



Environmental design framework guidelines



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1. Purpose of the environmental design framework guidelines

1.1 Purpose

The purpose of this document is to provide an outline of what an environmental design framework should contain and the matters that it will need to address.

The purpose of an environmental design framework (EDF) is similar to that of an urban and landscape design framework (ULDF) as described in the NZ Transport Agency's Highways and Network Operations guideline as follows:

'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 EDF will be more appropriate than an ULDF when a project is located in a rural environment. Following is an outline to provide additional guidance to project managers and consultants to meet the NZTA's urban design and environmental expectations.

The EDF should ensure the design and profile generally:

- fits the character of the area
- is in harmony with its setting
- follows a profile that best fits into the existing topography
- protects areas of historic and cultural significance
- preserves as much native ecology and vegetation as possible
- removes accident-promoting hazards whenever possible, endeavours to maximise road safety benefits and minimise environmental impacts
- considers the scenic and landscape experience of the road user
- considers and provides for storm water run-off, including conveyance and treatment when appropriate
- takes into account reverse sensitivity effects.'

In particular the EDF will need to reflect the significance of the environment to iwi, Department of Conservation (DOC) and other such stakeholders and attempt to include appropriate recognition in any recommended mitigation and landscape treatment.

In addition, the consultant must ensure a contractors social and environmental management plan is prepared, which will include measures to remedy disturbance to, maintain and to enhance, wetland, indigenous forest, streams and river margins. The consultant must ensure that the NZTA's *Guidelines for highway landscaping* (SP/M/020) are observed and that the process framework established is integrated into wider planning, design and maintenance processes and requirements, and is consistent with urban design principles.

2. Environmental design framework outline

The following section outlines those matters and issues which NZTA requires to be addressed in order to meet the purposes described above.

2.1 Introduction

2.1.1 Project overview

The EDF will provide a summary of the project including:

- project objectives.
- environmental objectives, refer to environmental plan, eg:
 - protecting and enhancing the environment
 - avoiding adverse impacts.

2.1.2 Project background

The EDF will provide a brief summary of the project background including:

- route description
- project rationale and scope
- relevant designation and resource consent conditions
- project delivery and timeline and how the EDF relates to future project delivery phases including detailed design, construction, construction management and maintenance phases
- role in relation to other documents and policy, and
- relationship of the EDF with other NZTA documents and wider environmental objectives as they relate to the project.

2.1.3 Purpose

The EDF will have a stated purpose and will provide an overall design direction for the project which will seek to establish an appropriate balance between the state highway safety and operational objectives of the NZTA and the wider physical, environmental and community considerations. These wider physical, environmental and community considerations will be clearly expressed in the EDF. It is intended that such a framework will ensure a consistent and coherent approach to design and decision-making for the project.

2.1.4 Scope

The EDF will describe the scope of the framework. The EDF will firstly cover the designated works including improvements required to accomplish the objectives of the project. Secondly, the framework will address the contextual considerations of the wider project area and its surrounding areas. This will assist with identifying opportunities for further development and enhancement in partnership with appropriate authorities and/or other stakeholders.

2.1.5 Structure

In this section, the structure of the EDF document will be outlined.

2.2 Planning context

This section should outline all the relevant planning documents and the specific statutory provisions in relation to all environmental considerations

2.3 Environmental context

The EDF will outline the environmental context for the project in relation to:

- geomorphology and land forming processes including hydrological processes
- pre-human occupation indigenous land cover and natural heritage
- historic land use and occupation
- vegetation, habitat and biodiversity
- landscape character, including view and features
- current natural patterns and processes including ecological processes and linkages
- physical linkages and circulation
- existing and future land use patterns
- cultural landscape issues and in particular issues of significance to iwi.

These contextual assessments will identify opportunities to appropriately reflect the project's unique qualities and values and will assist in the identification of key environmental management issues and the identification of appropriate means by which these issues will be managed.

2.4 Community consultation outcomes

Community consultation is a key component of any project. It is expected that community consultation will be managed through a specific programme separate from the EDF. However it is recognised that the EDF presents a unique opportunity to enable the expression of particular environmental and cultural values for key stakeholder groups.

Outcomes of the community consultation process will be used to inform the EDF, from the initial objective setting through to the practical design and management proposals.

2.5 Corridor environmental design principles

The EDF will outline overarching environmental design and management principles and will relate these principles to the wider project purpose and objectives, and assessment of the environmental context. These principles will be based on recognised environmental management and design principles from the disciplines of ecology, landscape architecture and urban design.

These principles will also be based on and reflect the principles outlined in various NZTA and related documents including, but not limited to:

- *The New Zealand urban design protocol.*
- *Urban and landscape design frameworks - Highways and Network Operations guideline (NZTA).*
- *Urban design policy (NZTA).*

- Structures guidance notes where relevant (eg *Urban design principles for road bridges* (NZTA)).
- NZTA Professional Services guideline, *Urban design professional services guide* (PSG/12) and *Beyond the pavement: RTA urban and regional design practice notes* for direction on where to implement urban design.
- NZTA Professional Services guideline, *Social and environmental management form* (PSF/13).

2.6 Corridor and wider design and management opportunities

This section of the framework should cover the elements of the project that will be designed and constructed as part of the capital works that require specific environmental design input. This should be to a level of detail or direction to be able to determine what work elements will either look like or the environmental standards or design cues that will inform their ultimate design and outcome.

These design and management standards, cues and outcomes are to be informed by the character and identity of the sector in which they are located.

The EDF will identify other key environmental opportunities that may be facilitated by the project but which may not relate directly to the immediate designation corridor. These opportunities could include, for example, ecological benefits related to enhanced linkages and connections, wider cultural landscape considerations such as iwi, DOC co-management or long-term access and land care initiatives if appropriate

2.7 Sector area proposals

The spatial framework for the project will also identify sectors across the project route that will relate to particular working or construction areas that may have specific landscape characteristics and/or particular landscape and environmental management issues. Once sector areas have been developed the project EDF will identify:

- sector characteristics
- related environmental design and management cues that reflect that character and issues and, and
- proposed design initiatives and/or management solutions to appropriately reflect the landscape character and resolve environmental issues.

Matters to be addressed in each project sector include but are not limited to:

- land form modification and the appropriate reflection of underlying natural land forms
- enhancement of natural vegetation patterns
- landscape restoration and rehabilitation opportunities
- enhancement, protection and management of natural drainage patterns and integrated stormwater management for improved water quality on a catchment-wide basis
- ecological values for terrestrial and fresh water habitats including opportunities to enhance ecological linkages, connections and habitats
- structures (including but not limited to: bridges, retaining walls, tunnels and portals, over bridges, underpasses, foot bridges, noise walls, interchanges and connections) and their location
- vertical and horizontal alignments
- spatial and visual relationships with surrounding natural features and elements including terrain and topography
- materials and treatments

- lighting and lighting aesthetics
- placement of signage and views
- integration measures including land form and vegetation
- aesthetic considerations
- cultural considerations
- driving experience: including movement through the route and key transitional sequences particularly as they relate to the wider landscape character areas and site specific environmental areas that will be identified as part of the EDF process
- scenic protection, key viewshafts and visual landscape features
- open space and access where relevant
- opportunities for cultural landscape interpretation and expression of mana whenua where appropriate.

2.8 Supporting information

Detailed information should be included where appropriate on, for example, roadside furniture, planting schedules and species, and outline specifications.

2.9 Draft notice of requirement conditions

An outline of proposed notice of requirement conditions as they relate to environmental considerations and the management of the environmental effects, including landscape, ecology and urban design.

2.10 Next steps/implementation

The EDF will set out the next steps as to how the framework outcomes and initiatives will be implemented. The EDF should where appropriate also outline:

- **action plans** to set timeframes, budgets and priorities for implementation of the EDF initiatives
- **development briefs** to ensure consistency of EDF outcomes across various project elements and sectors
- **design review processes** to ensure the purposes and vision of the EDF is achieved
- **management arrangements** to ensure that quality standards are achieved across project disciplines and that the design and construction managers achieve a consistently high standard across the project as a whole.

3. EDF preparation process

As outlined above, effective community consultation is a key component of the success of a project. One means of ensuring appropriate input into the EDF would be to establish a working party. The purpose of the working party would be to assist in the identification and peer review of environmental design objectives, initiatives, opportunities and actions for the project. This would provide a forum for stakeholders to engage in the process.

The terms of reference for a working party would typically be:

- The working party guides the development of an EDF which will enable environmental design issues and opportunities to be part of an integrated design approach.
- The EDF working party is chaired by the consultant in consultation with the client. Those stakeholders identified in the conditions of consent are invited to be represented on the working party. Any pre-existing MOU agreements or consultative arrangements doesn't preclude involvement in the working party.
- The working party recognises that there is a distinction between those matters that are part of the NZTA's capital project and the environmental management and design opportunities beyond the site and project area and that while some opportunities identified in the EDF are not specifically part of the project, the EDF integrates the project in a way that does not preclude their implementation by others.
- The working party provides a forum to give effect to the environmental designation conditions or conditions of consent and should be seen as a key catalyst for developing the EDF.
- Compliance with unrelated conditions is appropriately dealt with through a separate channel/protocol developed with the appropriate authority.
- The working party maintains an awareness of other major development and infrastructure projects being undertaken that may impact on environmental design initiatives in the project area.

It will be important that any working party dealing with the environmental design components of the project keeps in regular contact with those responsible for other workstreams (such as roading and bridge design, stormwater management) to ensure that all packages are integrated so as to not undermine any one mitigation package.