastructure such as transport networks, energy supply, sewerage, water and waste systems. Understand and describe the constraints to precinct development resulting from infrastructure servicing shortfalls and challenges. Identify how any constraints are planned to be resolved.
People movement	Determine the characteristics of the current and planned transport network. Understand existing access and links within the precinct and surroundings. Observe the quality of movement and how people experience travel, using different modes including active transport. Identify opportunities for potential improvements to walkability and cycling. Understand strategic planning by transport agencies such as strategic plans, land requirements, timing and funding.

COMMUNITY CONTEXT:

TOPIC	PURPOSE
People	Understand the current and forecast population, demographics and socio-economic characteristics of the precinct and the immediate surrounding area.
Housing	Understand existing housing typologies and reconcile with demand/supply and affordability.
Economy	Understand the strengths, weaknesses and emerging issues/trends of the precinct's economy including employment and business opportunities.
Culture, values, and identity	Understand the communities that will use the precinct to ensure authentic, community driven outcomes. Understand the values communities have regarding cultural and built heritage, Aboriginal cultural heritage, environmental values and sense of place.
Social infrastructure and services	Understand current and future capacity, usage and provision of facilities, spaces, services and networks that support community wellbeing. These include health-related services, education and training, social housing, justice and public safety provisions, as well as arts, culture and recreational facilities.

GOVERNANCE (LEGISLATIVE AND POLICY) CONTEXT:

TOPIC	PURPOSE	DOCUMENTS TO CONSIDER
Environment — Bush fire — Coastal planning — Water management — Vegetation protection — Tree management — Fauna habitats — Landscape protection — Key views — Waste management	Identify and map relevant environmental considerations relating to policy and guidelines in the State Planning Framework. Engage with relevant State and local government agencies and stakeholders.	— SPP 2.0 Environment and Natural Resources — SPP 2.6 State Coastal Planning Policy — SPP 2.8 Bushland Policy for the Perth Metropolitan Region — SPP 2.9 Water Resources — SPP 3.7 Planning in Bushfire Prone Areas — State Government Sewerage Policy — Better Urban Water Management — Better Urban Forest Planning of Perth and Peel — Visual Landscape Planning in WA: a manual for evaluation, assessment, siting and design — Waste Avoidance and Resource Recovery Strategy 2030
Planning — Higher-order planning strategies — Region scheme zoning — Local scheme zoning — State planning policies — Local planning strategies — Local planning policies	Identify and interpret applicable planning framework both in terms of current conditions and proposed, future outcomes.	— State Planning Strategy 2050 — Perth and Peel @3.5 million – sub-regional frameworks — Any applicable region scheme – MRS, Peel, Greater Bunbury — R-Codes — SPP 7.1 Draft Neighbourhood Design (previously Liveable Neighbourhoods) — SPP 3.6 Infrastructure Contributions — Development Control policies — Operational policies — Position Statements — Planning Bulletins — Relevant local planning scheme, local planning strategies and policies
Economic and community development	Identify the strategic economic importance of the precinct. Identify existing economic plans and strategies and potential impacts on precinct development. Identify existing strategic community plans and community needs assessments.	— Local planning strategy — Relevant local or regional economic development plans or strategies — Relevant local strategic community plans and community needs assessments
Utilities and service providers — Water — Energy — Waste — Telecommunications	Engage early with relevant agencies and service providers. Review relevant infrastructure plans and strategies. Understand future upgrade requirements and interim capacity challenges.	— Relevant agency or service provider plans or strategies
Existing plans and projects	Identify current and proposed projects in the immediate vicinity and the wider neighbourhood/district, and consider their relevance and how they might influence the precinct plan.	— Existing district and local structure plans — Existing subdivision plans — Existing development applications

SITE AND CONTEXT ANALYSIS - PROCESS

DESCRIBE
Identify the site and context area (physical and non-physical) using research, observation and surveys (where appropriate) and describe in a report and plan.
Explain how the site and context area has been determined.
ANALYSE
Assess the characteristics of the site and surrounding context. It may be useful to visit the site and surrounding area to gain a better understanding of the context. Some aspects of analysis can be measured and factually recorded but others are about experience of the place.
Explore the impacts the precinct design and potential development will have on the site and context.
Identify the key site and context issues that the precinct design must respond to.
RESPOND
Explain and illustrate how the design will likely respond to the site and context.
Show how the design response is clearly linked to the issues identified in the site and context analysis.
DOCUMENT
Document the site and context analysis and design response, including any drawings, photographs, diagrams, maps or plans.

A2 - PRECINCT BOUNDARY CONSIDERATIONS

Potential Considerations	Practical Application
Higher Order Strategic Directions	
Target dwelling yields	A precinct boundary may be determined to ensure that identified target dwelling requirements can be achieved in the planning for that precinct. This may involve the broad scale testing of scenarios, with different options for precincts boundaries based on different visions for development outcomes (i.e. small precinct boundary with high density development or a large precinct boundary with low/medium density development).
Identified activity centres	For neighbourhood activity centres, it may be appropriate for a precinct boundary to be identified at a distance of approximately 400m (using the walkable catchment methodology). For larger activity centres, it may be appropriate to identify a boundary at 800m (using the walkable catchment methodology).
Legislative Boundaries	
Local government boundaries Special legislation Other statutory planning instruments	Consideration should be given to existing administrative boundaries and statutory planning instruments. It may be appropriate to exclude areas covered by existing instruments in order to simplify implementation of the precinct plan. Alternatively, it may be desirable to identify a precinct that crosses jurisdictional boundaries to comprehensively plan for redevelopment of an area. In this circumstance, all relevant authorities should be involved from the outset and the potential multiple implementation actions flagged (i.e. changes to multiple schemes and legislation).
Existing Land Use Pattern and Zoning	
Land uses Zones Reservations	It may be appropriate for a precinct boundary to reflect the existing pattern of land use and/or zoning. This approach may be preferable where limited land use change is proposed and instead the focus of precinct planning is to establish a framework to guide built form outcomes.
Existing Land Ownership	
Tenure (i.e. freehold, strata) Degree of fragmentation Public/private	A precinct boundary may be identified to include or exclude particular parcels of land. For example, it may be appropriate to include a large parcel of land that straddles the walkable catchment of a train station in its entirety rather than having the precinct boundary include some but not all of the land parcel.

Potential Considerations	Discussion and Possible Practical Application
Existing Built Form Characteristics	
Age Condition Heritage	An assessment of the age, condition and/or heritage qualities of the existing building stock may assist in determining whether areas should be included within precinct boundaries. For example, it may be appropriate to exclude recently developed areas on the periphery of a precinct where there is unlikely to be a need for a new framework to guide further development in the short to medium term. Similarly, it may be appropriate to include older housing stock within a precinct so that the framework for redevelopment covers all similar properties. It may also be desirable to ensure that all buildings with similar heritage qualities are included within a precinct boundary to enable the application of consistent requirements.
Transitions	
Land use/built form transition	In areas where precinct planning is used to plan for substantial change, it will be important to consider how the affected areas will relate to surrounding areas where substantial change is not proposed. In some circumstances, it might be appropriate to include peripheral areas within the precinct boundary so that appropriate provisions can be devised to provide for an appropriate transition (i.e. land use, density, built form) between areas affected and unaffected by the proposed change. In other circumstances, the need to include areas for transitional purposes may not exist where the nature of change envisaged at the periphery of the precinct is not substantial.
Physical Characteristics/Features	
Topography	The nature of the existing topography may influence the extent of a precinct boundary. For example, steep and undulating terrain may serve to reduce to the walkability of a precinct catchment and might warrant the need for a smaller precinct boundary.
Vegetation, soils, landscape, foreshores, wetlands and buffers, and waterways	Depending on the circumstance, it may be appropriate for existing environmental attributes to be included in their entirety within a precinct boundary so that suitable conservation and/or enhancement measures are devised and considered in parallel with the proposed development outcomes for the precinct. For example, it may be appropriate for a foreshore area to be included within a precinct boundary so that proposed improvements to the foreshore area can be devised through the precinct planning process and their suitability considered in the context of the adjacent proposed development (i.e. land use, density, building height).
Water management	It may be useful and practical to devise precinct boundaries that support improved water management outcomes, where relevant. This approach may see boundaries reflect existing and/or proposed drainage catchments and respond to existing infrastructure.

Potential Considerations	Discussion and Possible Practical Application
Major roads Railways	Existing physical barriers that prevent or limit movement may be appropriate to be used to define precinct boundaries. It may also be appropriate to include areas beyond such barriers where it is considered necessary that the precinct planning process addresses the barrier and outlines necessary measures to improve connectivity (e.g. new road linkages, pedestrian and traffic bridges).
Site contamination	Where contamination issues are known to exist, it may be appropriate to include all affected areas within the boundary of the precinct so that a coordinated approach to remediation can be formulated for implementation as part of works associated with the development or redevelopment in the precinct.
Transport Infrastructure	
Existing and proposed train and major bus stations	Generally within 400-800m of the station, using the walkable catchment methodology.
Existing and proposed high frequency bus stops	Generally within 250m of stops, using the walkable catchment methodology.
Servicing Infrastructure	
Capacity Catchments	The scale of development that can be realised in a precinct may be limited by existing or proposed servicing capacity constraints. It may therefore be appropriate to consider such constraints in formulating a precinct boundary. It may also be appropriate to test many different precinct boundary options that respond to and reflect different servicing strategies (i.e. different degrees or stages of upgrades, different technologies). There may also be merit in considering existing or proposed servicing catchment boundaries in determining precinct boundaries.

A3 - ASSESSMENT

To aid in pre-lodgement discussions and assessment of the plan by the decision-maker, proponents are encouraged to include a checklist (or similar summary) to indicate how the precinct plan has addressed the Guidelines.

A sample assessment template is provided at Table 7 below:

Table 7. Sample assessment template

PART 2 - PREPARE			
Section	**Required Information**	**Provide? Yes/No**	**Comment**
2.1 Precinct Type	A summary that provides the key details of the precinct type		
2.2 Precinct Plan Form	Detail Precinct Plan form: — Precinct Structure Plan — Local Development Plan — Other (Masterplan, Guide Plan)		
2.3 Site and Context Analysis	Describe and analyse the site and context: — Physical Context — Community Context — Governance Context Site and Context analysis process: — Describe — Analyse — Respond — Document See Appendix A1		
2.4 Stakeholder and Community Participation	— Stakeholders identified — Engagement strategy prepared — Detail engagement methods		
2.5 Precinct Boundary	Show precinct boundary and how the boundary has been defined. See Appendix A2		
2.6 Vision	Prepare and outline a precinct vision		
2.7 Feasibility	Show consideration of feasibility		
2.8 Incentives and Community Benefit	Outline any development incentives that may be proposed and the community benefit that may be delivered		

PART 3 - DESIGN			
ELEMENT 1 *	**URBAN ECOLOGY**		
Element Objectives	Considerations	Addressed? Yes / No	Comment
O1.1 To protect, enhance, recognise and respond to the ecological systems of the precinct.	**C1.1.1** Identify and respond to the topography and landscape of the precinct and its surrounding area		
	C1.1.2 Identify opportunities to develop and/or enhance the extent, connectivity and quality of the green network.		
	C1.1.3 Consider the total water cycle and how any proposed management responds to the hydrological system, the site and its development context.		
	C1.1.4 Identify opportunities to support habitat protection and enhancement in the precinct.		
O1.2 To enhance sense of place by recognising and responding to Aboriginal, cultural and built heritage	**C1.2.1** Acknowledge and incorporate local Aboriginal knowledge, concepts and stories of place.		
	C1.2.2 Consider and integrate cultural heritage of the area into the precinct design.		
	C1.2.3 Identify and incorporate unique built features, including built heritage, into precinct design.		
O1.3 To reduce the environmental and climate change impacts of the precinct development.	**C1.3.1** Identify opportunities to retain existing trees and enhance the tree canopy through new planting.		
	C1.3.2 Consider the influence of the precinct design on energy demand and review the potential for precinct scale energy generation, distribution and storage.		
	C1.3.3 Prioritise consideration of waste management at the relevant scale in line with low-waste, circular economy objectives.		
	C1.3.4 Promote water conservation including water reuse and recycling.		
	C1.3.5 Evaluate the performance of precinct development proposals against leading Australian sustainability performance standards.		

PRECINCT PLAN OUTPUTS		
Output Description	Required? Yes / No	Comment
Site assessment		
Biodiversity and/or environmental assessment		
Heritage and/or place character study		
Water management plan or strategy		
Energy and greenhouse gas emissions statement		
Waste management plan/strategy		
Tree survey and assessment		

** Note: Replicate for each Design Element*

DEFINITIONS

Unless otherwise defined in this section, definitions in the *Planning and Development Act 2005* (and associated Regulations) apply.

Activity Centre: as defined under the *Planning and Development (Local Planning Schemes) Regulations 2015* and are community focal points that include activities such as commercial, retail, higher-density housing, entertainment, tourism, civic, community, higher education, and medical services. Activity centres vary in size and composition and are designed to be well-serviced by public transport.

Active transport: active transport is the use of human powered (primarily walking and cycling) modes of transport to access the places you need to go.

Circular economy: an alternative to a traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible – extracting the maximum value from them while in use, then recovering and reusing products and materials. Three core principles underpin a circular economy – design out waste and pollution; keep products and materials in use; and regenerate natural systems.

Climate zones: as defined by Australian Building Codes Board (ABCB) for thermal design and pubished in the National Construction Code (NCC): Western Australia is divided into five climate zones based on humidity and temperature, ranging from temperate in the southwest to hot/arid in the interior to hot/humid in the north.

Crime Prevention through Environmental Design (CPTED) principles: CPTED is an approach to deterring criminal behaviour and activity through environmental design. It seeks to ensure there is passive surveillance of activity on spaces, so criminals are deterred from committing crime.

Green network: consists of linkages between conservation sites, biodiversity corridors, all public space types (including street reserves and verges) as well as urban spaces that incorporate trees (urban tree canopy) such as civic squares, plazas, streetscapes, cycle paths and pedestrian paths.

Infill or urban infill: is the redevelopment of existing urban areas at a higher density than currently exists.

Precinct structure plan: as defined under the *Planning and Development (Local Planning Schemes) Regulations 2015*: means a plan for the coordination of future subdivision, zoning and development of an area of land.

Local development plan: as defined under the *Planning and Development (Local Planning Schemes) Regulations 2015*: means a plan setting out specific and detailed guidance for a future development including one or more of the following:

- Site and development standards that are to apply to the development
- Specifying exemptions from the requirement to obtain development approval for development in the area to which the plan relates.

Plot Ratio: as defined under the *Planning and Development (Local Planning Schemes) Regulations 2015*: means the ratio of the floor area of a building to an area of land within the boundaries of the lot or lots on which the building is located.

Public spaces: includes open spaces and the green network, that is: recreation spaces, sport spaces, nature spaces and foreshore reserves, as well as streetscapes, civic squares, piazzas, plazas and paved open pedestrian spaces.

Public realm: public spaces including streets, public open space and other areas used by and accessible to the community.

Sense of place: the essential memorable and recognisable characteristics of an area.

Self-explaining street: a street environment that elicits safe behaviour simply by its design.

Shared zone: is an area utilised by both pedestrians and vehicular traffic in which vehicles must give way to pedestrians at all times, and where the street environment has been adapted for very low speed vehicles.

Social infrastructure: is the interdependent mix of facilities, places, services, programs and networks that maintain and improve the standard of living and quality of life in a community.

Strategic opportunity/catalyst site: a site that will accommodate a major project (for example private development, transport and infrastructure) that will drive/strongly influence precinct plan implementation including with respect to timing, urban structure and intensity/type of land use.

Urban ecology: urban ecology is an applied multi-disciplinary practice that considers human needs and impacts on the ecosystem as an integral component. Its principal aim is to progress solutions to make cities more liveable and environmentally resilient, and promote sustainable urban development.

Urban greening: or green infrastructure refers to all forms of vegetation such as street trees, open parks and gardens, community gardens, shrubs, green walls, green roofs, lawn and pervious soils.

Urban heat island effect: occurs where air temperatures are higher in urban areas than surrounding non-urban areas. Temperatures can be 10 to 15 degrees hotter during the day and 5 to 10 degrees hotter at night as a result of the heat absorption of the built urban form.

Urban tree canopy: refers to the upper layer of habitat zone formed by trees. In terms of data and canopy measurement it includes any vegetation above three metres in height.

Urban water management: takes into consideration the total water cycle, facilitating the integration of water issues early in the planning process and encourages all levels of government and industry to adopt water management and urban practices that benefit the community, economy and environment.

Walkable catchment: The actual area served in a 400m (five-minute) or 800m (10-minute) walking distance along an interconnected street network from a public transport stop, or activity centre.

Water sensitive urban design: the philosophy of achieving better water resource management outcomes in an urban context by using an integrated approach to planning and incorporating total water cycle management objectives into the planning process. The key elements of this design include protection from flooding, management of water quantity and quality to achieve ecological objectives, and water conservation, efficiency and reuse.

PHOTO CREDITS

ACKNOWLEDGEMENT

The Department of Planning, Lands and Heritage and the WAPC gratefully acknowledge the following contributors for allowing the use of these photographs to illustrate this document

Photo Ref.	Page	Photo credit	Name of development/location
Cover page	Cover	DPLH	Subiaco
-	6	DPLH	South Fremantle
Top left	9	DPLH	Mt Hawthorn
Top right	9	DPLH	King St, Perth
Bottom	9	DPLH	Mt Hawthorn
-	18	DPLH	Yagan Square
Left	25	AUDRC	-
Right	25	AUDRC	-
-	29	DPLH	Globe Lane, Perth
-	33	DPLH	East Perth
Fig 8	39	MRA	Perth Cultural Centre, Perth
Fig 9	40	Kelwin Wong	Elizabeth Quay
Fig 10	40	DPLH	Bathers Beach Precinct, Fremantle
Fig 11	41	DPLH	Railway Square, Midland
Fig 12	42	DPLH	Subiaco
Fig 14	43	City of Kalamunda	Hartfield Park, Forrestfield
Fig 15	44	Curtin University	Curtin University, Bentley
Fig 17	47	DPLH	The Roundhouse, Fremantle
Fig 20	49	DPLH	Washing Lane, Northbridge
Fig 26	56	Development WA	Claisebrook
Fig 27	56	DG Imagery	Scarborough Beach Redevelopment
Fig 28	57	DPLH	Axford Park, Mt Hawthorn
Fig 29	58	DPLH	Lakelands
Fig 30	59	DPLH	Bathers Beach Precinct, Fremantle
Fig 32	60	DPLH	Midland
Fig 33	61	DPLH	Beckenham
Fig 34	61	DPLH	White Gum Valley
Fig 35	62	DPLH	Joondanna
Fig 36	63	DPLH	North Fremantle
Fig 37	63	Convic	Fremantle Esplanade Youth Plaza
Fig 39	65	Dion Robeson	Mary St Piazza, Highgate
Fig 40	66	DPLH	Subiaco
Fig 41	66	DPLH	RAC Arena, Perth
Fig 43	71	DPLH	Shakespeare Street, Mt Hawthorn
Fig 46	73	DPLH	Leederville
Fig 48	74	DPLH	Meltham Train Station
Fig 49	74	Peet	The Village at Wellard
Fig 50	75	DPLH	South Street, Fremantle
Fig 51	76	DPLH	Fremantle
Fig 52	77	DPLH	Mt Hawthorn
Fig 53	77	DPLH	Oxford Street, Leederville
Fig 54	78	DPLH	Queens Park Train Station
Fig 56	80	DPLH	Brunswick Junction
Fig 57	82	Peter Fitzgerald	Northbridge
Fig 60	84	DPLH	Oxford Street, Mt Hawthorn
Fig 62	85	DPLH	Rokeby Road, Subiaco
Fig 65	89	DPLH	South Fremantle
Fig 66	90	DPLH	Cambridge Street, West Leederville
Fig 72	93	DPLH	Fremantle
-	96	DPLH	King Street, Perth
-	100	DPLH	City of Perth Library, Hay Street

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