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1 INTRODUCTION AND GENERAL PROVISIONS

1.1 INTRODUCTION

1.1.1 General

- a) This Document is designed to give effect to the Nelson Resource Management Plan by providing acceptable design solutions to Developers, Designers and Asset Managers within Nelson City Council area.
- b) This document replaces the Nelson City Council document known as the Nelson City Council Engineering Standards 2003.
- c) The Land Development Manual (LDM) provides a means of compliance when designing and constructing land development and infrastructure works that are required to fulfil conditions imposed by a Resource Consent or Building Consent (or works that fall within the requirements of the District Plan, if a consent is not required ie, as a permitted activity condition.)
- d) The LDM contains two different levels of design requirements and responsibilities:
 - 1) Text contained within a 'border': The text within a border (or within a table) represents minimum standards for controlled activity subdivision and/or development in relation to rules in the Nelson Resource Management Plan (NRMP). These are specific requirements which need be met in order to achieve the objectives and performance criteria of the LDM.
 - 2) Text not contained by a border: The text without a border represents design requirements and guidance that are not minimum standards. These are required to be considered when proposing design methodologies not supported by the minimum standards and/or those that relate to Appendix 14 Residential Subdivision Design and Information Requirements of the NRMP.
- e) The construction requirements of the LDM are minimum standards and therefore 'borders' have not been used in these sections.
- f) Where the design work proposed does not meet the minimum standards then additional information/preliminary engineering design must be submitted with the design substantiating how the respective objectives and performance criteria (outlined in the LDM) will be met. This additional information/preliminary engineering design may be required by council at the time of application for resource consent.
- g) The construction requirements of the LDM are all seen as minimum standards and therefore 'borders' have not been used in these sections.
- h) It is difficult to achieve better urban design goals by imposing prescriptive resource management plan rules and minimum

engineering standards. This will be particularly relevant for greenfield hillside subdivision and intensification within the existing residential area. In recognition of this, the Council considers that a minimum standard approach will not suit all situations and therefore guidance and requirements for non minimum standard approaches is provided.

1.1.2 Overview of Land Development Manual

The Nelson City Council's Land Development Manual (LDM) has been organised into two key parts for ease of reference.

Part 1 (Sections 1 to 3) contains standards that relate to the administration of Council's asset infrastructure. This includes:

- a) Section 1, Introduction and General Provisions – Definitions and interpretations of words.
- b) Section 2, Process and Information Requirements – Particular information about the key steps in the process and decision points where Council approval may be required.
- c) Section 3, Legal – Liability and responsibility issues, training and qualifications, and the location of services.

Part 2 (Sections 4 to 12) contains the standards relating to the design, material specifications and construction and installation of all and any part of the infrastructure that will fall under Council's control. The sections covered are:

- a) Section 4, Transport – Standards for the design and construction of transport corridors and the management of road reserve.
- b) Section 5, Stormwater – Standards for the design and construction of stormwater systems. Including alternative designs such as low impact design.
- c) Section 6, Wastewater – Standards for the design and construction of wastewater collection and disposal systems.
- d) Section 7, Water – Standards for the design and construction of water supply systems.
- e) Section 8, Trenching and Reinstatement – Standards for all trenching and excavation work on underground services.
- f) Section 9, Earthworks – Standards for land disturbance activities involving the preparation of sites for development.
- g) Section 10, Electrical and Streetlighting – Standards for electricity and road/streetlighting. This section is based on the requirements of network line operators.
- h) Section 11, Telecommunications Utilities – Standards for telecommunications which are based on the requirements of line operators.

- i) Section 12, Reserves and Landscaping – Standards for parks, reserves, walkways and any public open space areas, in the context of land development.

1.1.3 Objectives

The objectives of the Nelson City Council Land Development Manual are:

- a) The standard of service ensures the health, safety and wellbeing of people and communities;
- b) Community identified outcomes have been achieved in accordance with the Long Term Council Community Plan (LTCCP);
- c) The management of natural and physical resources, in accordance with the Resource Management Act 1991 (RMA), is sustainable;
- d) Technical guidance about the design and construction of services necessary to meet the objectives and policies of the Nelson Resource Management Plan (NRMP) has been provided;
- e) Other network utility providers have worked together with Council to deliver telecommunication, electrical and road network infrastructure works effectively and efficiently;
- f) Long-term life-cycle costs associated with all service infrastructure assets are effective and efficient;
- g) Good urban design and low impact design principles through land subdivision and development have been encouraged where they are appropriate and practicable;
- h) Innovation in the use of alternative methods for achieving design objectives has been encouraged, provided that minimum standards for safety and efficiency of infrastructure provision can be met in a cost-effective way for the Community and Council.

1.2 GENERAL PROVISIONS

1.2.1 Document Control

1.2.1.1 General

- a) The LDM is a controlled document and amendment or re-issue is the responsibility of the Council Engineering Manager with approval of the Nelson City Council Committee.
- b) Amendments/reviews are carried out three-yearly. However, an earlier individual amendment may be made if an important alteration to a standard or technology arises.
- c) Significant amendments will be reviewed and approved by Council Committee.
- d) Each copy of the LDM will be available to existing copy holders and a register of these is held by the Engineering Manager.
- e) The LDM is part of the NRMP as an externally referenced document under Part 3, Clauses 30-35 of the First Schedule of the RMA 91.

1.2.1.2 Review Procedures

- a) When the LDM is reviewed on a three-yearly cycle and once the draft document is approved by the Council Committee, the document will be submitted to interest groups for comment and feedback followed by a public consultation period. A panel comprising Councillors and Council staff will review and hear written comments on suggested amendments.
- b) The review panel will confirm any further amendments, following the submissions process and subsequently approve the document for publication and for updated references in the NRMP to be notified.

1.2.2 Statutory Requirements

- a) The provisions of the LDM shall be read subject to the provisions of the Nelson Resource Management Plan (NRMP) and to any applicable statutes, regulations and bylaws.
- b) The main overarching legislative instrument that requires the necessity for the LDM is the Resource Management Act. While the Manual is also required for use in the following statutes:
 - 3) Building Act 2004
 - 4) Local Government Act 2002;
 - 5) Land Transfer Act 1952;
 - 6) Unit Titles Act 1972; and
 - 7) Property Law Act 1952;

- c) Requirements from each legislative document provide Consent Authorities with the powers and functions to request, provide, and supply information pertaining to the land.

1.2.3 Applicability

The standards outlined in this document will apply to:

- a) All infrastructure assets that are to be vested in Council;
- b) All infrastructure assets constructed under contract for Council;
- c) Any development that may have an impact on Council's infrastructure assets;
- d) Development that requires a building consent or resource consent.

This covers:

- Subdivision development;
- Any building or construction works;
- The design, construction and/or installation of any infrastructure assets;
- Land activities that require modification of waterways and/or land disturbance; and
- Any repair or maintenance works that may affect existing infrastructure.

The intention of this document is to encourage quality land development both in the urban and rural sectors. An overview of the definition of quality urban design is provided below and in the NRMP, specifically the District Wide Objectives in Chapter 5 and Appendix 14 of the NRMP.

1.2.4 Quality Urban Design Overview

1.2.4.1 General

- a) High quality urban design is more than an engineering exercise to get the building blocks of development. It is about designing the Urban environment to get the best urban form practicable. High quality environments cannot be achieved without good subdivision.
- b) The NRMP in conjunction with the LDM describes how neighbourhoods should be structured and the layout of streets, lots, and networks designed, in ways that achieve maximum benefits to the subdivider, end-resident, and community. It is largely aimed at urban subdivision; however, most of the core design principles can also be applied to rural and rural residential subdivision. For further information on Urban design refer to Chapter 4 and of the NRMP.
- c) Council offers a pre-application design process in order to work with the subdivider to achieve high quality development that will be successful in the short term and for generations to come.

1.2.4.2 Core Design Principles

- a) There is a range of key issues that need to be addressed in the development of new neighbourhoods and subdivisions. They directly relate to the quality of environments we create:
- 1) **Rationale** should underpin all design. Good subdivision is more focused on a clear rationale as to why and how decisions have been made about the design elements, rather than whether they strictly comply with statutory requirements.
 - 2) **Context** in which the subdivision is located must be taken into account in the design including the existing urban, landscape and social setting.
 - 3) **Integrate** with surrounding neighbourhoods, through the roading and open space networks. Encourage pedestrian and cycle activity around convenient access and routes.
 - 4) **Layout** should contribute to the local identity of the Nelson City Council, responding to site characteristics, the surrounding environment, notable features, views, and identified region-wide strategic initiatives.
 - 5) **Reinforce** existing local focal points in the community, ensuring that residents are in walking distance of a range of amenities. Provide new nodes and focal points logically on the movement network.
 - 6) **Variety** of lot sizes and other compatible uses encourages a diverse community.
 - 7) **Connect** movement networks including street, cycle and walkways to provide accessibility and choice in the local area, reducing travel distances, vehicle emissions, and money spent on petrol that could cumulatively help the local economy and increase accessibility to public transport.
 - 8) **Convenient** designs ensure residents have convenient access to public parks, open space and community facilities.
 - 9) **Open Spaces** need to be safe, legible, cost effective to maintain and capable of providing a variety of recreation uses.
 - 10) **Safe** developments are based on lots fronting the road and public open spaces, providing informal surveillance of the public realm.
 - 11) **Low impact** approaches to managing stormwater run-off and other resource use helps maintain the long-term environmental quality of the sub region.
 - 12) **Ecological and heritage** features should be protected and enhanced. This can be achieved in a manner that adds value and uniqueness to subdivisions.

- 13) **Consultation** should be undertaken with stakeholders and affected parties prior to the design process being initiated. In particular in discussion with Tangata Whenua cultural landscape values should be recognised and applied.
 - 14) **Strategic planning** sets the framework for the City and District. Any subdivision should be undertaken within the parameters of this planning to ensure that the overall direction for the Nelson City Council is achieved.
- b) For further guidance on Quality Urban design refer to Chapter 5 and Appendix 14 of the NRMP.

1.3 DEFINITIONS

Annual Exceedance Probability (AEP) – means the probability of exceedance in any 12-month period.

CBD – Central Business District (shall be the areas within, and roads adjoining, the Suburban Commercial, Inner City and City Fringe zones in the NRMP).

Council – shall mean the Nelson City Council or its officers.

Cycleway – means so much of any road (or other land) as is laid out or constructed by authority of the territorial authority primarily for cycles; and may include the edging, kerbing and channelling thereof.

Designer – shall mean the person responsible for producing and/or submitting the Engineering Drawings for approval and may be a Chartered Professional Engineer, Registered Professional Surveyor or authorised person experienced in the production, design and submission of plans.

Developer – means an individual or organisation having the financial responsibility for the development project and includes the owner.

Developer's Professional Advisor (DPA)¹ – means the person, appointed by the developer being a Registered Professional Surveyor or a Chartered Professional engineer, who shall be responsible for:

- 1) The investigation, design and obtaining of approvals for the works;
- 2) Contract administration and oversight of the works;
- 3) Certification upon completion of the works;
- 4) Sole point of communication with Council.

DI – ductile iron pipes – generally socket jointed with Tyton elastometric seal rings.

¹ The DPA may nominate in writing to the Engineering Manager a DPA Representative for the construction phase of the project. The DPA's Representative must be a suitably qualified and competent person and not being a body corporate or firm. The Council will not unreasonably withhold the nomination of the DPA's Representative.

DN – nominal pipe bore diameter in millimetres. For polyethylene pipes, this relates to the pipes' outside diameter. For other pipes this relates to the internal diameter.

DP (Design Pressure) – the maximum operating pressure that the designer expects to act on the pipeline in service.

Drainage – means wastewater drainage or stormwater drainage, and "drain" has a corresponding meaning.

Easement In Gross – An easement in gross is an easement that, unlike a normal easement, does not attach to any dominant tenement; examples are the right of public utilities, such as power, gas, phone, water and sewerage, to use part of the land.

Earthworks – means any alteration to the contours, including the excavation and backfilling or recompaction of existing natural ground and the stripping of vegetation and topsoil.

Electrical Reticulation – means all "Electric Lines" that are owned by the "Line Owner" and form part of the Line Owner's electrical Reticulation System or "Network".

Engineering Manager – shall mean the Senior Executive Infrastructure of the Council.

Exclusive Fittings – means those fittings used or intended to be used for the purpose of supplying electricity exclusively to that property.

Footpath – means so much of any road as is laid out or constructed by authority of the territorial authority primarily for pedestrians; and may include the edging, kerbing and channelling thereof.

Geotechnical Engineer – means a Chartered Professional Engineer (CPEng) or an engineering geologist with recognised qualifications and experience in geotechnical engineering and experience related to the development.

Ground – is used to describe the material in the vicinity of the surface of the earth whether soil or rock.

GRP – means glass reinforced plastic pipes, eg Hobas. This type of pipe is generally only used for major transfer or transmission mains since pipe diameters of less than DN 300mm are rare.

Household Unit or Dwelling Unit – means any building or group of buildings, or part thereof used, or intended to be used principally for residential purposes and occupied or intended to be occupied by not more than one household.

HCV – means a Heavy Commercial Vehicle.

Independent Qualified Person (IQP) – means a specialist approved by the territorial authority and having the appropriate skills and qualification to carry out specific procedures.

Installation – shall include excavation, the laying or thrusting of the pipe, ducting or cabling service, backfilling and reinstatement of surface.

Land Drainage System – refers to the flow of surface and ground water but concentrates mainly on peak surface discharges and their regulation under urban conditions.

Landowner – shall mean the consent holder or persons responsible for, or authorised persons subdividing or developing the land.

LGA – means the Local Government Act 2002.

LGOIMA – means the Local Government Official Information and Meetings Act 1987.

Line Owner – means a person or company that owns electrical reticulation (works) that are used or intended to be used for the conveyance of electricity.

LINZ – means Land information New Zealand.

Low Impact Design (LID) – an alternative stormwater management system that utilises natural drainage features in the landscape such as infiltration, filtering, storing, detaining and evapotranspiration rather than piped systems.

LTCCP – means Long Term Council Community Plan.

Maximum Design Pressure (MDP) – the maximum instantaneous pressure that may be created within a pipeline, including for pressure surge effects.

Means of Compliance – means a method by which the requirements of the standard may be complied with. It implies that there may be other methods which may meet the requirement subject to specific consideration or approval.

MHWS – means Mean High Water Springs.

Network Connection Point – means the position where a service connects to a Line Owner's network.

Network utility operator – has the same meaning given to it by Section 166 of the Resource Management Act 1991.

Nominal Pressure Rating (PN) – the pressure marked on the pipe or component and the maximum pressure that it can operate at throughout its design life.

NRMP – the Nelson Resource Management Plan.

Operating Pressure – means the internal pressure which occurs at a particular time and that on average will likely be experienced at a particular point in a water reticulation system on a typical day. For a gravity system, the operating pressure will depend on the water level of the reservoir, the ground level at the point on the pipeline under consideration, and the head loss due to demand in the system.

Operator – shall mean the party or parties either as approved by the Council or as approved as a network operator under the Telecommunications Act 2001 or as approved under any other service supply Act to carry out excavation, backfilling or reinstatement works within the road reserve under the control of the Nelson City Council.

Owner – the owner of the land that has the power to make decisions about the land and the power to sell the land. Includes the Crown, the Public Trustee, and any person, local authority, board, or other body or authority however designated, constituted or appointed.

PE – polyethylene, generally pipes for water supply networks, for example PE 80B or PE 100. PE 80C is not recommended for long-term water reticulation networks.

PN8 – means quality and thickness of wall of pipe (the higher the number the higher the strength and quality).

Point of Supply – means the point at which the supply authority responsibility ends.

Primary Design Flow – Is the estimated run-off selected to provide a reasonable degree of protection to the surrounding land and buildings. In most cases this flow will be piped or contained within relatively narrow confines under public control by reserve or easement.

Private Road – means any roadway, place or arcade laid out within a district on private land by the owner thereof intended for the use of the public generally.

Private Way – means any way or passage whatsoever over private land within a district, the right to use which is confined or intended to be confined to certain persons or classes of persons, and which is not open or intended to be open to the use of the public generally and includes any shared access or right of way.

PVC – (Polyvinyl Chloride) – material from which the pipe or fitting is produced; has a similar meaning for uPVC, mPVC, PVC-O. Note – no glue jointing is permitted.

RMA – means the Resource Management Act 1991.

Road – has the same meaning given to it by section 315 of the Local Government Act 1974.

Road Reserve – means the whole parcel/s of land designated as road reserve.

ROW – means Right-of-Way.

Runoff cover – means extension of insurance cover if a company ceases trading.

SD – refers to a Nelson City Council standard drawing detail.

Secondary Flow Path – refers to the path taken by run-off in excess of the primary design flow.

Service or Service Main – is the term for the cable (fitting), owned by the owner of premises and connecting premises to the electrical reticulation at an agreed network connection point.

STP – means System Test Pressure.

Street – has the same meaning as “road” as defined by section 315 of the local Government Act 1974.

Stormwater – is rain water that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels or pipes into a defined surface water channel, open watercourse or a constructed infiltration facility.

Surface Water – means all naturally occurring water, other than sub-surface water, which results from rainfall on the site or water flowing onto the site, including that flowing from a drain, stream, river or sea.

Survey Plan – means a survey plan in terms of section 2 of the Resource Management Act 1991.

Swale – means a constructed watercourse shaped or graded in earth materials and stabilised with site-suitable vegetation, for the safe conveyance and water quality improvement of storm run-off.

System Test Pressure (STP) – the hydrostatic pressure to be applied to a newly laid pipeline (measured at the lowest point) to ensure its integrity and water tightness.

Territorial Authority (TA) – means a territorial authority defined in the Local Government Act 2002.

TMP – means Traffic Management Plan.

NRMP – means the Nelson Resource Management Plan.

Urban Design – means the design of buildings, places and networks that make up our towns and cities, and the ways people use them. It ranges in scale from a metropolitan region, city or town down to a street, public space or even a single building.

Wastewater – is water that has been used and contains unwanted dissolved and/or suspended substances from communities, including homes, businesses and industries.

Water Supply Authority – (WSA) – is the operational unit of the TA responsible for the supply of water, including its authorised agents.

Works – can be any type of construction or infrastructure and includes earthworks. Works can also be in the form of “money” as defined by the RMA.