



Urban and Landscape Design Frameworks – Highways and Network Operations Guideline

The following 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.

ULDFs and ULDMPs, for the most part, are only suitable on large projects. For the majority of NZTA projects, urban design will simply be integrated into the core project. The National Office Urban Design Advisor will provide advice on when an ULDF or ULDMP should be developed.

Purpose of Urban and Landscape Design Framework

The integration of large scale and/or complex road infrastructure projects into the surrounding environment involves complex issues that need to be addressed to ensure the 'best fit' and that the best possible project is delivered for the benefit of all users. The purpose of an ULDF is to ensure that the urban and landscape design concepts for these projects are appropriately defined, developed and implemented. It provides a forum to capture and integrate the various elements of a project, and to ensure that the expertise of different members of the project team are working together. As such, an ULDF should encompass a wide range of disciplines including but not limited to:

- Urban Design
- Landscape Architecture (including visual impact assessment)
- Architecture (bridges and structures)
- Civil and structural engineering
- Planning and Transport Planning (including walking, cycling and public transport)
- Noise and Air Quality Specialists
- Stormwater/Coastal/Environmental engineering
- Ecology
- Property
- Civic Art

An ULDF is typically used to support the Notice of Requirement for the designation of a route and is a key tool for the NZTA in identifying how the project gives effect to the New Zealand Urban Design Protocol, which the NZTA is a signatory to. It is also used as a instrument for consultation and engagement with stakeholders and the community through the life of a project.

An ULDF will evolve through the planning, design and construction phases of a project and will need to be structured and designed in a manner that is specific to the project to which it is being applied. For projects that are mainly focused on route protection, the ULDF may simply present high level urban design direction and concepts for the state highway project and opportunities in the immediate surrounds of the project which could support other agencies' plans for these areas. It is from these concepts that detailed designs are developed during further stages of a project to ensure that the different disciplines are integrated and that a high standard of workmanship is achieved. Detailed designs are therefore guided by the principles, concepts and objectives presented in the ULDF. This then allows flexibility for a number of different solutions to be adopted in future stages of a project.

For projects that are likely to make use of the call-in procedure under the RMA or progress quickly from route protection to construction the ULDF will need to be more specific and developed in the form of an Urban and Landscape Design Master Plan (ULDMP) – refer below. This will require design concepts to be prescribed in detail and designed to such a level to support the documentation for lodgement as well as guide the further phases of a project. Themes and solutions for delivery of the project through the detailed design and construction phase must be defined and implementation of concepts managed through the process. From experience in New Zealand and overseas, this form of ULDF has been proven to be the best method to ensure quality control in the delivery of roading project as the risk from ad hoc design solutions and underestimated design costs are minimised through the specimen design, tendering and design and construct phase. This form of ULDF will better safeguard design commitments made to stakeholders and the community through the consenting phase of the project as they will be clearly reflected in the ULDF and will be incorporated within specimen designs, specifications and tender documentation. It will also enable the urban and landscape components of a project to be specifically priced and a provisional/tendered sum set aside to ensure that through the construction phase this money is secured and not reallocated to other areas of a project.

Structure of Urban and Landscape Design Framework

There are a number of ULDFs that have now been developed for the NTZA and are available to view on the NZTA urban design webpage. Each ULDF is specific to the project and its context, however the following is an example of what an ULDF would typically address:

- (i) Strategic context – identifies the strategic planning context for the project and how the project might support other agencies future plans for the subject area. The ULDF will identify how the state highway project will integrate and give effect to the strategic planning context.
- (ii) Urban/rural context – summarises key elements that compose the urban/rural context of the project and which the project will need to integrate with or be sensitive to. This is supported by the landscape and visual impact assessment.
- (iii) Design objectives/concepts – identifies the design concepts and objectives for the project, including:
 - Road Design – a sensitive and cost effective design will help reduce visual, noise, severance and environmental impacts on the surrounding environment and communities. The ULDF will identify how this can best be achieved.
 - Roadscape elements - elements such as lighting, sign gantries and signage, retaining walls, guard rails, fences, wire rope barriers and median barriers should respond to the scale and character of the areas through which the project passes. The ULDF will identify how this will be achieved as well as how these difference elements will form and support a consistent and integrated design.
 - Bridges – the ULDF will identify how any bridges complement their context. This means considering the topography, the rural or urban setting, any existing structures, visibility of the bridge and the length of its span, pedestrian and cycle access.
 - Tunnels, portals and ventilation shafts – the ULDF will identify how these elements can contribute to road safety, drivers' behaviour, legibility, integration with the surrounding area and visual interest for road users.
 - Noise walls – these must integrate with the design of the overall corridor and complement the motorway structures, landscaping and roadscape elements whilst being sensitive to adjacent landuses. The ULDF will provide concepts to illustrate how this is to be achieved.
 - Land use reinstatement – often on projects there is an opportunity for reinstatement/rezoning of commercial, residential or open spaces landuses in

suitable locations. Such reinstatement/rezoning reduces the long-term impact of a project on the surrounding communities. With stakeholders the project team should identify how this is to be achieved and outline the process in the ULDF.

- Landscaping – landscaping is an important component of road design. It is valuable in terms of public space planning, restoring and enhancing biodiversity, screening and softening undesirable views of roads and traffic, filtering air and water pollutants and suppressing weed growth. The ULDF will capture the landscape concepts for the project and consider future maintenance implications.
- Stormwater wetlands/low impact design (LID) measures - stormwater wetlands and other LID measures are required to treat/retain surface waters before they are released in nearby waterways. Beside their drainage function, the primary function of a wetland is to restore native biodiversity and in doing so, create attractive amenity features.
- Integration with land uses and passenger transport – a key purpose of an ULDF is to capture how a project will integrate with the surrounding landuse and how it will support and provide for passenger transport, through enhanced infrastructure provision. Understanding the strategic, urban and rural context of a project will assist in determining how the project will achieve this.
- Pedestrian and cycle facilities – road projects can result in the severance of communities and landuse. The ULDF ensures that the design provides for pedestrian and cycle movement and amenity. This includes suitable pedestrian and cycle crossing facilities as well as measures to improve the amenity and connect the network on either side of the road.
- Public space planning – the ULDF will assist with identifying how the road itself will be designed as a public space. Where parks, pedestrian and cycle facilities are provided as part of the project the ULDF shall identify the design concepts and ensure integration with the landscaping, stormwater treatment and roadscape elements of the project.

Where possible, design elements should have multiple functions. Using stormwater treatment as an example - the wetland treats the stormwater, creates an amenity feature, increases biodiversity and can assist with visual mitigation of the roading infrastructure.

Purpose of Urban and Landscape Design Master Plan

An Urban and Landscape Design Master Plan (ULDMP) will evolve from the ULDF. The ULDMP is generally developed during the detailed design phase of the project and illustrates the urban and landscape design elements of a project. The ULDMP supports the Outline Plan of Works required under the RMA; any further engagement with stakeholders; and will be the plans upon which the construction drawings are based.

Structure of ULDMP and detailed ULDF

The following is a list of a number of key features that may be included in an ULDMP and a more detailed ULDF. These features will be defined through text, location plans and drawings – plan/section/elevation as required. The level of detail should remove any ambiguity from the design and build on any previous work from the ULDF.

- Bridge and structure designs
- Landscape and planting plans
- Noise wall designs
- Open space plans including any stormwater measures such as wetlands; earth bunds etc
- Pedestrian and cycle facility plans including street furniture and network connectivity
- Passenger transport facilities such as bus stop infrastructure, including bus shelters
- Roadscape elements such as retaining walls, barriers, fences, lighting, signage gantry and sign plans
- Landuse reinstatement plans
- Artworks
- Colour and material specifications
- Maintenance requirements and graffiti resistance measures

Typical Urban and Landscape Design Process

The ULDF will guide the detailed design phase of the project to ensure that the concepts developed and submitted as part of the statutory process are fully implemented and co-ordinated with the final design of the project.

Following is a typical process to be followed when an ULDF is developed. This includes the advice and review role of the National Office Urban Design Advisor.



Urban and Landscape Design Framework Process

Project Lifecycle Stages

