Urban Design Professional Services Guide

1 Introduction

This is a professional services guide on urban design, which provides direction to the NZ Transport Agency (NZTA) project managers and their teams on how and where to implement urban design in the inception and implementation of any highway work. The purpose of the guide is to identify where urban design fits within the various phases of a NZTA project.

For further guidance on urban design and the level of urban design input necessary for a project, assistance should be sought from the Urban Design Team in National Office.

2 What Is Urban Design?

The NZTA is committed to planning for, developing and promoting quality urban design as a signatory to the New Zealand Urban Design Protocol. In response to this, the NZTA has developed a set of *Urban Design Implementation Principles* to help inform future projects and to ensure that a context sensitive approach to planning and designing the state highway network is undertaken. These principles and the NZTA's urban design policy are located in the Agency's *Planning Policy Manual*.

Urban design is the generally accepted name for the process of giving physical design direction to urban growth, conservation, and change. At the large scale it is concerned with urban structure and the pattern of buildings, open space and movement networks. At the finer scale, it is also concerned with urban form and how the streets, open spaces and buildings interact and appear.

There is some misconception that urban design's role in a transport project is only the aesthetic enhancement of roadside elements and structures. While this is valuable, the other important role for urban design is land use and transport integration.

3 Urban Design and the State Highway Network

Urban design applies to all areas of the state highway network and is a multidisciplinary approach to improve the quality of life for communities. Urban design as it applies to the highway concerns how the design of state highway infrastructure in urban and rural settings responds to the natural and built environment. Urban design concerns the design of state highways in response to place and their contribution to the physical form, functioning and visual quality of the regions through which they pass and serve.

The state highway network, as well as achieving its transport objectives in moving people and goods, should contribute to the form of human settlements and their accessibility. The state highway should be located and formed with the greatest of care. It should fit in sensitively with the place through which it passes and with the associated landform and have regard for the natural ecology as well as the built, natural and cultural heritage.

Physical connections for communities should be maintained or improved along, and across the corridor as part of the project's design. Wherever possible, the continuity of the surrounding built environment and local street network should be retained or reinforced, rather than severed. There should be good access for pedestrians, cyclists, public transport users and local traffic. Bus, cycleway and pedestrian networks and facilities should be integrated into the overall design of the project in appropriate locations.

A state highway that is designed well should improve associated public spaces and access to them. The potential should be identified, in partnership with key stakeholders, for achieving complementary uses of adjoining land, and associated development or redevelopment, to enhance the project's urban design benefits and ensure the effective functioning of the state highway.

The engineering elements that are incorporated into the road corridor should contribute to a unified road architecture and be integrated into the project's overall design concept, including its landscaping. The designs of all roadscape elements should fit with each other – bridges, guardrails, noise barriers, traffic and directional signs and lighting. These elements should be carefully considered as to their scale, placement and thematic treatment.

Urban design must be integrated throughout the planning, design development, implementation and maintenance of all state highway projects. Urban design draws out the design issues that stem from considering a project's purpose, required standards and context.

4 Urban Design Information Requirements

The following diagram (Figure 1) identifies where urban design should be integrated into each stage of a state highway project from planning through to maintenance.

The table that follows (Figure 2) outlines in more detail the urban design information requirements expected to be included in highway projects. **The level of detail will need to be appropriate to the scale of the project and the scale of the effects of the project.**

A column has also been included in the table to identify where the information requirements should be implemented in the appropriate sections of this manual (SM030). However, this is a guide only and it may be appropriate that the information requirements be introduced in earlier stages of the project.

It is important that as the project progresses through the various phases, the urban design detail developed at earlier stages is carried through to the next stage to avoid duplication of work and to build on previous analysis.

Section 5 of this guide provides further information on the relationship between the urban design information requirements and the general requirements of the NZTA's professional services specification included in SM030.

The table (Figure 2) and Section 5 of the guide are specific to SM030 professional services procurement for state highway project and maintenance contracts and do not cover higher-level strategy studies such as Corridor or Transportation Studies. However, as illustrated in Figure 1, there is an expectation that in any such study, urban design expertise is included in the project team. This is important as such expertise can identify and consider the relationship between the different roles of the state highway and local roads, transport modes, land uses, accessibility etc, which are important in order to seek the outcome of a well integrated land use and transport system.

Section 6 of this guide is specific to Urban and Landscape Design Frameworks and Master Plans. For the most part, these are only suitable on large projects.

Figure 1 - Urban Design Integration

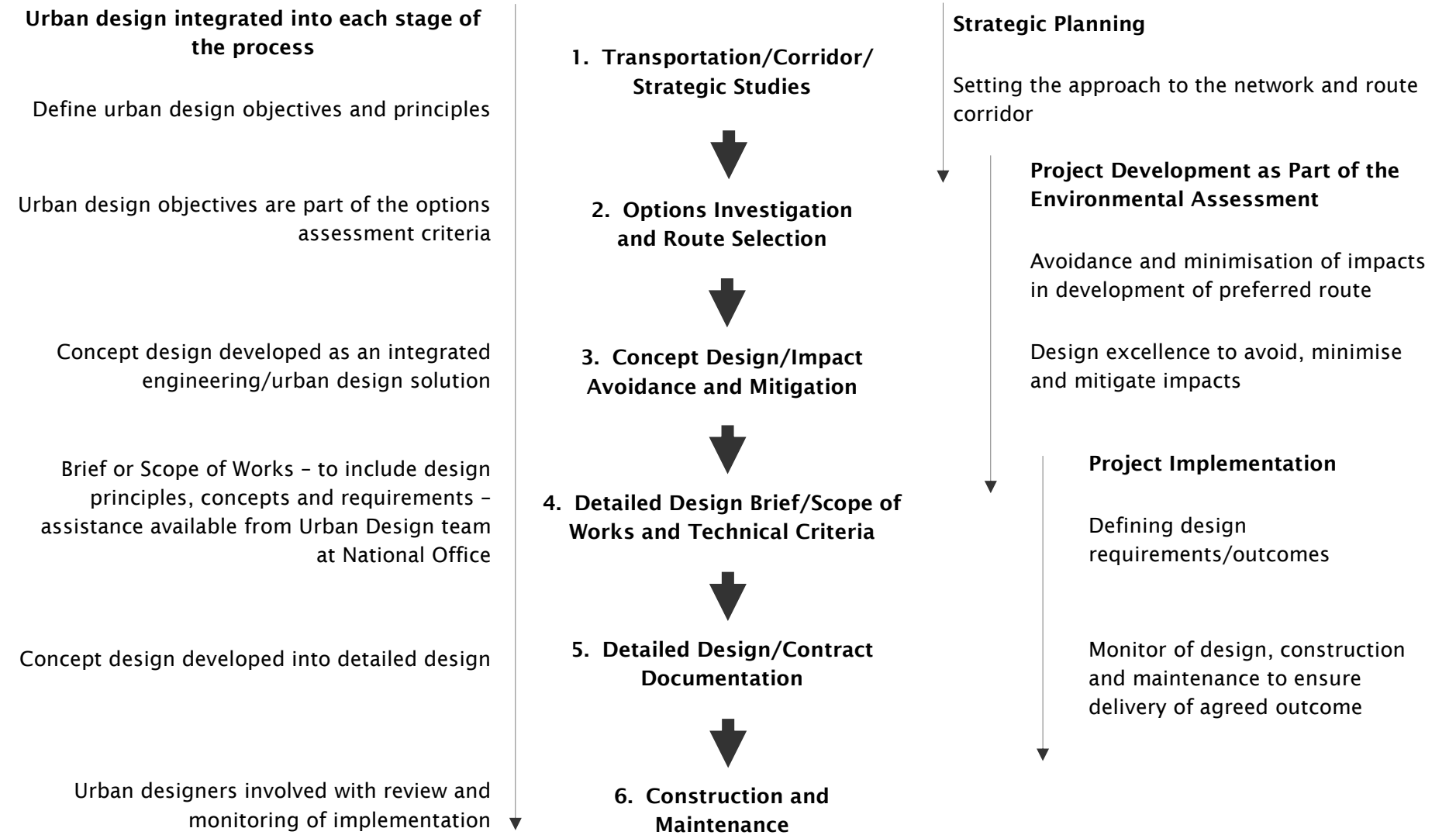

Figure 2 - Urban Design Information Requirements			
Section	**Purpose**	**Requirements**	**Relevant Specification/ Standards**
1. The Contextual Analysis - Analysis of Project Surrounds	• To develop a full understanding of the character of the place (built, natural, cultural and community environment) impacted by the project. • To identify and assess the constraints and opportunities inherent in the context of the scheme (now and in the future) that will inform the road design.	• Graphic and textual description and analysis of the context and issues from a broad regional scale to a more detailed local scale. • Include an assessment of the views and visual qualities of the place/corridor, including walking and cycling linkages and connections, accessibility to public transport and major destinations.	Scoping Report/Scheme Assessment Report.
2. Project/Transport Objectives	• To demonstrate an appreciation in urban design terms of the project's impact on the surrounding area, intended scope, purpose, function, scale and road design standards.	• Concise description of the urban design implications of the project/transport objectives ie the role the road will play in the area and region through which it passes. • Develop an Urban Design Plan (UDP) for complex projects as a tool to record urban design features and concepts and to document the design process (refer to section 6). The UDP could also be incorporated in to the Environmental Management Plan or Project Management Plan if urban design issues do not justify its own plan.	Scoping Report/Scheme Assessment Report. Preliminary Design Philosophy Statement.

Figure 2 - Urban Design Information Requirements			
Section	**Purpose**	**Requirements**	**Relevant Specification/ Standards**
3. Urban Design Objectives and Guidance	• To define urban design objectives in response to the constraints and opportunities drawn from the context analysis, the project/transport requirements and expectations of the community, iwi and stakeholders. • To respond to the urban design objectives by setting the broad approach, themes and design guidelines that will define the proposal and further design development.	• Statement of objectives and explanation to guide route selection and the project's design. • Concise text and images describing the design principles for the project in the whole and its parts.	Scoping Report/Scheme Assessment Report. Preliminary Design Philosophy Statement.
4. Urban Design	• To illustrate how the state highway is integrated with the surrounding urban/rural landscape and community context in the whole and its parts. This translates the intent of the NZTA's Urban Design Policy into a site-specific integrated urban design and engineering solution.	• Detailed urban design proposal for complex projects - larger scale urban design impacts. • Plans to include the mitigation measures required and integrated within the state highway proposal – cost effective solutions. • Visualisations of the state highway proposal must include the view from 'eye level'. • Include urban design concepts to give form to the design principles and draw together all aspects including the built environment,	Scheme Assessment Report. Design Philosophy Statement. Bridge Design Statement. Final Design.

Figure 2 - Urban Design Information Requirements			
Section	**Purpose**	**Requirements**	**Relevant Specification/ Standards**
		noise management, the natural landscape and ecology, heritage, design integration of movement systems, engineering requirements, the vertical and horizontal formation of the road, and so forth – into a single design conception. • Integrate the urban design commitments from the *Social and Environmental Assessment* (PSF/13). • A clear differentiation must be made between the work to be funded and implemented by the NZTA and the opportunities that result from the project, but are the funding and implementation responsibilities of others eg local councils.	

Figure 2 - Urban Design Information Requirements			
Section	**Purpose**	**Requirements**	**Relevant Specification/ Standards**
5. Evaluation of the Concept Design	• Evaluate the project against the Urban Design Protocol and the NZTA's Urban Design Policy. • Demonstrate both positive and negative impacts of the project. • To provide for design iteration to avoid, remedy or mitigate adverse impacts (and mitigation measures) and enhance positive effects. • To develop cost effective mitigation proposals.	• Evaluation of the design should be on adverse impacts and the benefits of the option(s) on the evaluation criteria. • A clear statement of the urban design benefits resulting directly from the full proposal that the NZTA will deliver and indirectly from what other stakeholders eg Territorial Authorities will fund. • A schedule of mitigation measures arising from the inability to eliminate impacts in the development of the urban design proposal. • Demonstrate the integration of mitigation measures within the project design. • If required on a larger/complicated project, an Urban Design Panel may be commissioned to assist evaluation.	Scheme Assessment Report Preliminary Design Philosophy Statement Design Philosophy Statement Bridge Design Statement Final Design

Figure 2 - Urban Design Information Requirements			
Section	**Purpose**	**Requirements**	**Relevant Specification/ Standards**
6. Construction	• To ensure the urban design elements of the project are implemented in the construction phase.	• Provide information on the urban design features/elements to the construction team so that they understand the purpose of the feature/element. If the project has an UDP, identify and illustrate this information in the Plan. • Provide urban design advice to the construction team when needed.	Design and Construct MSQA
7. Maintenance	• To ensure the urban design features are maintained and not compromised post construction of the project.	• Seek Network Operations staff involvement in project design of urban design features to ensure that they are operationally suitable. • Document urban design elements in the Asset Owners Manual and address in any auditing process. • If the project has an UDP, ensure that the maintenance requirements of the features are included in the Plan and given to the network management consultant.	MSQA Network Management Hybrid Management Contract

5 Urban Design Implementation

The following sections describe where and how urban design should be incorporated into the appropriate stages of the project as detailed in this manual (SM030).

5.1 Investigation and Reporting

The purpose of the *Investigating and Reporting* (I&R) phase is to investigate options to complete a project in a way that fulfils legislative requirements and NZTA's policies and standards, including NZTA's *Urban Design Policy in* a cost effective manner. The information gathered during the I&R phase forms the basis of the work in later stages for design, physical works and maintenance.

There are two main areas in the I&R process in which urban design should be integrated, namely the *Scoping Report* and the *Scheme Assessment Report*. These have been addressed in detail below. However, it is important to note that if appropriate, urban design should also be included in any earlier studies, for instance a *Project Feasibility Report*. Furthermore, urban design should be included as a key issue to discuss at any initial partnering meeting or team meeting, with relevant consultants and parties present.

5.1.1 Scoping Report

The purpose of the *Scoping Report* is to determine which project options are viable and which options will be investigated further in the *Scheme Assessment Report*. One of the requirements of the *Scoping Report* is that an assessment be undertaken under the four categories of environmental, funding, economic and Client requirements. The social and environmental category includes the preliminary scoping of environmental, social and planning effects, including opportunities (*Social and Environmental Screening*). An urban design assessment should sit within the environmental section and should be linked with the other three categories where appropriate.

It is important that urban design is positioned early in the strategy and scoping stages of the project in order to clarify the urban design matters that link all environmental, social, engineering and economic considerations. Urban design objectives established early in the project will provide the framework for determining how the project will deliver on the NZTA's *Urban Design Policy*.

Urban design advice should be sought on the details of the proposed project and incorporated into the whole of the project as appropriate to guide key decision makers.

On larger complex projects, it may be appropriate that an Urban Design Plan be developed to guide the implementation of urban design throughout the life of the project (refer to section 6). The Plan can be used as a tool to record urban design features and concepts. It can also be incorporated as required into the Environmental Management Plan. The Urban Design Plan should be iterative and evolve with the project.

5.1.2 Scheme Assessment Report

Scheme Assessment includes the production of a *Scheme Assessment Report* (SAR). The SAR is used by the NZTA to determine and justify the option to be put forward to gain funding for design and construction. In the SAR the same four assessment categories are used as for the *Scoping Report*. Once again, while urban design should be integrated throughout the SAR, it is appropriate for the urban design assessment to sit within the environmental section of the report.

Included within the SAR is a *Social and Environmental Assessment* (SEA) for the preferred option, the detail of which is to be appropriate to the scale of the effects of the project.

The SEA should include information on how the preferred option(s) address/respond to the urban design issues identified in the scoping and scheme assessment stages of the project. This should be outlined in the SEA as a separate specific section. The urban design section should build upon any previous analysis, contain more comprehensive information and fully document the development of the design and the contextual analysis of the project.

The urban design section in the SEA will be explicit and more developed, containing sufficient information to ascertain the significance of the context, the urban design concept and the associated benefits and impacts.

The urban design section must accurately demonstrate and illustrate what the road will look like and how it will be experienced from the point of view of all road users, neighbours and the community. It is important to distil the project's urban design concept and benefits, ideally with well-selected annotated graphics.

5.1.3 Design Philosophy Statement

At any scoping stage and during scheme assessment, a *Preliminary Design Philosophy Statement* including design concepts, which outline all relevant design assumptions and considerations, is prepared. The *Preliminary Design Philosophy Statement* is updated during the *Design and Project Documentation* phase to become the *Design Philosophy Statement*.

The main purpose of the *Preliminary Design Philosophy Statement* and the *Design Philosophy Statement* is to ensure that the option(s) do not have unresolved planning, construction, operational or maintenance constraints and will identify any design issues that do not comply with legislation or NZTA standards. In terms of urban design, this should ensure that the design encompasses the project's urban design objectives and is consistent with NZTA's *Urban Design Policy*.

While urban design is relevant to the whole of the *Design Philosophy Statement*, the particular sections where urban design should be included are:

- The outline of the philosophy used for the completion of the design, which is consistent with the *Social and Environmental Assessment* documented in the SAR;
- The design assumptions; and
- The statement detailing the philosophy behind the environmental aspects that will require maintenance.

5.1.4 Bridge Design Statement

The *Bridge Design Statement* should be consistent with the urban design objectives adopted for the project and described in the SAR. The form and visual character of any bridge or structure should complement the environmental context of the project and give effect to the NZTA's Urban Design Principles guidance material for road bridges and pedestrian bridges.

5.2 Design and Project Documentation

The design of the preferred option, undertaken during the *Design and Project Documentation* (D&PD) phase is required to take into account all environmental and social effects identified in the *Social and Environmental Assessment* from the SAR phase of the project. This includes the urban design matters.

5.2.1 Final Design Report

The *Final Design Report* details the interpretation of the design requirements. The *Final Design Report* should include illustration of how the physical deliverables and the design standards, assumptions, materials and methodology used in the completion of the design of the various elements of the project meet the urban design objectives for the project.

5.3 Management, Surveillance and Quality Assurance

The purpose of the *Management, Surveillance and Quality Assurance* (MSQA) phase is to carry out the physical works tendering and manage the contractual delivery of the physical works - and then to close out the project on completion. The requirements for managing the urban design aspects of the physical works are two fold:

- Apply the general surveillance specification to ensure that the urban design elements in the design are completed during the contract works; and
- Ensure that the ongoing maintenance requirements for the urban design elements are documented in the Asset Owners Manual and highlighted in the handover.

5.4 Maintenance Implications of Urban Design

5.4.1 Maintainability

To ensure urban design elements developed in the SAR or detailed design stages of the project are maintainable the Network Operations team should review and support the design.

5.4.2 Network Management

The requirements of urban design need to be taken into account in the NZTA's State Highway Network Management specification and the State Highway Hybrid Contract Management Specification, to ensure that:

- The urban design principles are integrated with the general requirement for environmental management for works undertaken by maintenance contractors; and

- The maintenance urban design elements delivered as part of other works undertaken on the highway network is integrated into the general maintenance of the network and that specific maintenance requirements are identified and programmed by the maintenance contractors.

5.4.3 Management of Bridges and Other Structures

The requirements outlined in 5.4.2 above also need to be applied to the structural maintenance of bridges and other major structures.

5.5 Design and Construct Contracts: Specimen Design and Project Documentation

The purpose of the Design and Construct model is to change the point of responsibility between the consultant and contractor, with the contractor becoming responsible earlier for delivery of the project outcome by taking over delivery of the final design and then constructing it. The contractor also bears the risks associated with any changes in design except those instructed by the Client. This risk is offset by having the opportunity for early input into the design to introduce their own innovations and practicalities as the work progresses. The Design and Construct form of contract enables a reduction in cost and time. Savings on time and cost are made due to the design being undertaken in parallel with construction.

Given that the control over the design process is diminished when projects are put out for tender on both design and construction, it is important that urban design excellence is managed by clearly defining the project's urban design outcomes within a competitive tendering framework and then monitoring its implementation. It is important to ensure that the urban design implications and elements identified in the previous stages of the project, for example the Design Philosophy Statement is carried forward into the final design developed by the contractor.

5.6 Contract Scope

During each stage of the project, for example the completion of the I&R phase and the commencement of the D&PD phase, it is important to ensure that the urban design objectives and concepts are captured in order for them to be further developed and transferred to the next stage of the project. This is to ensure that there is clear direction on the project's urban design elements, no duplication of work and to guide the consultant or contractor on how the project's urban design is to be further developed or implemented.

6 Urban and Landscape Design Frameworks

NZTA's *Urban and Landscape Design Frameworks – Highways and Network Operations Guideline* outlines the process to be followed through the planning, design and construction phases of a state highway project when an Urban and Landscape Design Framework (ULDF) or Master Plan (ULDMP) has been commissioned.

Link: *Urban and Landscape Design Frameworks – Highways and Network Operations Guideline.*

www.nzta.govt.nz/resources/urban-design/highways-network-ops-guideline/